

LINKING EDUCATION AND THE LOCAL ECONOMY

INTERMEDIARIES IN A FURNITURE ECOSYSTEM

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**AFRICAN
MINDS**

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Abbreviations

GOVERNMENT DEPARTMENTS

DEA (circa 2014–2019)	Department of Environmental Affairs
DWAF (circa 1994–2009)	Department of Water, Agriculture and Forestry
DAFF (circa 2009–2019)	Department of Agriculture, Forestry and Fisheries
DFFE (circa 2019)	Department of Forestry, Fisheries and the Environment
DHET (circa 2009)	Department of Higher Education and Training
DOE (circa 1994–2009)	Department of Education
DOF (circa 1994)	Department of Finance
DOL (circa 1994–2019)	Department of Labour
DST (circa 2009–2019)	Department of Science and Technology
DTI (circa 1994–2019)	Department of Trade and Industry
DTIC (circa 2019)	Department of Trade, Industry and Competition

OTHER ABBREVIATIONS

4IR	Fourth Industrial Revolution
AM	Additive Manufacturing
ANC	African National Congress
APEM	The Peruvian Association of Mango Exporters
BBBEE	Broad-Based Black Economic Empowerment
CAD	Computer-Aided Design
CAM	Computer-Aided Manufacturing
CCMA	Commission for Conciliation, Mediation and Arbitration
CEO	Chief Executive Officer
CNC	Computer Numerical Control
COSATU	Congress of South African Trade Unions
CPUT	Cape Peninsula University of Technology
CSIR	Council for Scientific and Industrial Research
DUI	Doing, Using and Interacting
EPWP	Expanded Public Works Programme
EU	European Union

FITB	Furniture Industry Training Board
FURNTECH	Furniture Technology Centre Trust
GDP	Gross Domestic Product
GEAR	Growth, Employment and Redistribution Programme
GM	George Municipality
GVC	Global Value Chain
IAP	Invasive Alien Plant
IDC	Industrial Development Corporation
IPAP	Industrial Policy Action Plan
ISP	Industrial Strategy Project
KZN	KwaZulu-Natal Province
LIPS	Local Innovation and Production System
merSETA	Manufacturing Sector Education and Training Authority
NEMBA	National Environment Management Biodiversity Act
NGO	Non-Government Organisation
NIPF	National Industrial Policy Framework
NSA	National Skills Authority
OECD	Organisation for Economic Co-operation and Development
PFMA	Public Finances Management Act
PhD	Doctorate qualification
PROMANGO	Small Farmer Association of Mango Exports, Peru
PROMPERU	The Commission for the Promotion of Peru
R&D	Research and Development
RDP	Reconstruction and Development Programme
RSA	Republic of South Africa
SADC	Southern African Development Community
SAFCOL	South African Forestry Company Limited
SAFI	South Africa Furniture Initiative
SANParks	South African National Parks
SDCI	School Desks and Conservation Initiative
SEDA	Small Enterprise Development Agency
SETA	Sector Education and Training Authority
SIDA	Swedish International Development Agency
SMME	Small, Medium and Micro Enterprise
TIPS	Trade and Industrial Policy Strategies
TVET	Technical and Vocational Education and Training
UILs	University-Industry Linkages
UK	United Kingdom
USA	United States of America
VET	Vocational Education and Training
WCPG	Western Cape Provincial Government

CHAPTER ONE

Introduction

This book comprises an interdisciplinary focus on a number of critical inter-dependent issues facing South Africa in the current period. First, it examines in general terms the decline of manufacturing because of the process of deindustrialisation via a case study of the furniture industry in South Africa. Second, the book prioritises, both theoretically and practically, the impact of deindustrialisation on 'local economies' with a case study of the Southern Cape furniture industry in the coastal towns of George and Knysna. Third, it examines the intricate web of inter-dependencies which constitute such local economies by focusing in particular on the linkages between firms and education and training (ET) institutions in a local setting. Historically, these linkages have evolved through a range of structural developments (such as the rise of manufacturing after the discovery of gold and diamonds in the 1860s–1880s) but also the more informal and cooperative actions of firms and other social institutions, working together to build a viable industry in a local setting – in this case, furniture production in the Southern Cape. In the current period, these historical linkages (apprenticeship being the most critical) are in rapid decline, with little contact and cooperation occurring between firms and ET institutions in this local setting. And finally, the book seeks to identify solutions to this industrial and skills decline. It proposes the policy idea of intermediaries working in industry ecosystems to rebuild the linkages which have been lost between industry and education since the late 1980s. It also investigates empirically whether enhanced digital and design skills can assist in turning around the local furniture industry in Knysna and George.

The focus of this chapter is to explain the wider purpose of the book, which as indicated above, is multi-faceted. The first section focuses on the central educational theme in the book, which is to highlight the significance of formal and informal linkages between the economy and the ET system – linkages which provide conduits for interaction and cooperation between firms and ET institutions. The second section focuses on the centrality of firm learning – a key construct within the 'economics of innovation' theoretical school in which this book is located. A third section offers a critique of the dominant theoretical paradigm in economics – neo-classical economics – which informs the dominant political ideology of the global economic order, neoliberalism.

The discussion then shifts in the fourth section to privilege a focus on local innovation and production systems (LIPS) as the best means of analysing and understanding furniture sectors – which tend to agglomerate in local industry clusters across the globe. The fifth

part of the chapter introduces the new policy concept of ‘intermediaries’. These bodies are viewed as being able to provide potential solutions to the absence of linkages, interactions, cooperation and coordination in many declining South African local economies. This section also explains why the furniture cluster in George and Knysna was chosen as a case study of the wider South African furniture sector. The sixth section introduces the idea of ‘reimagining’ state policy on the LIPS and its post-school education and training structures. The entirety of the concluding chapter – Chapter Nine – is dedicated to this process of reimagining. The final section of this chapter introduces what a LIPS research methodology would entail, including some of the history and evolution of the George and Knysna furniture cluster as necessary background information.

THE SIGNIFICANCE OF LINKAGES

The focus on ‘linkages’ is a central theoretical concern in this book. Such linkage formation is a critical yet under-recognised component of what writers such as Streeck (1992) and Dertouzos et al. (1989) have referred to as ‘collective factor inputs’ in capitalist production. These collective goods arise because the market mechanism is unable to provide all the conditions necessary for economic success – especially those factors of production which cannot be acquired through private property rights. Collective factor inputs are the non-market, non-price collective goods which are becoming increasingly important in the new global economy – for example, the need for industrial peace, cooperative work relations, cross-functional skill competence, and strong capabilities amongst economic actors to network (create linkages) with each other. Private capital usually does not invest in collective goods because such investments yield little return to the individual firm in the short term. But these investments are essential pre-requisites at a societal level if global competitiveness and economic prosperity are to be attained. It is an important role of the state to encourage and facilitate the development of these collective goods. This is a key theoretical and political premise underpinning this book on linkage formation.

As indicated above, the focus of the book is concerned, first, with solutions to linkage collapse, and second, whether these solutions can be most effectively promoted by intermediation and ecosystem strategies. Intermediation is a process of brokerage performed by an independent entity seeking to promote greater cooperation between key actors in the society and economy. Intermediation provides a means to rebuild the interactive capabilities of localities and regions (often called ‘ecosystems’ in the business studies literature) which critically include the bridge-building and linking processes discussed above. The book uses a case study of the furniture industry in the Southern Cape to illustrate this process of linkage collapse, and to investigate the potential of intermediation and ecosystem strategies to rebuild these linkages.

The structured linkages of the past, such as apprenticeship contracts, bursaries and internships offered by large firms and state-owned enterprises to learners in critical professions and para-professions, have collapsed because of global change – essentially deindustrialisation and various neoliberal economic reforms such as privatisation and the hollowing out of state institutions. In addition, informal linkages such as inter-firm

networking and information sharing – activities that happen largely in local and regional economies (or ecosystems) – have also significantly weakened. Indeed, a major conclusion of research in this book is that the private sector has opted out of participating in all of the public-sector post-school organisations such as the Technical and Vocational Education and Training (TVET) colleges and the Sector Education and Training Authorities (SETAs). This delinking phenomenon constitutes a major crisis for the country. Understanding its root causes and generating solutions are the main objectives of the book.

The literature on linkage formation within the ‘economics of innovation’ school is relatively under-developed particularly for economies located in the developing world. There are two important sources utilised in this book on linkages to overcome the lack of a mature literature. The first is the work of South African scholars based at the Human Sciences Research Council (HSRC). Petersen and Kruss (2020) adapted various innovation concepts to create a model highlighting the organisational dynamics required by post-school organisations in South Africa to stimulate linkages. The main component of their model is to emphasise the dynamic interactive capabilities needed by university leadership to accomplish successful linkages and partnerships with industry. This work is discussed briefly in Chapter Two and developed further in the final chapter. The second approach on utilised linkages is a conceptual model developed by the author of this book as a means of plugging the hole left in the innovation literature on linkage formation. In Chapter Four, I develop two conceptual devices to assist in outlining how education-economy linkages have formed historically in South Africa. The first is a historical template drawn from the political economic literature on South Africa. This template condenses the economic history of South African capitalism since 1652 (the arrival of Dutch settlers) into thirteen ‘shaping’ moments. These moments are understood to have given birth to the major enabling or constraining factors which have shaped the structure of South African capitalism over time. The second conceptual device is the construction of a taxonomy of education-economy linkages based on the empirical evidence emerging from the detailed reading of the political economy literature outlined above. The discussion in Chapter Four seeks to show how the political economic context has shaped the education-economy linkages which emerged in South Africa over time, and in some instances, how these linkages have dissipated over time.

ECONOMICS OF INNOVATION AND THE CENTRALITY OF FIRM LEARNING

The book is unique theoretically as it situates the analysis of delinking within the rich insights of the new ‘economics of innovation’ literature and the older neo-Marxian traditions of development studies and political economy. The primary focus of the economics of innovation has been the study of ‘the firm’ as a social as well as economic organisation, and particularly, the role played by ‘learning’ within the firm in the new global economy. This is because the greatest value-added in production is increasingly generated by the dynamic capabilities of firms (including design, marketing and advertising) and their ability to absorb new technologies and work organisational

routines, introduce new processes and product, and operate in newly diversified fields of the economy. Competitiveness here is therefore endogenous, built within the firm, primarily through the effective harnessing of the tacit knowledge capabilities of the firm.

The economics of innovation school also stresses the need for interactional capabilities. It was Lundvall (1985), a founding scholar of the innovation school, who first argued that firm learning occurs best through the interactive processes of people involved in production – interaction which entails the sharing of production ideas and new knowledge between workers in the same firm, sharing new knowledge across neighbouring firms in the same industry, and seeking knowledge from external actors, such as universities, colleges, incubators, consultants and training institutes. Collective inter- and intra-firm learning is a central activity of successful local and regional economies.

A further contribution of the economics of innovation school is its focus on ‘systems’ of production – even at micro levels. This signifies the importance of ecosystems within the literature and the governance of their highly inter-dependent constituent elements, all of which exist within the local production system. Problems emanating from these inter-dependencies need to be resolved systemically.

The systemic lens also has to do with the plurality of actors and processes involved in the economy beyond firms and markets. These include organisations such as university research and development (R&D) institutes, venture capitalists, training agencies, government regional development agencies and local municipalities, to mention only a few additional players. In Lundvall’s view, because of this plurality of players, it is best to think of the innovation process as occurring within a ‘system’ (Lundvall 1985). Innovation is not the act of an individual firm owner but a collective process of many players interacting together to achieve growth and enhanced competitiveness. The contribution of each player is dependent upon the simultaneous contributions of others in the collective and, as such, it is a system with multiple inter-dependencies.

A CRITIQUE OF ORTHODOX ECONOMICS

The book is significant as an economic text on the post-school system because it positions itself outside of orthodox economics and its bias towards neoliberal arguments about the superiority of economic governance based on free-market forces unencumbered by state interference. Richard Nelson, whose 1993 edited book entitled *National Innovation Systems: A Comparative Analysis*, is considered a founding economics of innovation text, argues that Neo-Classical Economics provides formal models of the capitalist economy in idealised terms that are a significant distance from the actual context and course of economic action. Highly problematic, in his view, is the neo-classicist presumption that economic actors act purposefully, rationally and optimally. It is assumed they do this in contexts familiar to them, with at least a rough understanding of the consequences of following various courses of action. Nelson argues that this assumption is problematic because although this may be true in familiar and stable economic contexts, it is not the case in contexts of unfamiliarity and uncertainty – which as Schumpeter pointed out in

the 1930s (Schumpeter 1934) is the normal state of most market economies. However, neo-classical economics has abstracted this presumption of rational behaviour into a formal 'theoretical assumption that their behaviour is optimal, in the sense that what they do is the best possible action for them to take, given their objectives and the constraints they face' (Nelson et al. 2018: 12). It is a formal framework which simply does not capture the extent of variety and divergence on the ground in the behaviour of economic actors who face continuous uncertainty and flux in the market.

In an alternative approach, innovation economists focus on the learned routines of firms facing uncertainty, and how these learning and selection processes respond to variations in context. Initially, in relatively constant environments, learned routines serve economic actors well, providing adaptive responses routinely, although this outcome could not be described as optimal. However, these routines (shaped largely by the tacit experience and knowledge acquired by participants in the production process) eventually become obsolete because of the wider socio-economic changes that have occurred. In this new context, economic actors are forced to operate in environments where experience provides little guidance to appropriate action. This is when the innovation process kicks in. Actors need to execute search and problem-solving activity aimed at finding solutions that are discovered, imagined or constructed. This is a very different orientation than that of conventional neo-classical theory in which the 'choice set' generally is taken as given and optimal (Nelson et al. 2018: 16).

A second and related problem with neo-classical economics is the assumption that a market economy will always move towards a state of 'equilibrium' between demand and supply, where competitive prices are determined and resources allocated on the basis of optimal choices and rational decisions. Fransman (2018: 17) indicates that such a conception of reality is static and does not reconcile well with the 'restless, uncertain world that is the capitalist system in which we live'. Rather, economic actors cannot always be expected to know the nature of economic change, and in attempting to respond, they:

construct subjective expectations that they know may be wrong. Different players in the same circumstances may construct inconsistent expectations. If they do, over time some will turn out to be right, others wrong. (Fransman 2018: 17)

Economics of innovation scholars also stress the centrality of institutions in structuring and supporting the market mechanism. In Nelson's 1993 book, the role of institutions in constituting a national system of innovation was outlined. He critiques neo-classical economics' encouragement of an extremely 'thin' institutional environment. The neo-classicist view is that if the market mechanism is allowed to work unrestrained by government, then fewer institutional 'props' will be needed to ensure economic progress and growth. Nelson maintains that this overly sparse institutional picture fails to recognise the complexity of market relations, in particular, 'their embedding in broader social and institutional structures and the elements of cooperation and trust required if markets are to work well' (Nelson 1993: 4).

FOCUSING ON LOCAL PRODUCTION SYSTEMS

This book uses a case study of the furniture industry in the Southern Cape to demonstrate the extent of linkage collapse between this sector and post-school organisations in the region. However, it does not focus on the national furniture industry but rather, on the oldest furniture cluster in the country – that being the Southern Cape industry located in the rich pine forests of George and Knysna. Choosing a local economy case study rather than a national sectoral focus was essential to the study of furniture production. This is because leading furniture scholars such as Schmitz (1999) and Maskell and Lorenzen (2004a,b) have all argued that furniture sectors globally are more reliant on what they term ‘collective efficiency’ than other sectors. Schmitz defined collective efficiency as the competitive advantage attained by small firms in agglomeration contexts through the harnessing of external economies and joint action. These small firms would only remain competitive if they exploited the benefits of the collective organisation of the industry through externalities (e.g., spillovers of expertise from lead firms to small suppliers in the local economy) or through joint action – for example, the establishment of shared training, logistical and marketing schemes for the benefit of small firms in the local industry.

The furniture industry is particularly vulnerable to unpredictable fluctuations in demand and the need for continuous product variety (Maskell & Lorenzen 2004b). Its economic survival requires collective action and the production of a diverse range of products – often within a cluster structure – which is only possible if local firms cooperate with each other to achieve these goals. Individualistic action by furniture firms operating on their own is not likely to succeed in the long term. It is because of this powerful logic that it is necessary to study furniture sectors in their agglomeration context in local and regional economies. This focus on the local is also required because it is within these micro contexts that firms learn both internally and externally – through collaboration with other firms and a wide spectrum of non-market actors such as ET institutions, non-governmental organisations (NGOs) and local state development agencies.

Having determined that a focus on the local economy is critical, the study adopted the research methodology associated with the local innovation and production systems (LIPS) approach developed amongst Brazilian innovation economists in the 1990s and officially adopted and financially supported by the Lula and Rousseff governments as a key part of Brazilian innovation and industrial policy (Cassiolato et al. 2018).

However, the LIPS concept is relatively unknown outside of Brazil. Elsewhere within the innovation school, a similar concept is that of ‘ecosystem’. This latter concept is widely used within the business studies literature – as well as in the popular media. For convenience purposes, the two terms – LIPS and ecosystem – will be used jointly in this section so that the meaning of the former can be better clarified. Thereafter, the term LIPS will be the main concept used given the adoption of the LIPS methodology in the research fieldwork. The important takeaway here is that ‘ecosystem’ and ‘LIPS’ are similar concepts.

The concept of ecosystem is derived from the biological sciences, where its evolutionary and adaptability dynamics are emphasised. However, the concept has also had a long and rich lineage of intellectual inquiry by scholars from economic geography and other disciplines, all seeking to explain why firms cooperate and cluster together in geographical space and what the benefits are from such clustering and cooperation. In this literature, the ecosystem and LIPS ideas offer a more holistic picture of firm activity than concepts such as cluster and value chain – primarily because they emphasise both the external institutional environment alongside the internal characteristics and operations of firms (Fransman 2018). The unit of analysis is the entirety of the ecosystem or LIPS and not just the firm or network of firms in a global value chain (GVC) or cluster (Mason & Brown 2014).

In their more recent economic usage, the terms ecosystem and LIPS refer to complex economic systems with highly inter-dependent relationships between their component parts (Hodgson & Spours 2016). Resolving the requirements of inter-dependence necessitates relational and collective attributes which are not captured by orthodox neo-classical explanations. For example, Moore (1993) views an ecosystem concept as broad, covering multiple economic and social organisations. In this view, ecosystems are dynamic and purposive networks in which participants co-create value. Ecosystem participants co-evolve capabilities around a shared set of technologies and cooperate and compete to support new products and the next round of innovation. They are collaborative arrangements through which firms combine their individual offerings to collectively create value that no single firm can do alone (Autio & Thomas 2014).

Ecosystem and LIPS research approaches prioritise the concept of ‘place’ and ‘embeddedness’. According to Giordano et al. (2015), geographic proximity facilitates the exchange of tacit knowledge, interpersonal trust and enables collective engagement with new technological platforms. These writers argue that location-specific assets such as regional knowledge bases (universities and R&D institutes) determine in important ways the viability of innovation ecosystems (2015). Mason and Brown (2014) indicate these assets can take several forms – a location that is highly desirable as home to the creative classes; anchor tenants such as large multinationals or prestigious research universities; as well as old industrial assets in decline that can be reconfigured to new purposes (Boutillier et al. 2016; Giordano et al. 2015; Hodgson & Spours 2016; Mason & Brown 2014).

The historically acquired ‘embeddedness’ associated with ecosystems and LIPS has to do with the relations of trust and cooperation between firms in a local setting – for example, the joint actions between local and external firms which are necessary to unlock the tacit insights emerging from diverse production sites. Passador et al. (2013) see this process as the development of social capital between actors participating in these learning activities. Formal learning networks may emerge because of these joint actions and trust, or the links may remain informal and sporadic. These interactions all take place within a local environment that provides a sense of community and common identity. The production system and the expertise to run it becomes ‘embedded’ over time within

these social and cultural relations of production and incorporates within its boundaries many anchor organisations that carry the ‘footprint’ of the locality – bodies such as ET organisations and industry associations that may have had a long history of involvement with the locality.

INTERMEDIARIES: PROVIDING SOLUTIONS TO ECOSYSTEM DECLINE

Another key feature of ecosystems and LIPS are their governance and coordination functions, which some commentators have termed ‘orchestration’. For Walrave et al. (2013), the task of reaching alignment between all internal players and with the external environment is the central challenge for an effective ecosystem or LIPS. At stable moments of its existence the ecosystem will be self-organised and active processes of alignment will not be necessary. But they are dynamic systems which evolve constantly, and so ecosystems and LIPS require an entity that orchestrates the process of integrating and aligning the ecosystem and realising its value proposition.

Such orchestration and linkage have become more pronounced in the recent period. Williamson and De Meyer (2012) argue that this is because contemporary manufacturing is highly dispersed, unlike in previous capitalist eras where large firms were vertically integrated and required only a few external suppliers. Beverland et al. (2015) concur, viewing the modern manufacturing ‘value chain’ as being ‘highly distributed’ rather than ‘global’. Manufacturing is now characterised by multiple interfaces and exchanges of intangibles, knowledge assets and goods combining to produce an object for sale with services and through multiple routes to market.

In short, the relevant knowledge and capability is dispersed and scattered across several players in the value creating ecosystem or LIPS. Managing this set of complementarities requires a flexible set of multilateral relationships with the lead agent acting to set up an ‘overall architecture which structures the key interfaces and incentives’ (Williamson & De Meyer 2012: 14). The lead agent usually performs this coordination role, for example, by acting as a conduit for communications, as a go-between to achieve complementarities, and as an arbiter of disputes between players in the locality.

This role of orchestrating is most often taken by the lead firm – usually large and/or multinational firms. Where lead firms do not perform this governance role, other actors are looked upon to perform this ‘system alignment’ function. One such body is termed ‘quangos’. They are created by government to devolve political functions to various ‘at arm’s-length’ organisations to lighten the load on central government. They operate at a distance from the central state and are freed from much of its bureaucratic controls, allowing them to be more flexible and innovative than central state departments would normally be.

Quangos are not always the wise choice to provide governance for ecosystems and LIPS. Isenberg (2013) argues that whereas governments have the mandate to intervene, they do not necessarily have the competence to do so effectively. Isenberg suggests the role be given to an intermediary organisation – what he terms an ‘entrepreneurial enabler’ – that has the competence and motivation to enhance the ecosystem. NGOs may be chosen to play this role, given their independence from the central state. Such

NGOs would provide ecosystems with economic management services such as business and technological incubators. They may have significant sectoral expertise and can assist as intermediaries in that sector. Each of these bodies (lead firm, quango or NGO) would perform this role of ecosystem governance as ‘intermediaries’.

THE CHOICE OF THE SOUTHERN CAPE FURNITURE LIPS AS CASE STUDY

Several choices were made in deciding to locate a study of intermediation and ecosystems within the South African furniture industry. The first choice made was to follow the theoretical injunction made by Schmitz in 1999 that harnessing all the ‘collective efficiencies’ in the locality or ecosystem was the critical basis for success in the furniture industry. The decision was then made to study this industry as a means to investigate the contribution made by intermediation and ecosystem strategies in attaining these collective efficiencies in a local setting.

The second choice was to choose the Southern Cape furniture hub which fulfils the theoretical idea of a ‘local innovation and production system’ which this study adopts as its central analytical lens. This furniture LIPS comprises the co-location of key nodes in the value chain. Forest plantations, sawmills, kilns, timber suppliers, education and training (ET) organisations and furniture makers all exist in one place, potentially making the systemic study of the inter-dependencies between these critical nodes of the industry much easier.

Another factor in the choice of furniture location is the local industry’s classic ‘boom-and-bust’ storyline. Whereas during the Apartheid era, the main roads of George and Knysna were filled with furniture showrooms with beautiful Cape vernacular yellowwood furniture, in the current period, stagnation and deindustrialisation have replaced the prosperity of the earlier era. Many of the showrooms are now closed. In their place, George in particular has become a wealthy ‘financial-tourism-real estate’ regional hub.

And finally, the furniture sector is important historically because its production process is labour intensive and based on small firms, providing important employment opportunities for unskilled and semi-skilled people in society. But more importantly, the skills of manufacturing with timber (and knowledge of the properties of timber) are needed in several other intersecting value chains, including construction, the home décor industry, boat building, as well as the creative industries (which play a key role in developing design capabilities), biotech and agri-processing sectors.

The boom-and-bust storyline begs the question: what solutions are available to revive declining sectors? The state has promoted clusters as a solution to old manufacturing industries such as furniture and clothing (DTI 2008; Kaplinsky et al. 2003; Kaplinsky & Morris 2014; TIPS 2020a,b). Several proposals seeking the revival of the Southern Cape furniture cluster have been drafted in the past two decades. These proposals have centred on increasing collective efficiencies in the cluster and harnessing joint actions between actors.

Another set of solutions has come from industry strategists globally, who argue that both digital and design capabilities are crucial to the revival of the furniture manufacturing

sector globally. These policy suggestions have been taken up by the South African government as well in its various reviews of the furniture industry. Hence, this study has adopted a specific focus within the LIPS to investigate the extent to which design and digital capabilities are being developed – or not.

A final contribution from the innovation literature has been the recommendation that developing economies in particular utilise intermediaries – or brokers – in contexts where lead firms and government cannot be relied upon to usher in the required changes as suggested above. Intermediaries have the ability to get all actors together to formulate and implement the necessary economic changes (Szogs et al. 2009; Watkins et al. 2015).

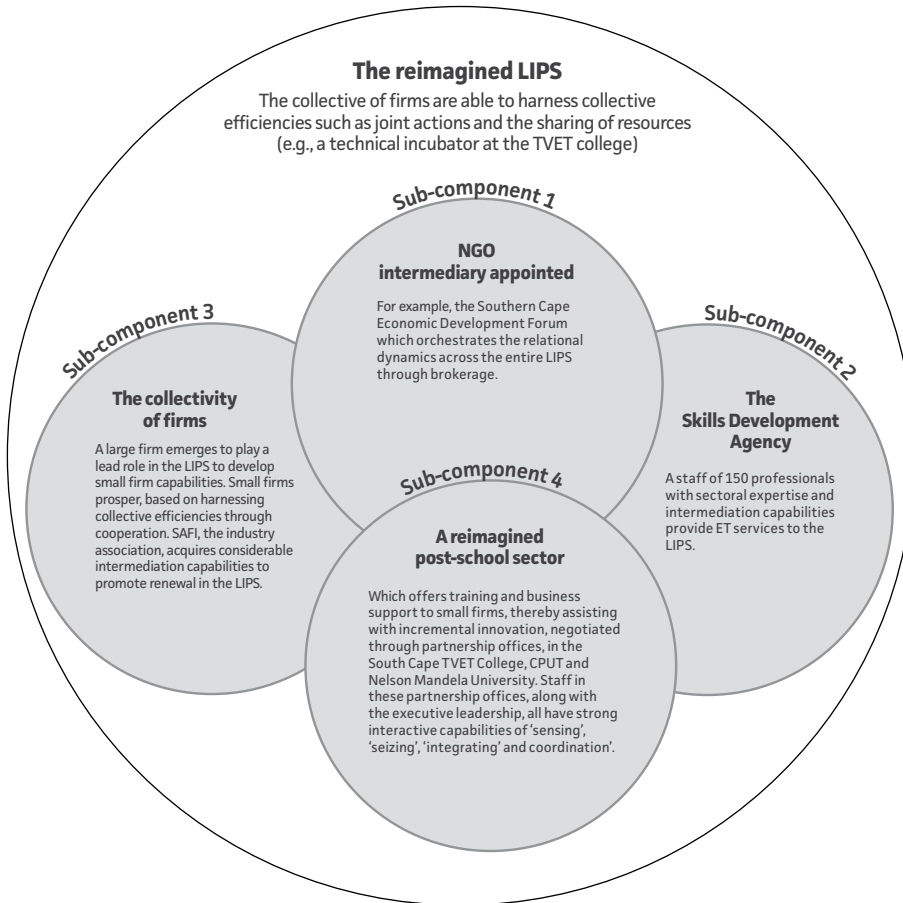
THE LIMITS OF RESEARCH ON INTERMEDIATION AND THE NEED FOR ‘REIMAGINING’

One major constraint on the research process into intermediation in South Africa is the fact that there is little evidence of intermediaries being established, and little research or advocacy on the subject. The lack of evidence of intermediation is not because it has been shown to fail and has no value in developing economy contexts, but rather, because of lack of knowledge of its benefits, and because of the dominance of neoliberal ideas about the retraction of the state from the economy and surrendering the governance of the economy entirely to market forces. There are no government policy documents on intermediation, nor major academic research outputs, apart from Petersen and Kruss’s (2020) published work on the Square Kilometre Array (SKA) astronomy project, and McGrath’s 2023 edited book on ecosystem case studies in South Africa (McGrath et al. 2023). All the above factors have made the research process difficult, creating a counter-factual dialogue, one which describes what has not happened (what is borne out by the facts) but what could be if a different pathway were traversed. Much contemporary research faces this conundrum.

One method of enriching a counter-factual analysis is to undertake a ‘reimagining’. Barnett (2013: 6) sees reimagining as the presentation of new ideas which are simultaneously critical in tone but ‘realistic with an awareness of the deep and global structures that undergird’ society and the economy. What is needed, according to Barnett (2013: 6), is not more critique and ‘utopian ideas, but rather, feasible utopias’. In a similar vein, the concluding chapter posits an argument that is informed by both the critique offered in the book, but which is also informed by a reimagining of how intermediation policy interventions could have been different and more successful in the furniture LIPS of the Southern Cape if they had been implemented effectively.

Chapter Nine will ‘reimagine’ four intermediation interventions occurring in four sub-components of the furniture LIPS. These are: (1) a reimagined cluster with an independent NGO serving as orchestrator of the LIPS; (2) a reimagined role for state quangos, and in particular, the 21 SETAs; (3) the consolidation of the ‘collectivity’ of firms in the LIPS and their more effective governance; and finally, (4) re-imagining intermediation capabilities located in post-school institutions. Figure 1 illustrates this overall structure of the reimagined LIPS and highlights the extent of intermediation which could take place if state industrial policy, the collective of firms and post-school organisations supported such an approach.

Figure 1. A reimagined LIPS based on intermediation interventions in four subcomponents of the local economy



The policy recommendations made in Chapter Nine entail radical shifts in state policy thinking, especially in its industrial and skills policies. It will also require a different conception of the state, one which is less bureaucratic and reliant on imposed compliance and centred more on attaining greater interaction and cooperation between the main actors studied in this book. It will also need a different view of governance of state functions, requiring significant devolution of power and control to local actors, including appropriately chosen intermediaries. Some readers will dismiss this work as naïve, and as one reviewer stated, it is 'a rather romantic collectivist view of innovation'. As with the reception of other new work in the academy, some readers will go with their prior theoretical formulations that have been accumulated from past theoretical interactions. They will insist that the reimagining in Chapter Nine is wishful thinking. Hopefully, this book will convince others that our future economic trajectory needs to be rethought and

reimagined, and not so heavily reliant on past theoretical thought and political ideology. Hopefully, this book (drawn from the economics of innovation school, the largest body of economic research globally that provides concrete alternatives to neo-classical economics and neoliberal politics) will assist in providing those answers. This is a key political aim of the book.

APPLYING THE LIPS RESEARCH METHODOLOGY

The research in this book applies the LIPS qualitative methodology. The central unit of analysis is the firm, with a focus on the internal learning at the firm level and learning facilitated in these firms through external linkages to post-school organisations in the innovation system. A convenience sampling of firms in the Southern Cape furniture sector was undertaken (a detailed focus on 11 firms out of a total of 50 firms currently operating in the region, plus a further three former firms that had closed because of fierce competition from Southeast Asian economies). Additionally, five potential intermediaries in the LIPS were chosen for investigation in the study. These were:

1. Two industry ‘boundary spanners’;
2. A furniture incubator;
3. The industry association, the South African Furniture Initiative (SAFI);
4. The School Desks and Conservation Initiative (SDCI); and
5. The 21 SETAs.

These five potential intermediaries were selected from the two dominant types of intermediaries – independent and state-aided quangos. Either type can act as brokers (intermediaries) between the national government and other economic actors, such as firms in a furniture LIPS (Peters 2018). Other economic actors were also interviewed, including:

- The lead retailer in the sector, Steinhoff, that is included because of its parasitic role in the sector over the past two decades.
- Nelson Mandela University (NMU) and the Cape Peninsula University of Technology (CPUT) are also studied, particularly their failure to offer furniture design courses and the lack of intermediation activity between these education organisations, government agencies and furniture firms in the region.
- The South African National Parks (SANParks) that regulates South Africa’s public national parks. SANParks is also studied as an actor because it leads the SDCI in George that seeks to transform alien timber into commercially viable furniture products such as school desks and chairs – that are intended for government procurement.
- Interviews with senior government officials about the intermediation potential of the 21 SETAs operating in the South African vocational training system.

The Southern Cape furniture LIPS is comprised territorially of the small towns of George and Knysna that lie on the southern coastline of the Western Cape. The two towns have histories that are strongly tied to the start of formal forestry in South Africa. Early forestry activities were initiated by the Cape government in the late 1890s. A Forestry Training College was initially established in 1912 at the Tokai Forest in the Cape, but was moved to Saasveld, George, in 1932. At that time, the students were primarily government employees working in the forestry industry. The establishment of forestry in the Southern Cape region was soon followed by the start of furniture manufacture. For over a hundred years, the region was famous for the manufacture of yellowwood household furniture – with yellowwood abundant in the indigenous forests that surrounded Knysna and George. State foresters began planting pine forests for the construction sector. This industry was very buoyant in this early period, with growth driven by the process of industrialisation and urbanisation – in particular, the establishment of towns across the country linked to the emerging mining and manufacturing sectors (Louw 2006).

These towns were major beneficiaries of the policies of Apartheid. The state owned and controlled the forests, which were run by the Department of Forestry until 1990 when a state enterprise, the South African Forestry Company Limited (SAFCOL), was formed to manage the plantations. A ready supply of both hardwoods, such as yellowwood, and softwoods, such as pine, were made available at state sawmills. The Southern Cape benefited as well from the skills of coloured artisans, who had inherited these capabilities from their Malaysian and Indonesian slave ancestors (Van Duin 1992). The towns also benefited from the fixed pricing of timber that served the interests of furniture producers and building firms in the construction sector. Import-substitution industrialisation provided manufacturers in these towns with a protected national market, insulated from the competition of global players until post-1994 when import tariffs were lifted. The towns were also centres of tourism, and most visitors made a point of looking at the furniture wares on display in the Main Street showrooms when on holiday in the region.

Much has changed since democracy dawned in 1994. Privatisation of the forest plantations has been the biggest change, with major cost implications for timber supplies for furniture makers. Indigenous yellowwood was declared a protected species and could only be bought through state-held auctions (Stehle 2013). Supplies of both yellowwood and pine, along with other species, were now disrupted, unreliable and more expensive. The replanting of forests has now fallen seriously behind, creating a new crisis in forestry that was not there at the end of Apartheid.

Perhaps the most profound shift has been the changes that have taken place in George, the larger of the two towns, that has become a financial services and retirement hub in the region, with older industries such as manufacturing in decline. The furniture sector is today a shadow of its former self. Most mass production of furniture now occurs in KwaZulu-Natal (KZN) and Gauteng, and the George and Knysna industries are a mix of some mass production, some office furniture and a small community of design-intensive bespoke manufacturers – who import almost all of their hardwoods from the United States of America (USA).

This shift is a clear case of deindustrialisation and the transition of George from a manufacturing town to one defined by the financial, business services, real estate and tourism sectors. Over the longer term the structure of the economy in George has become dominated by the services sector, shifting dramatically away from the primary and secondary sectors (agriculture, forestry and manufacturing). Over the past decade, manufacturing in George grew at a relatively lower average rate than the national economy in general and, therefore, its contribution to economic output has declined. The historic manufacturing industries such as furniture production continue to decline in George at a rate of -2.17% per annum (GM 2015: 20).

Toerien and Donaldson (2017) have done research on changes in gross value-added (GVA) in George from 1996–2011 for the top economic sectors and sub-sectors. The impressive growth of finance and insurance contrasts starkly with the demise of furniture value-added during this period. Construction and real estate now thrive within the George municipality, mainly due to George's proximity to the coastal Garden Route and its tourism potential. The construction sector within George is driven almost exclusively by the tourism industry and the building of holiday homes, retirement estates and tourism facilities (Toerien & Donaldson 2017: 18-19).

The data¹ also confirm the dominance of the finance, real estate, insurance and business services sectors in George. In a local economy worth ZAR17.86 billion in 2018, and that grew at 2.4% annually, the finance, real estate, insurance and business services sectors grew at 3.7% (and were valued at ZAR4.80 billion in 2018), followed by the wholesale and retail sectors that grew at 1.2% annually (worth ZAR3.8 billion in 2018). Manufacturing grew at 1.5% per annum to come in third place at ZAR2.67 billion (WCPG 2020a: 16).

The Knysna local economy is smaller and poorer than that of George. In 2018, the local economy was valued at ZAR4.9 billion, with an annual growth rate of only 0.7% as compared with George at 1.9%. Again, the finances, real estate, insurance and business service sectors dominated economic output at ZAR1.2 billion in 2018 with an annual growth rate of 1.15%, followed by the wholesale and retail sectors (at ZAR932 million). Manufacturing came in at fourth place after government services at ZAR588 million and a growth rate of 1.3% (WCPG 2016; WCPG 2020b).

Although the above information does not provide a comprehensive overview of the regional economy in the period 2016–2018 when the fieldwork was done in the LIPS, it is evident that a process of deindustrialisation has taken root in the Southern Cape. This process has had severe implications for the furniture industry, with a negative growth rate of -2% annually over the past decade (GM 2015: 20). The demise of furniture production has multiple causes – with almost all associated with neoliberal industrial policies and deindustrialisation. These include the lifting of the benefits provided

1 Statistical data on the furniture industry has been extremely difficult to find. First, primary data sources produced by Statistics SA do not disaggregate furniture statistics by cluster or local economy – which was necessary to get more micro detail on the economic history of the George and Knysna cluster. Second, the lead writers on the furniture sector in South Africa – Raphael Kaplinsky and Mike Morris – concluded their furniture research around 2010. They have not produced new data since that cut off point. However, sufficient data has nonetheless been collected to match the time period when interviews and fieldwork trips to firms occurred, which was between 2016 and 2018.

by import-substituting industrialisation such as subsidies and import tariffs, trade liberalisation, the onslaught of cheap Chinese furniture imports, dramatic increases in the cost of production inputs such as timber, electricity and municipal rates – and most importantly for this book, the collapse of the all-important linkages that served as the ‘glue’ holding together the inter-dependencies defining the LIPS. All these causal factors will be discussed further in various sections of the book.

While the sectoral case study is on furniture production, the findings have important implications for other old manufacturing sectors such as metals, clothing and leatherware. All are threatened by the same processes of deindustrialisation as described above. As such, the analysis and conclusions drawn in this book may very well apply more widely to the national economy.

CHAPTER TWO

Conceptual framework for understanding local economies and their linkages to education and training

This chapter outlines the theoretical framework and research methodology adopted in this study on the furniture sector and its underpinning local innovation system in the Southern Cape. The research methodology was developed in 1999 by innovation economists in Brazil working within the REDESIST research network. They apply the concept ‘local innovation and production system’ (LIPS) in all their research work on local economies. As with other writings on local economies (particularly work emanating from economic geography), the core focus of the LIPS methodology is to understand local innovation systems – for example, those sectors that agglomerate and cluster in one locality as does furniture production. The REDESIST research network has also focused on other small locales such as city-regions, redundant inner-city areas and tourism, fashion and design hubs across the globe.

The LIPS framework developed by the Brazilian REDESIST research network has been critical of the dominant industrial policy approaches on clusters and GVCs which tend to prioritise the national and global dynamics operating between competing firms, thereby neglecting the critical learning that evolves at the local level. REDESIST was also critical of the dominant application of the innovation approach in the 1990s and 2000s which adopted a narrow view of the innovation process, over-emphasising the role of R&D, research universities and other science and technology organisations involved in technology transfer processes (Cassiolato & Lastres 2020). For the LIPS group of researchers, the local innovation and production system was the critical unit of analysis, especially the learning processes these firms engaged in (Morrison et al. 2007: 7). Additionally, the LIPS scholars believe – contrary to the dominant trend in much innovation research – that it is not only the Silicon Valley cluster and Italian industrial districts that need to be studied as paradigmatic cases. Rather, it is the more ‘middling’ cases that should also be researched (Peterson 2015: 7).

Cassiolato et al. (2018) concur, arguing that the concept of LIPS assumes that some kind of system always exists around every production activity, no matter how fragmented and unstructured it may be. The concept of LIPS, therefore, is always synonymous with

prioritising the local. It is also a more inclusive methodology than other innovation approaches because it consciously seeks to study sectors often excluded from the more prestigious foci of conventional innovation research – including sectors such as the informal economy, waste collection and the creative industries (Cassiolato et al. 2018).

This chapter is structured as follows: it first presents an outline of the LIPS research methodology. The discussion then elaborates on four additional issues relevant to the LIPs methodology and drawn from the wider innovation studies literature. These issues include:

1. The critical role of developing capabilities within firms including digital and design skills used in furniture sectors globally.
2. Schmitz's earlier injunction that furniture firms need to harness all 'collective efficiencies' available to be profitable as an industry needs more explanation. These efficiencies are most often attained through locational clustering and high levels of inter-firm cooperation.
3. There is also a need for more discussion on 'linkages' and the process of building bridges between industry and ET institutions – a topic not widely covered in the extant innovation literature.
4. The centrality of 'coordination' in the LIPS need to be recognised as well. This refers to coordination between state departments, quangos, firms and other societal institutions, and between all participating firms in the ecosystem, large and small.

Understanding these four issues theoretically is a crucial addition to the LIPS methodological toolbox as outlined in the next section.

THE SEVEN METHODOLOGICAL STEPS OF THE LIPS RESEARCH APPROACH

The research methodology applied in this book entails a detailed examination of the following seven foci:

Multiple actors

The definition of a LIPS, according to Stallivieri et al. (2008: 2), is a 'group of economic, political and social agents localised in the same area, performing related economic activities and generating formal and informal articulation, interaction, cooperation and learning processes'. Generally, LIPS comprise a wide range of local actors:

- *Firms* who design, produce and commercialise final goods and services, as well as the suppliers of raw materials and technical equipment;
- *Specialised subcontractors* who carry out distinct stages of production processes for other firms;

- *Capacity creation, research and technological services* in charge of ET, R&D and technological transfer;
- *The subsystem of policies, promotion, representation and financing*, including not only public support organisations but also trade unions, support service consultancies, business representation and other intermediaries;
- *The subsystem related to the political, economic, social, cultural and environmental context*, such as non-governmental organisations and organisations of civil society; and finally
- *The subsystem of demand* ‘encompassing end users and user-producer interactions and the learning opportunities they offer up’ (Cassiolato et al. 2018: 15).

‘Local’ is the central focus

For LIPS scholars, four features of local economic development are central to their approach. The first is that a collective set of actors is taken as the unit of analysis, and not individual firms. This collective unit ‘covers the space in which learning takes place, productive and innovative capacities are created and tacit knowledge flows’ (Cassiolato & Lastres 2020: 787). The second feature is related – it involves privileging the importance of the local generation of innovation through the exchange of tacit forms of knowledge and its recombination with newly acquired knowledge and information (Stallivieri et al. 2008). The third is that the local is the level at which public initiatives are at their most effective – the level at which the state is closest to really understanding ground-level production conditions and how to change them (Cassiolato & Lastres 2020). The fourth is about territorial scale – that the LIPS is itself located within a regional/national territorial system, and that it forms a component of the larger world economic system.

Strong connections to state policy

An impressive aspect of the LIPS initiative in Brazil is its strong state support across the Lula and Rousseff governments – it was officially adopted as innovation policy at national, regional and local levels. According to Cassiolato et al. (2018: 7) this support ‘has reinforced the extremely rich process of experimentation and learning. All agents involved have learnt a lot’. As part of this state support, the federal government funded part of the costs of LIPS research over a 20-year period. Moreover, the federal government initiated a Permanent Working Group on LIPS within the Ministry of Development, Industry and Foreign Trade. Its focus has been to coordinate the LIPS projects nationally and learn from their successes and failures (Cassiolato et al. 2018).

Pursuing learning and building technological capabilities

Innovation requires continuous access to new knowledge sources through interactive processes with other actors in the innovation system. The LIPS methodology requires the following investigation into local knowledge sources. These are:

- Investigating internal learning processes within the firm, either through the routinised circulation of information and the interaction between teams, or through purposive efforts to foster interaction and engage in re-engineering, research and development;
- Researching the formal ET of employees as well the circulation of these professionals in the local environment;
- Investigating external learning processes through interaction with companies from different segments;
- Interviewing other educational and S&T organisations including representative bodies, public organisations and civil society;
- Determining the performance of the organisations of the science and technology subsystem in expanding learning and building capabilities; and
- Researching the expansion of firms into new markets and new productive activities (Cassiolato et al. 2018: 11; Cassiolato & Lastres 2018: 790).

Reorganising work and building organisational capabilities

Considerable research within the wider innovation literature and within LIPS on high performance systems has been done on how changes in work organisation have strengthened firms' organisational and production capabilities, both by harnessing the externalities that are derived when workers and management cooperate to improve performance through, for example, flattening hierarchies and decentralising responsibility to collective work teams (see Lorenz & Holm 2021). Additional training for workers and allocating them more discretion in production has resulted in positive outcomes, building the firm's organisational capabilities and improving the overall competitiveness of firms (Lorenz & Holm 2021; Lundvall et al. 2008; Kraemer-Mbula et al. 2019). This process is an 'expansive' conception of building individual competencies and organisational capabilities that emphasise the acquisition of knowledge across the total production system (Fuller & Unwin 2010: 12). Such expansiveness is a central element of the LIPS approach to learning.

Cooperation and embeddedness

Investigating the extent of cooperation is a further priority of the LIPS method following on from research learning processes and building local firm capabilities. This process is necessary given that for many knowledge environments, tacit knowledge is 'sticky' (embedded) and difficult to transfer from one context to another. Trust and cooperation between firms in a local innovation system, or joint actions between local and external firms are necessary to unlock the tacit insights emerging from diverse production sites. Passador et al. (2013) see this process as the development of social capital between actors in an ecosystem participating in these learning activities. Formal learning networks may emerge because of these joint actions and trust, or the links may remain informal and sporadic. These interactions all take place within a local environment that provides a

sense of community and common identity. The production system becomes ‘embedded’ over time within these social and cultural relations and incorporates within its boundaries many anchor organisations that carry the ‘footprint’ of the locality – bodies such as ET organisations and industry associations that may have had a long history of involvement with the locality.

Governance and coordination

The coordination and complementary alignment of all the elements of the local innovation system is a critical prerequisite for system success. According to Cassiolato et al. (2018), governance refers to the different mechanisms that characterise and guide the decision-making processes within a LIPS. It encompasses modes of coordination between different actors, such as local companies, representation and promotion organisations operating at different levels, and non-governmental organisations (Cassiolato et al. 2018). It is a ‘manifestation of the exercise of power by organisations and individuals’ (Cassiolato et al. 2018: 12). All local systems will experience some forms of contestation and resistance between actors over time, with power distributed asymmetrically because of past historical developments and conflicts. A significant component of the LIPS focus on governance and power comprises the role of actors, such as government and intermediary agencies, and the management of large and multinational corporations, who can choose to play a leadership and dialogic role in resolving these intra-LIPS tensions – or not. Those lead firms that choose to orchestrate ecosystems are performing a strategic step aimed at the construction of a common vision and the development of collective strategies – something that not all large firms do (Cassiolato et al. 2018).

ADDITIONAL LIPS INSIGHTS DRAWN FROM A BROADER LITERATURE

As indicated earlier regarding the structure of this chapter, discussion will now extend to four additional issues relevant to the LIPs methodology and drawn from the wider innovation studies literature.

Capabilities

A key learning activity emphasised in the innovation literature is that of building capabilities that are the direct outcomes of learning processes in firms (Bell & Pavitt 1995). Capabilities comprise the skills and broader abilities to change and absorb new technologies to rapidly adapt production systems to new market requirements. Morrison et al. (2007: 7) define capabilities as:

the skills – technical, managerial or organisational – firms need to utilise efficiently the hardware (equipment) and software (information) of technology and accomplish any process of technological change. Capabilities are firm-specific, institutional

knowledge made up of individual skills and experience accumulated over time. Technological change is the result of purposeful activities undertaken by firms.

Building capabilities requires purposeful investments in endogenous learning that can facilitate capability building over time. New machinery on its own does not ensure that the technology will be effectively utilised. Bell and Albu (1999) maintain that the system of knowledge required to maximise internal technological capabilities is vast and complex, stretching from the machinery and inputs used in production, to the acquired know-how, operating procedures and organisational arrangements necessary to integrate all of these elements into a viable and profitable production system. It requires problem solving skills and the abilities to reconfigure production to meet new requirements. It also requires the inputs of suppliers and customers, who have a rich experience of the product and its market limitations. Accessing new knowledge resources to remain competitive is key. This result is achieved, first, through endogenous means but, more importantly, through linkages to external sources of knowledge. These processes of knowledge absorption require sophisticated in-house firm capabilities. Such resources take a long period to evolve incrementally but, ultimately, they give firms 'change generating' abilities regarding their production systems. Such adaptability is critical if firms are to remain competitive in volatile global markets (Bell & Albu 1999: 1715).

Design capabilities

Design skills are a key capability in manufacturing. This is certainly true for furniture manufacturing. The importance of design lies with the fact that design is a component of the intangible assets in production that today earn the highest returns in the marketplace. Mitsuhashi (2006) argues that non-production activities such as design and marketing require tacit and experiential knowledge that is difficult to imitate when compared with the physical transformation of materials that can be standardised. This difficulty suggests a higher level of entry barrier, thus, generating an important basis for higher returns.

A second feature of design is its engineering role in process and product upgrades. Bell (2007: 30) elaborates on this important aspect when he distinguishes between two types of capabilities:

1. *Operational capabilities*: capabilities to use and operate given forms of technology in specific configurations; and
2. *Innovation capabilities*: capabilities to create new knowledge or to transform knowledge into new specifications and concrete forms required for operational use.

Bell (2007) then proceeds to distinguish these capabilities as between non-R&D and R&D modes of innovation. He warns that much of non-R&D innovation remains unrecognised in the science, technology and policy worlds, with recognition mostly going to R&D capabilities and, ultimately, innovation as radical and not incremental. In countering this view, Bell argues that a 'wide range of activities and capabilities that

are not R&D also play a major role in bringing new technology into practical use in the economy' (Bell 2007: 30) – especially when new to firm and market (but not necessarily new to country and world). They are operational capabilities acquired differently from innovation capabilities, largely through interactive processes of sharing with other members of knowledge networks and/or acquired from competitors, suppliers and customers. Bell argues that much of the production engineering and industrial design work in key economic sectors contributes to these non-R&D capabilities and they should not be underestimated in science and technology communities and in the industrial policy world (Bell 2007). The significance of the LIPS framework is that it places this key theoretical premise at the centre of all of its research work.

Defining furniture design

Bettiol et al. (2009: 5) define aesthetically oriented design 'as a non-explicit practice adopted internally by companies and as a structured function that contributes to product innovation'. It is different to 'innovation' that combines the more formal technical aspects of production to achieve scale economies, such as automated technology, new production processes, investments in R&D and the firm's ability to manage its intellectual property by using patenting tools (Bettiol et al. 2009). Design, in contrast, comprises high levels of personalisation in that it is an aesthetic exercise highly reliant on craft and artistic skills. The role of design in furniture manufacturing has focused on the creation of extremely differentiated products, almost unique pieces, targeting niches of sophisticated consumers.

Design is also strongly associated with marketing and branding. Design capabilities are about the ability to interpret the consumers' demands, understand marketing trends and product aesthetics. Indeed, as Bettiol et al. argue, 'the technological and functional components of a product are not enough to ensure a sustainable competitive edge' (2009: 5). Design is becoming an increasingly important feature for enhancing even high-tech products. Consumers are asking for 'satisfying experiences' and 'soul supplements' as part of their consumption habits – the technological functions of products are no longer sufficient (Bettiol et al. 2009: 5).

CLUSTERS, GLOBAL VALUE CHAINS AND LOCAL INNOVATION SYSTEMS

The discussion now shifts to a second LIPS issue requiring further elaboration. This issue is related to understanding why so many furniture sectors across the globe evolve in the form of 'clusters'. The answer lies in the need for furniture sectors to cooperate so as to generate the 'collective efficiencies' that serve as key prerequisites for success in furniture manufacture. Cooperation enables the sharing of knowledge and learning experiences and is one of the primary means for the furniture sector remaining competitive (Schmitz 1999).

'Collective efficiency' and 'collective action' as concepts emerged out of the early research work undertaken within industrial districts – an early version of the 'ecosystem'

idea. Alfred Marshall was the first economist to examine the impact of external economies on the growth of small firms operating in the industrial districts of Europe in the early 1900s. His work was followed up by contributions from Michael Porter (see Porter 2003; Porter & Ketels 2009) on the similarities and differences between the older industrial districts and the clusters of the contemporary economy. Both stressed elements of what Hubert Schmitz in 1999 termed 'collective efficiency' (Schmitz 1999: 466). Schmitz defined collective efficiency as the competitive advantage attained by small firms operating in sectors derived from external economies and joint action. External economies arise when the social benefits of an economic activity are higher than private benefits. Classic examples of externalities in agglomeration contexts such as clusters are technological spillovers (often 'leaked' from the advanced capabilities of lead firms), a pool of specialised suppliers, shared vocational training services, a sufficient supply of skilled labour and export advice from public or private marketing agencies, to list only a few examples (Kaplinsky & Morris 2019).

Schmitz argued that externalities on their own were not a sufficient condition for the evolution of successful clusters. What was additionally required beyond the involuntary and incidental occurrence of external economies were consciously pursued joint actions taken horizontally between cluster firms. These joint actions entail individual firms cooperating around the sharing of expensive equipment, or joint logistics, marketing and bulk ordering of supplies. It also entails groups of firms joining forces in business associations and producer consortia with the collective aim of lowering costs and improving quality and time efficiencies (Schmitz 1999). Nadvi (2016) warns that such joint outcomes are not easy to achieve and are less common in incipient clusters than in more mature clusters.

Economic geographers Maskell and Lorenzen (2004b) followed soon after Schmitz's ground-breaking work with a detailed study of the furniture sectors of several European economies – research that sought to explain why small furniture manufacturers chose to cluster. They focused on the demand conditions that small manufacturers face – particularly those that limit economies of scale and scope. These demand constrictions include the uncertainty pervasive in the furniture industry because of 'unpredictable volume fluctuations combined with a constantly increasing demand for product variety' (Maskell & Lorenzen 2004b: 1000).

To attain competitiveness, furniture producers must manufacture a diverse range of quality products with speed. According to Maskell and Lorenzen (2004b), this result is achieved through vertical and horizontal relations of flexibility. Vertical flexibility is gained through adaptable relations with specialised suppliers all located within a cluster environment. By being geographically close to different suppliers, furniture producers can call on suppliers at very short notice to provide diverse inputs, allowing them to deliver quality new furniture products timeously. Horizontal flexible relations entail firms passing on excess orders to each other. To attain this flexibility, 'firms depend on an organisation of the market into clusters, where furniture firms use each other regularly', each specialising in a different furniture component or production activity (Maskell & Lorenzen 2004b: 1000).

Global value chains

One of the primary means of analysing cluster formations has been through the theoretical lens of GVC analysis. This epistemological location has meant that theoretical tensions have emerged between the GVC literature and innovation scholars – even though the two theories are potentially complementary. These tensions arise because GVC analyses do not focus in much detail on the learning processes that enhance the dynamic interactive capabilities of suppliers in local production systems such as clusters. In short, they do not focus on the strengths of the local innovation systems supporting upgrading processes in clusters. Rather, GVC approaches focus on inter-firm governance ‘to an excessive extent’ (Morrison et al. 2007: 15; Pietrobelli & Staritz 2017: 5). Indeed, upgrading requires continuous investment by local firms in the development of their capabilities. The opportunity for small, medium and micro enterprises (SMMEs) to enter GVCs and access their global markets should not be the primary objective of cluster development, but rather the deepening of their capabilities at the same level on the chain to exploit the potential for incremental innovation – but these processes are neglected in the GVC literature. In the absence of enhanced indigenous capabilities, firms will be unable to exploit the external sources of knowledge available within the GVC, making upgrading highly unlikely (Fagerberg et al. 2007).

What is required to change the above picture is for purposeful investments over time to build dynamic interactive capabilities in the local innovation systems underpinning these clusters. This practice is preferable to the more static activity of entry into GVCs as suppliers of inputs to large exporting firms because on-going access to value chains can easily be cancelled at short notice by the lead firms in the GVC. In addition, buyers in these chains may not promote any upgrading of capabilities among small firms thereby forcing them contractually into a static position regarding the evolution of their abilities (De Marchi et al. 2016; Morrison et al. 2007). A better route of research and analysis would be to determine all the sources of knowledge for local firms – albeit in GVCs (technology transfer from lead firms), but also from local sources (endogenous learning within firms) and from other non-GVC actors in the local context such as ET organisations (De Marchi et al. 2016).

The critique of clusters and GVCs put forward by these innovation scholars suggests that it is local innovation systems that should be receiving the research and policy attention, not the cluster concept that potentially occupies a temporary and unstable node along an extensive value chain. All this criticism of GVC analysis has led to calls for a closer integration of the innovation systems and GVC literatures – specifically to capture the learning efforts at the firm level that develop the capabilities of local firms (Pietrobelli & Staritz 2017). This is precisely the reasoning of the LIPS research collective in deploying a broad perspective in identifying the full innovation system and all of its processes – one which does not only include market-based actors, but also non-market players such as ET institutions and developmental NGOs.

BRIDGES BETWEEN INDUSTRY AND THE POST-SCHOOL SYSTEM

A third insight from innovation studies which impacts on the LIPS methodology is the way linkages between firms and education institutions are portrayed in the extant innovation literature – which LIPS forms part of. As indicated earlier, the dominant educational focus in the extant literature on innovation is on radical innovations and the R&D processes they require that are led by expert teams of scientists, PhD and post-PhD students and professional engineers – personnel all produced by research-intensive universities. As suggested by Codling and Meek (2006), research activity has become the central differentiator in the innovation literature on the innovation role of post-school ET organisations. Datta et al. (2019: 27) concur:

Theories of innovation that adopt a systems perspective have highlighted the centrality of the university sector as a key institutional actor in the national innovation system. However, the sector is conceptualised in a largely homogeneous way within these frameworks. More specifically, there is an implicit preference for a ‘one-size-fits-all’ model of the university system in these frameworks. The empirical reality is, however, quite different. There is still considerable diversity in university systems, particularly in developed countries.

This process has the effect of ignoring the innovation roles of most post-school organisations such as teaching universities, applied universities (European polytechnics or South African universities of technology), technical colleges and vocational education and training (VET) institutions. The central mission of these organisations is the practical training of entire workforces from low-skill and low-qualification levels all the way through to non-degree tertiary VET qualifications through to applied technology degrees at polytechnics. The production of technicians and artisans is emblematic of the important occupational roles catered for by all these post-school organisations – yet they are largely absent actors in the innovation literature.

The neglect of other ET organisations contradicts a central assertion of the innovation literature – the need for formal ET organisations to support the creation of firm-level capabilities to learn, develop recombinatory knowledge and innovate. Little of the literature focuses on this issue even though it continually emphasises its criticality to innovation processes. For example, Lundvall (2016) recognises the importance of ET organisations adapting to new social and technological developments. He writes:

The increasingly systemic character of new technologies, where old borders between technical and scientific disciplines are broken down, makes it necessary to review the traditional departmentalised organisation of academic training and research. (Lundvall 2016: 126)

However, there is no discussion of how this process takes place, particularly in developing societies. These are mostly countries characterised by neoliberal ideologies that promote

minimal state steering of the economy. They are defined by weak institutional and organisational capabilities that are needed to shape the process of recirculation that Lundvall is talking about. This is a central problem addressed in Chapter Eight of this book on the Southern Cape furniture industry for which the curricula and qualifications relevant to upskilling furniture workers in the Southern Cape are not in place at all. Yet little in the innovation literature focuses on these recirculation skills outside of the work of the LIPS school.

Lewis (2019) agrees with the critique presented here. He argues that academics and policymakers have devoted a good deal of attention – perhaps too much attention – to the high-level skills needed in many product processes. In his view, however, there are other ‘categories of worker who also make an important contribution to innovation, namely technicians and artisans’ (Lewis 2019: 6). These skilled workers contribute to the absorptive capacity of firms – the ability to understand and make good use of new knowledge when faced by volatile and rapidly changing trading conditions (Lewis 2019: 16).

Technicians and artisans, thus, are critical actors within the collective teams that lead innovation. They provide advice to the scientists and engineers involved in R&D about which designs are more likely to work and which would be hard to realise in practice. These two practices are critical to the innovation process – yet their genesis organisationally is not examined in any detail by the innovation literature.

Neglecting these para-professional actors also reduces the significance of the idea of transferring technologies that are ‘new to the user’ but not ‘new to the world’, because the former is a critical component of incremental innovation performed best by artisans and technicians who bring to the innovation process their work experience and routines and their collective ‘sticky’ wisdom embedded in the firm and region (Toner & Woolley 2016: 322).

Another weakness of the extant innovation literature is not acknowledging the team-based nature of the innovation workforce (for example, not recognising the contributions artisans and technicians make to innovation experiments led by research scientists and engineers most often working as a team). The flaw here is to ignore the powerful injunction in the literature for retaining the unity of production and R&D processes in one locale. This injunction has emerged following the past practice of separating creative R&D ideas (located in the head office) from production (which is offshored to low-wage economies) that have been shown to weaken innovation through the loss of knowledge embedded in production routines to design processes. Again, skilled personnel other than research scientists are essential to this task, including technicians, artisans, managers, foremen and supervisors. Bettiol and Micelli (2014) in discussing furniture making, argue that the combination of the R&D designer’s creativity and the artisan’s technical know-how are crucial conditions for successful small firms in the furniture sector.

The internal dynamics of forming linkages with post-school organisations

How do linkages between the post-school sector and the economy get built? The innovation literature – including the extant LIPS research – doesn’t answer this question

directly. However, there is an extensive literature in the innovation school focusing on (research) university–industry linkages (UILs).

This literature examines both the traditional focus of producing the human resources needed by the national economy and the contemporary focus on solving societal problems and promoting development. Central to the traditional approach, graduates employed by firms are seen as conduits for UILs because they carry general scientific knowledge (embodied knowledge) as a consequence of their professional education at universities (Dutrénit et al. 2010; Lundvall et al. 2009). The contemporary research's focus on UILs is more expansive with the Triple Helix concept dominating the field – a concept that has today extended to quadruple and quintuple helices (Carayannis et al. 2021; Leydesdorff & Etzkowitz 1998). However, even within this body of literature, there is little theorising about how such linkages are established, by which actors, in what internal processes and structures.

Leih and Teece (2016: 183) argue that the interactive framework between higher education, industry and the state developed by Leydesdorff and Etzkowitz (1998), founding authors on the triple helix, 'provides little guidance for university presidents, chancellors and others responsible for the long-term survival and growth of the university'. Research within strategic management theory, higher education studies and industry–higher education partnerships does focus on some of these questions, but in contexts in which partnerships do not occur, there is little to guide policymakers and practitioners in developing countries on how to initiate such linkages. Such research work would have to focus on the minutiae of forming linkages – explaining the steps taken by state officials, industry leaders, firm CEOs and higher education leadership, the professoriate, NGOs and intermediaries, and other societal actors in order to forge such linkages and partnerships. No such detailed literature has emerged.

The main descriptor for linkages in the innovation literature is the concept of 'channels'. These conduits refer to the type of knowledge artefacts transferred from research universities to private firms – for example, joint academic papers, consultant research, building of physical facilities (R&D laboratories, incubators) as well as patents, training, meetings and conferences (Dutrénit et al. 2010). Research on these differing channels usually seeks to measure which routes benefit researchers and firms the most, across differing sectors. Some channels are unidirectional transfers from university to firm, but the new emphasis is to pursue bi- and multi-directional channels.

However, discussion of such channels provides no guidance on how they were established in the first instance. Faced with this problem in the context of a developing economy, Petersen and Kruss (2020) adapted various innovation concepts to create a model highlighting the organisational dynamics required by post-school organisations to stimulate these linkages. The main component of their model was to emphasise the dynamic interactive capabilities needed by university leadership to accomplish successful linkages and partnerships with industry. Petersen and Kruss define these capabilities as the 'flexibility to respond to environmental turbulence and non-routine changes in circumstances' (2020: 50). Various researchers (Leih & Teece 2016; Pavlou & El Sawy 2011; Petersen & Kruss 2020) argue that there are four dynamic interactive

capabilities that senior management and leadership staff at universities need to forge UILs. These are:

- *Sensing*: the ability to spot, interpret and pursue opportunities for the university in the wider economy and society;
- *Seizing*: acting on the 'sensing' insights by revamping existing operational capabilities with new knowledge;
- *Integrating*: embedding new knowledge within existing operational capabilities; and
- *Coordinating*: synchronising tasks, resources and activities (Leih & Teece 2016: 183; Pavlou & El Sawy 2011: 239; Petersen & Kruss 2020: 51).

These are the capabilities that principals, deputy-principals, heads of schools and the senior leadership and research professoriate at post-school organisations require to effectively perform the function of bridge builders with industry. The first capability (sensing) is critical to the launching of UIL initiatives. The latter three capabilities refer to system change required within the post-school organisations to equip them with greater flexibility to respond to dramatic changes in the external environment.

Beyond the work on these four dynamic interactive capabilities, an important second component of Petersen and Kruss's model is the internal and external mechanisms within post-school organisations that facilitate linkages with industry. Petersen et al. (2014) define the internal interface mechanisms as those structures and policies that incentivise research links with industry. These include: the controversial evaluation systems that rank universities hierarchically based upon their research reputations; research excellence grants that reward high achievers in research, including those who engage in joint research projects with industry partners; and dedicated internal structures that actively promote research linkages with industry. External interface mechanisms are essentially the channels discussed earlier, that include consultancy contracts, joint research, physical laboratories and incubators, graduate placement and cooperative learning programmes, training courses and staff exchanges across the industry-higher education divide.

Intermediaries are the third component of the model. Kruss and Gastrow (2016) argue that in the absence of linkages being initiated by firm owners or the strategic leadership of post-school organisations, one solution for building interface structures to facilitate agency and linkages with post-school organisations is through the involvement of intermediary actors. These intermediaries then become the direct contact point and channel for interaction. In their empirical work on UILs in the food industry, Kruss and Gastrow observe that intermediary actors such as agricultural extension officers were the main channels of interaction, supplying codified knowledge from the university and tacit knowledge from external partners, and often accessing missing yet complementary components, for example, legal advice.

The work of Petersen and Kruss alongside the political economy approach adopted in this book towards linkages – as outlined in Chapter Four – constitute the main theoretical tools used to discuss linkages in this book, particularly in Chapters Eight and Nine.

A THEORY OF COORDINATION

A fourth issue with the LIPS methodology which requires more theoretical attention is its focus on coordination – which is required between departments of state, and between state agencies (such as departments and quangos), firms and other non-market players in the wider local economy/ecosystem. This additional focus requires inputs from ‘innovation studies’, but also ‘public policy studies’. Within both these literatures, coordination is seen as a central requirement for creating all the linkages and interactions necessary for an effective LIPS. Beverland et al. (2015), writing from an ecosystem perspective, see the coordination role within ecosystems as linking all the pieces of an economy together. Coordination is achieved through the ability to link – ‘ideas to enterprise, small and large businesses to each other, education to jobs and entrepreneurship, along with encouraging cross-sectoral collaboration’ (Beverland et al. 2015: 143).

Coordination is an important pre-requisite for a capable state and its effective governance of the quasi-independent quangos it finances. Quango’s operating in LIPS or larger regional economies are potentially intermediaries if their governance mode is based on networking and interactions with lead actors – rather than the usual compliance-based bureaucracy that defines most state structures globally. This issue is central to this book – Chapter Eight examines some of these quango intermediaries, specifically the Furntech incubator funded by the Department of Trade and Industry (DTI), and the SETAs funded by the Department of Higher Education and Training (DHET).

How does the innovation literature define coordination and governance? Kemp et al. (2005: 17) argue that whereas the conventional view of ‘government’ is about formal, clearly identifiable and static entities, ‘governance’ highlights the increasingly important role of formal and informal arrangements in the wider management of societal issues:

Governance, understood as a mode of social coordination, is different from *governing*; which is an act, a purposeful effort to steer, guide, control and manage (sectors or facets of) society. Governance is how one gets to act, through what types of interactions (deliberation, negotiation, self-regulation or authoritative choice) and the extent to which actors adhere to collective decisions ... Governance structures organise negotiation processes, determine objectives, influence motivations, set standards, perform allocation functions, monitor compliance, impose penalties, initiate and/or reduce conflict, and resolve disputes among actors.

As such, governance in the LIPS is a collective management activity, involving multiple actors operating at multiple levels throughout society. These actors include government departments, quangos, NGOs, business associations and trade unions. All these actors hold some form of power acquired through the inter-dependencies and inter-relationships they share with each other – each actor is dependent upon the contributions of the others. Governance is about the roles performed by these differing actors, how the rules of the ‘game’ work and are adjudicated, and how changes in the overall system of innovation come into being (Boekholt 2004). The state is primarily responsible for coordinating and

incentivising all governance efforts that ensure these players, who operate at multiple levels, act coherently and effectively in the pursuit of societal goals.

The effective coordination of state innovation policies has become more difficult to achieve in recent times. Borrás (2008) draws attention to the significant widening and deepening of innovation activities in the past two decades. Confronted by a series of ‘wicked problems’ that are not readily resolved by mono-departmental action, many governments across the globe are turning to innovation policies to tackle these challenging issues. Such complex problems are not amenable to easy solutions – real progress is dependent upon long-term systemic change, not short-term fixes (Williams 2002). These whole-of-government problems require ‘substantially greater coordination efforts than do relatively tame problems that fall neatly into the domain of a single government organisation’ (Peters 2018: 2).

All these activities rely, in one way or another, on a continuing central and formal governance role in coordinating and initiating action, and in legitimising and entrenching decisions (Kemp et al. 2005). It is the continuing role of the state (in partnership with the leading actors within both the private sector and civil society) to ensure the overall coherence, effectiveness and alignment of all its key policies operating at multiple levels across society. This state task is usually referred to as ‘coordination’. The significance of coordination within the effective implementation of innovation policies is appropriately summed up by Edler and Kuhlmann (2008: 266) who assert that ‘the governance of modern innovation systems is to a large extent characterised by the quality of coordination among actors and their decision making’.

The problems that coordination seeks to address

Coordination also involves preventing the emergence of negative governance dynamics. Braun (2008) maintains that coordination is aimed at averting several problems that would arise in a non-coordinated environment. These coordinated actions include:

- Avoidance, or at least minimisation, of duplication, overlap and contradiction;
- Avoidance of policy inconsistencies;
- Minimisation of conflict, both bureaucratic and political;
- Quest for coherence and cohesion and an agreed ordering of priorities; and the
- Promotion of a comprehensive or ‘whole of government’ perspective against the constant advocacy of narrow, particularistic or sectoral perspectives (Braun 2008: 230).

Williams (2002) – writing within the school of ‘public policy studies’ – argues that the need to manage all of these coordination actions within national or local innovation systems poses serious difficulties for the traditional conceptualisation of government. Such a multi-faceted task needs to move from a ‘pre-occupation with intra-organisational imperatives to a commitment to the building of inter-organisational capacity’ Williams (2002: 105). This change requires capabilities that emphasise relationships, interconnections,

interdependencies and holistic thinking. Williams (2002: 105) maintains that these competences contrast sharply with the 'prevailing discourse of classical organisations that is underpinned by notions of rationality, linear thinking, task differentiation and functionalism'. Traditional government departments are based upon hierarchical structures and accumulated 'wisdom' that is often resistant to change from outside. Departments often pursue agendas that are permissible in terms of their legal jurisdictions and, although they satisfy departmental interests, do not benefit government as a whole, leading to policy gaps, duplication and contradiction (Kavanagh & Richards 2001; Peters 1998). Administrative 'silos' are the unfortunate result of these traditional governmental characteristics.

Barriers to coordination in developing economies

Coordination is a challenge for the developed economies of the northern hemisphere, but it becomes a major challenge for developing economies who have weaker governance capabilities. Szogs et al. (2009) note that in most developing economies, the various sub-systems of the innovation system often operate in isolation to anything resembling an integrated system of organisations as described by the innovation literature. Similarly, they lack the relational dynamics between actors and require intermediation to overcome these gaps. Watkins et al. (2015) also criticise the dominant focus in the innovation literature on developed economies, their advanced technology-based manufacturing sectors (such as automobiles and computer electronics) as well as their high-tech industries (ICT and biotech). This bias in innovation research misses the importance of more slowly developing, less technology-driven industries (e.g., agriculture and craft industries). Such a bias hinders the application of the innovation concept as an all-inclusive development tool (Ramirez et al. 2009; Watkins et al. 2015).

To accommodate these differences, Chaminade and Padilla-Pérez (2014: 10) define three ideal-types of innovation systems, each with varying coordination capabilities:

1. Emergent innovation systems, characterised by low levels of technological capabilities;
2. Fragmented or dual innovation systems, characterised by medium levels of technological capabilities and some pockets of innovation; and
3. Mature innovation systems, portraying high levels of technological capabilities and competitiveness at the international level.

Mature innovation systems are those that exist in the advanced economies of Europe, America and East Asia. The national innovation systems of these countries are characterised by stability, strong interactional dynamics between key actors, well developed regulatory institutions, and strong science and technology capabilities within university and research institutions as well as in the private sector. The main challenge for these countries is remaining at the technological frontier, requiring them to continuously renew their competitiveness. In sharp contrast, emergent systems are those in the early stages

of development, with limited technological capabilities, weak linkages to other actors and organisations in the national innovation system, large informal economies, insufficient economic infrastructure and inadequate human resources. Most technologies in use in developing countries are imported or are introduced by multinational corporations in hierarchical relationships that do not prioritise the development of local supplier capabilities (Chaminade & Padilla-Pérez 2014).

Fragmented or dual systems such as those operating within South Africa are characterised by two innovation spheres, the one filled with pockets of dynamism alongside industries and regions with very low technological capabilities (Chaminade & Padilla-Pérez 2014; Phiri et al. 2016). These pockets of dynamism possess a critical mass of qualified engineers and scientists, produced by world-class universities and employed by indigenous multinational firms. In contrast, the under-developed components of the national economy are characterised by high levels of informality, unemployment and inequality. Soft skills such as leadership, management and problem-solving are in short supply in both the public and the private sector. Linkages between key innovation actors are weakly evolved, fragmented or non-existent, particularly linkages between the pockets of dynamism and the under-developed regions (Chaminade & Padilla-Pérez 2014; Kraemer-Mbula & Konte 2016). It is this dualism that complicates coordination processes in developing countries such as South Africa. It is an issue which LIPS researchers have focused on in their research on various LIPS case studies in Brazil and across the developing world.

CONCLUSION: INTERMEDIATION AS SOLUTION

Resolving all of these linkage problems will be a major challenge in future. In many countries across the globe – including South Africa – the conditions that are required for the innovation system and LIPS to operate effectively are simply not present. The extant literature on innovation and LIPS suggests that in these contexts it is intermediaries that are needed to promote actor interactions, create trust, assist in crossing boundaries, forming linkages and facilitating access to external knowledge and resources. In many industry contexts, elements such as trust, cooperation and interaction are lacking, particularly amongst small firms that are highly distrustful of their competitors. Hence, at the heart of the innovation enterprise – the need for cooperation and interaction between diverse actors and knowledge sources – intermediaries are needed (Iturrioz et al. 2015; Moss et al. 2009; Stewart & Hyysalo 2008). The next chapter will examine a number of examples of successful intermediaries operating in multiple sectors across the globe.

CHAPTER THREE

A theory of intermediation

Academic writing on intermediaries is extensive in a range of social science fields, including economic sociology, social capital theory, labour market studies and the economics of innovation. One of the earliest foci on intermediation was economic sociologist Granovetter's (1973) work on two types of social capital: 'bonding' social capital that helps members bond internally within their own group; and 'bridging' social capital that provides cross-cutting links to members of other social groups. 'Bonding' social capital is constructed from the strong relationships, norms and networks that define family, community and working life. It is a resource to be drawn upon when needed, for example, when searching for a job. It is the relationship between 'bonding' within dense discrete networks and the process of 'bridging' with others in distant networks that is of most interest from an intermediation perspective. Narayan notes that challenges arise when people move from exclusive loyalty to primary social groups (bonding) to networks of secondary associations (bridging) whose most important characteristic is that they 'bring together people who in some ways are different from the self' (Narayan 1999: 12). Narayan argues that 'when power between groups is asymmetrically distributed, it is these cross-cutting ties, the linkages between social groups, that become critical to both economic opportunity and social cohesion' (1999: 13).

Burt (2003) has made important contributions to overcoming the problems of bridging through his concepts of 'networks', 'structural holes' and 'brokerage'. He argues that structural holes occur when key actors in the policy process do not interact outside of their own group or professional community, resulting in a constriction of knowledge flow crucial to the policy process. Alternatively, actors who are well connected or forge strong ties with groups outside of their own communities, in locales such as firms, sectors, regions, colleges or universities, play a crucial intermediary role in overcoming structural holes in the process of knowledge circulation (Burt 2003). These intermediaries obtain what Culpepper (2002) has termed 'relational information' – again a crucial input in policy. Burt (2003: 5) suggests that intermediaries are critical to learning and creativity. People whose networks span structural holes have 'early access to diverse, often contradictory information and interpretations that give them a competitive advantage in delivering good ideas' and being able to provide solutions to problems bedevilling the interfaces between groups.

With the rise of innovation theory, the intermediation issues raised in these early social capital writings became central questions within innovation research. Forming networks to access external knowledge and overcoming structural holes by crossing boundaries/interfaces are key to the innovation process as explained in Chapter 2. Indeed, this chapter will argue that intermediation is central to resolving the complexities faced by actors operating across multiple sites in pursuit of innovation. This position is not always reflected convincingly in the extant intermediation literature. In many instances, academic articles on innovation do not mention intermediaries at all – for example, the recent handbooks on innovation by Nelson et al. (2018) and Chaminade et al. (2018). Lundvall, a founding scholar of the innovation school, mentions intermediation only once in a recent book (Lundvall 2016). Additionally, other texts reduce the role of intermediaries to resolving ‘gaps’ in the relational, institutional and infrastructural requirements for innovation, thereby assigning intermediation a peripheral and temporary role. Intermediation needs to be accorded a more central and semi-permanent role in the overall innovation process than has been the case so far.

Much of the intermediation research conducted within the innovation school focuses on taxonomies of intermediaries based upon a range of functions. This practice has led to a very fragmented literature, with multiple definitions of intermediation alongside extensive empirical work, but with little cumulative development of theory occurring. There are many reasons for this situation. First, most recent work appears aimed at developing basic taxonomies of the types, roles and functions of intermediaries – and much of the input here is practical and derived from empirical case studies. Kivimaa et al. (2019: 1063) are critical of the extant intermediation research literature:

While some studies address specific types of intermediaries, the literature as a whole lacks clarity in how intermediation is defined, where it begins and ends, and where interaction in general becomes intermediation. As a result, intermediation covers a range from formal, self-recognised and defined forms, to informal and emergent (or even mostly hidden) forms of intermediation.

Second, other theoretical frameworks such as labour market studies have also made significant contributions, but there appears to be little overlap and theoretical cross-pollination. This chapter chooses not to follow the ‘taxonomy’ route, although it will present one of the more influential classifications prepared by Howells in 2006. In an original contribution to the innovation literature, this chapter focuses on the ‘scope of work’ undertaken by intermediation agencies across a continuum of tasks – from basic to mid-range to advanced. Some examples of intermediation are straight forward two-way dyadic or three-way triadic relationships between an actor(s) and an intermediary. Others are classic ‘triple-helix’ partnerships between government, industry and higher education. But many contexts require more complex and systemic interventions. These transitions entail multiple points of intermediation over a medium to long period of time. Such a continuum of work undertaken by intermediation suggests its centrality in resolving both

short-term and practical problems as well as highly complex and long-term problems that constrain the innovation process.

The structure of this chapter is as follows: it first provides a brief historical overview of the evolution of intermediation from simple dyadic and triadic functions to more complex and long-term tasks. Second, it offers a 'scope of work' approach to reviewing intermediation, providing three international case studies that illustrate the continuum of work – from basic to advanced – that is performed by intermediation. Third, the analysis also highlights the limits of intermediation – it is not a magic wand for innovation in every economic context. Finally the chapter concludes by arguing the centrality and permanence of intermediation in the innovation process.

THE HISTORICAL EVOLUTION OF THE ROLE OF INTERMEDIARIES

Watkins et al. (2015) provide a historically informed argument as to why intermediaries only became the object of research attention in the later years of development of the extant literature on innovation. They outline the well documented shift of innovation studies from its initial focus on the macro structures of the national system (that generated criticisms of an overly static picture of the innovation process) and its pre-occupation with the triadic interactions between industry, the state and higher education, to the growth of sub-fields within the innovation school. These include new research fields focusing on technology innovation systems, regional innovation systems and sectoral innovation systems – that all emphasised the micro-level interactions between firms and multiple other actors which collectively constituted the dynamic innovation system on the ground. One of the critical additional actors recognised in this collective were intermediaries.

Another argument put forward in this historical review of the literature is that once the focus shifted from the institutionally dense national innovation systems of the developed economies of the west to the organisationally sparse context of developing economies, the role of other actors, such as intermediaries, became critical in linking actors and organisations who historically had been disconnected (Watkins et al. 2015). The shift in focus to developing countries was important in recognising the critical role of intermediaries.

In many countries across the globe, particularly less developed economies, the conditions that are required for the national innovation system to operate effectively are simply not present. Reliance on building upon learned routines (the main route to incremental innovation) requires that firms interact and cooperate thereby ensuring that their collective combination of production practices and knowledge assets can be shared and joined in new combinations to produce incrementally improved products and processes. In many industry contexts, however, such cooperative conditions are simply not present. The free-market mechanism will not resolve this problem. In most instances, it is these intermediaries that are expected to perform the role of bridge builder, bringing together economic communities who would not otherwise cooperate (Iturrioz et al. 2015; Moss et al. 2009; Stewart & Hyysalo 2008).

Howells (2006) adopts a different position to that of Watkins et al. (2015) regarding the historical evolution of intermediaries. He is critical of the dyadic view of the role of intermediaries historically, that suggested that it entailed mainly two functions: (1) information scanning and (2) improved communications between isolated actors. In a further criticism of the traditional view of intermediation in technology transfer, Howells claims that intermediaries in the early period of their history focused on providing existing knowledge of a technology to a new user, but without focusing on the interactions between the actors involved (Howells 2006).

In a detailed empirical review of research on intermediaries, Howells concluded that intermediaries were performing considerably more functions than originally conceived. In his view, they covered ten functions and included unrecognised or undervalued roles including:

1. Foresight and diagnostics;
2. Scanning and information processing;
3. Knowledge processing and recombination;
4. Gatekeeping and brokering;
5. Testing and validation;
6. Accreditation;
7. Validation and regulation;
8. Protecting the results;
9. Commercialisation; and
10. Evaluation of outcomes (Howells 2006: 720).

Howells' list was much more ambitious than the prevailing taxonomies of the traditional intermediary. His taxonomy took the task of meeting industry standards and quality requirements seriously, as well as intellectual property rights. In addition, his view of knowledge work was not the linear transfer of existing knowledge to new users but entailed a much more complex description of the process that entailed knowledge processing, generation and recombination. The recombinatorial function is highly significant because it involves combining existing firm knowledge with other knowledges either from across the discrete divisions of the firm or outside the firm to create new combinations that provide the basis for incremental improvements in product or process. This practice is a complex task beyond the scope of most individual firms and requires the knowledge translation efforts of experts located in intermediaries (Howells 2006).

In making similar arguments for many of the other functions, Howells concluded that many intermediaries had moved beyond the simplicity of dyadic or triadic interactions, and were engaged in much more complex relationships, such as 'many-to-one-to-one', 'one-to-one-to-many', 'many-to-one-to-many', or even 'many-to-many-to-many' collaborations, forming both vertical and horizontal associations within increasingly distributed innovation networks (Howells 2006: 724).

A CONTINUUM OF INTERMEDIATION INTERVENTIONS

This section illustrates the expansiveness of intermediation work. The three case studies² of intermediation selected cover a wide spectrum of innovation-related activity comprising both mature and developing economies. These practices include:

- Indian garment sourcing agents who arbitrate between western buyers and Indian garment manufacturers to improve social relations and quality of product;
- Intermediaries building the technological capabilities of firms in a Brazilian furniture LIPS; and
- Systemic intermediaries.

These three case studies are not representative of the entire ‘scope of work’ undertaken by intermediaries in all innovation processes. Such a literature review would be vast and beyond the scope of this book. However, the selected case studies aim to illustrate the continuum of work from simple dyadic and triadic interventions to far more complex and long-term intermediation, especially in whole system contexts. The scope of work can be simple and dyadic in structure, but in other contexts it can be expansive, complex and, in many instances, long term.

Basic intermediation

A simple dyadic role: Indian garment buyers in GVCs

A good example of a straightforward triadic bridge-building role is that presented by Soundararajan et al. (2018) who studied the intermediation role of Indian garment sourcing agents in bridging the boundaries between western buyers and Indian garment suppliers, to facilitate development along the GVC. Suppliers are under continuous scrutiny by buyers to keep costs down and to meet stringent quality standards. However, the governance of these issues by the lead firms in the GVC is complicated by the linguistic, cultural and operational barriers that make conducting business in foreign contexts difficult (Soundararajan et al. 2018). These boundaries must be overcome to facilitate effective interaction between buyers and suppliers. In this case study, lead firms have overcome the boundaries by using an intermediary actor, namely sourcing agents, who are in a better position than the lead firms to understand the local embedded conditions of the suppliers. Addressing these boundaries requires tacit knowledge, face-to-face interaction and communication skills (Soundararajan et al. 2018). For example, the shortage of channels for communication – due to the cultural and linguistic differences between actors – ‘restricts the free flow of knowledge required to develop a set of proper workplace practices’ (Soundararajan et al. 2018: 2). Sourcing agents, who are local actors with industry experience and English proficiency:

² The description here of case studies of global intermediaries has been reduced from eight to three due to space and excess detail. However, readers who are keen to see the original eight case studies can find them in Kraak (2023).

work to reduce the communication gaps by engaging in frequent conversations with both parties, becoming familiar with their needs and expectations, and facilitating uniform knowledge transfer between them. (Soundararajan et al. 2018: 21)

Additionally, there are often problems with conflict between non-accommodative buyers and suppliers. Under such circumstances, sourcing agents emphasise the necessity of adherence to what constitutes appropriate actions for a sustained business relationship (Soundararajan et al. 2018).

Middle-range intermediation

Building local innovation systems in furniture manufacturing

The LIPS literature has produced some research on the role of intermediaries. The next section will discuss a second case study of intermediation work in a Brazilian furniture LIPS. The case study endorses the critique raised by the LIPS research community of the cluster and GVC literatures. This appraisal, as indicated earlier, argues that the latter literature privileges insertion into global value chains over the deepening of firm capabilities in local innovation systems.

The furniture industry in Linhares

Peterson (2015), author of the Brazilian furniture industry case study, notes that one of the defining characteristics of the structure of a LIPS that:

can be generalised across all cases is the presence of what he terms a “dynamic nucleus” of the region’s leading firms that actively engage with each other along with public sector agents in the coordination of actions and policies to support the cluster. Around this dynamic nucleus, there is a periphery of less dynamic firms, that are generally disinterested, unaware, or unable to participate in LIPS activities. (Peterson 2015: 3)

For Peterson, the essence of the LIPS model is ‘to encourage collaborative action among local entrepreneurs and the public sector to improve the productive capabilities of local firms’ (2015: 3). In contrast, many cluster and GVC approaches see collective action as operating purely to improve access to markets, and these interventions merely target particular niche areas in the primary sector. For Peterson, this is a narrow route, not requiring much coordination across a multiplicity of actors – as is the case in LIPS approaches. The more expansive LIPS route is a:

virtuous approach to industrial policy, where competitiveness is undertaken not through tax subsidies or the debasement of labour through lower wages, but through the promotion of the endogenous capacity for innovation within regions. (Peterson 2015: 13)

Linhares is a small town in the state of Espírito Santo – a region with natural and commercial forests – where a furniture industry emerged in the 1960s as global markets for coffee, the region's main agricultural crop, went into a prolonged crisis. Another triggering factor in the emergence of the furniture industry in this region was the arrival of several Italian immigrants during this period with cabinet making and furniture production experience. Due to the presence of native hardwoods, the region also had many sawmills, some of which shifted to the production of low-quality furniture timbers. The leading Italian immigrant, Luiz Rigoni, started what became the major furniture firm in the region in 1979 (called Movelar). The company was instrumental in developing the sector over the next three decades before it was plagued with financial problems and closed during the global financial crisis of 2008. In this thirty-year history, Movelar played a key role in diffusing knowledge about the industry and its market requirements to local firms. As the company grew it developed a solid network of suppliers and subcontractors, many of whom were started by former Movelar employees who ventured into business for themselves – a practice that helped to spread knowledge about the industry to firms throughout the region (Peterson 2015).

The bankruptcy of Movelar in 2008 sent a shock wave throughout the furniture industry. There were few other large firms, with the majority being small suppliers and subcontractors. This vacuum forced small firms to restructure cluster relations dramatically away from the traditional 'hub and spokes' model to a more relational cluster based upon cooperation and collaboration between the collective of small firms. Part of this transition was well served by many retrenched skilled workers seeking employment in new furniture firms that immediately began to plug the gap left behind after Movelar's closure. This recovery was a remarkable achievement – small firms attaining economies of scale through collective action and deriving earnings that exceeded pre-2008 levels. The prime factor behind this development has been a form of partnership called a '*dobradinha*' in which, through specialisation in one specific piece of furniture, partner firms can supply an entire matching collection for bedrooms, living rooms or other spaces. These partner relationships are often informal, with larger firms becoming the parent company. Other smaller firms spread across the region would then sub-contract to that parent company (Peterson 2015).

Other developments that consolidated the collective action taken in Linhares included joint sales, logistics and access to timber supplies. Most impressively, however, the cluster also persuaded internal firm investors to buy out an old box factory and repurpose it as a 'state-of-the-art' packaging company for the cluster. Lessons were learnt from the success of this investment, and an intermediary, the trade association Sindimol, led the cluster in purchasing a medium density fibreboard factory – a critical input in the production of low-cost mass-produced furniture (Peterson 2015). Funding for the fibreboard factory came from the Brazilian National Development Bank, BNDES. Sindimol also negotiated on behalf of the small firms for financial credit from SEBRAE, a national-level intermediary focused on supporting small businesses in Brazil.

In its role as the trade association for the industry in the region, Sindimol also represents local firms in negotiations with employers and the state on matters ranging

from worker safety, environmental licensing and land use. The intermediary is led by the interests of the local firms who have representation on its board. Peterson argues that Sindimol 'operates as a venue for creating social capital among local entrepreneurs in the sector' (Peterson 2015: 77). This intermediary assists these entrepreneurs in obtaining business services from other societal actors such as private networks and government agencies. Peterson defines this 'meta-governance' as the 'ability to steer multiple agencies and actors towards common goals' (Peterson 2015: 34). Usually, this action is a function taken on by national government departments, but in Linhares, the intermediary plays this role (Peterson 2015: 74–75). Overall, Sindimol effectively led the governance network for the furniture cluster at Linhares. This adoption of a broader approach to firm insertion into GVCs through developing local firm capabilities has been very effective:

The implementation of such an approach required horizontal coordination between a multitude of local actors (public and private) as well as the ability to engage vertically with actors and resources at higher scales. The ability to establish these governance structures along the local production chain and more broadly across the territory play a significant role in allowing local firms to compete with much larger and better situated furniture clusters from other regions in Brazil, as well as foreign producers. Within a few decades, the region has been able to shift from coffee production, to made-to-order furniture production, to mass production, and it is currently attempting to shift towards modular furniture (mass customisation). (Peterson 2015: 78)

Advanced intermediation

The case study described above occupies a middle-range position on the 'scope of work' continuum of intermediation activity. The work of intermediaries in this furniture LIPS context is significantly more complex than the basic activities described in the first case study of Indian garment buyers. Complexity arises especially in the coordination of relations between actors located at the regional (meso), micro and national levels, and in the attempts to revive legacy industries and declining city-regions. The need to link multiple actors across the innovation system also necessitates a more complex action.

The discussion now shifts to consider a case study in advanced intermediation work. The most significant examples of this work are the complex and long-term transitions required in the shift to a green economy, and the need for an 'ecology of intermediaries' operating at several societal levels.

The need for systemic intermediaries

Writing on sustainability transitions, Van Lente et al. (2003) note how dauntingly complex and long term such transitions are. These scholars propose the need for a 'systemic intermediary' that is vastly different from the traditional idea of an intermediary mediating a single issue (such as technology transfer or business management support). In this new conception, systemic intermediation is necessary because:

As we are dealing with multiple domains and simultaneous socio-economic changes, system approaches appear to be promising here, since they analyse the interaction between the parties involved and the resulting collective performance. (Van Lente et al. 2003: 2)

These writers make a distinction between the hard and soft roles of intermediaries, with 'soft' knowledge such as intensive business services located in consultancy firms and 'hard' research and technology organisations (concerned with the transfer of new technological knowledge from the national science base to firms) being the most common. However, a third category of quasi-government bodies and industry associations also emerged to mediate various issues of concern to their members (Van Lente et al. 2003).

According to Van Lente et al. (2003), with the dramatic advances made with technology and innovation since the 1980s (the advance of ICTs, the increasing importance of user feedback, the growing number of innovation actors, and the demise of the linear model of innovation) the task of intermediation has taken on a much more complex and systemic role, including supporting the following five core innovation systems functions:

1. *The management of interfaces* – aimed at transferring knowledge, building bridges and stimulating debate and communication across multiple actors and sub-components of the national innovation system;
2. *Building and organising innovation systems* – entailing coping with the processes of construction and deconstruction (creative destruction), initiating and organising discourse, promoting alignment and consensus, managing complex systems, preventing lock-in and identifying and facilitating first movers, and more generally, ensuring that all actors are involved;
3. *Providing a platform for learning* – especially learning by doing, using and interacting;
4. *Providing an infrastructure for strategic intelligence* – offering clients information tailored to their specific needs; and
5. *Stimulating demand articulation, strategy and vision development* – identifying locales for possible applications of new innovations and building a vision around their development that mobilises all relevant actors (Van Lente et al. 2003: 8-9).

The Van Lente et al. (2003) argument has been very influential after its release in 2003 in shaping both the systemic functions of intermediaries, but also indicating that several intermediaries might be needed to perform these multiple tasks. Vihemäki et al. (2020), writing within the socio-technical systems sub-school of innovation studies, highlight the need for multiple intermediaries in their case study of a sustainability transition to more wooden multi-storey homes for people in Finland. This transition process requires a move away from traditional construction methods towards a greater use of wooden materials for multi-storey buildings – because traditional buildings are responsible for 39% of the global carbon emissions whereas, in sharp contrast, wood is an absorber of carbon (Vihemäki et al. 2020: 434). However, the writers warn that such sustainability transitions are difficult

and long term. They require the ‘emergence of novel products, services, business models, organisations, regulations, norms and user practices, that can either complement or substitute for existing ones’. They may also ‘involve contestations between emerging niche-innovations and existing socio-technical systems and regimes’. All of this change may ‘require decades to become mainstream due to barriers such as path dependencies and resistance from incumbents’ (Vihemäki et al. 2020: 433). In their view, it is only with the aid of intermediaries that such complex transitions can be sped up. Indeed, they view intermediaries as essential elements of socio-technical regimes given their roles both in supporting niche creation and the destabilisation of regimes (Vihemäki et al. 2020).

Vihemäki et al. (2020: 436) propose the utilisation of an ‘ecology of intermediaries’ comprising five differing types. Several intermediaries are needed at differing levels and for differing tasks. They emphasise the important interface work between niche and regime levels – how niches can influence policy developments at the regime level. Targeted lobbying by intermediaries that connects the performance of a niche with the wider policy agendas of the regime is seen as a key issue that informs how niche innovations succeed (Vihemäki et al. 2020).

For example, the National Wood Building Programme in Finland is a regime-based intermediary. It was mandated by the government to promote the transition of the construction and forest sector in line with a bio-economy agenda. Yet, it also operated in the interface of the wooden multi-storey construction niche and the construction regime. It was engaged in several activities, including sharing of information, facilitating and supporting the operation of wood construction related networks, and policy advocacy (Vihemäki et al. 2020). The fact that this programme was a government-linked intermediary located in the Ministry of Energy in Finland meant that the intermediary was viewed as a critical focal point to advance the wooden multi-storey construction niche.

This third case study – on systemic intermediaries – illustrates the massive task required to create new formalised academic knowledge, and to complete the long journey entailed in sustainability transitions. Both contexts require intermediaries with advanced organisational competencies.

It is clear from the three case studies reviewed here that the work of intermediaries in the innovation process is characterised by high levels of variety and complexity, displaying a wide array of functions that differ in each case and context. This variety of work is spread along a continuum – from basic to advanced, and from a need for temporary interventions to a near-permanent role in long-term transitions. Intermediation is not a peripheral or occasional role – it is a necessary and essential step in the innovation process.

Table 3.1 captures the idea of the continuum across the three case studies and summarises the areas of intermediation needed to unlock innovation activity. These scope of work categories will be explored further in the case studies of the Southern Cape furniture industry in Chapters Seven, Eight and Nine.

Table 3.1: A continuum of intermediaries based on the scope and complexity of intermediation work

Case no.	Title of project	Barriers to innovation	Enablers of innovation achieved through intermediation
BASIC INTERMEDIATION			
1	Indian garment sourcing agents	Communication/language problems between Indian SMMEs and Western buyers.	The Indian sourcing agents act as interpretive brokers between Indian SMMEs and Western buyers and resolve communication difficulties.
MIDDLE-RANGE INTERMEDIATION			
2	Local innovation system in furniture cluster in Espirito Santo	Local innovation systems weak. Power asymmetries between large firms and local SMMEs. Entry barriers face SMMEs wishing to participate in export markets.	Getting large firms to participate in the building of local capabilities Localisation of production, with local SMMEs contributing to export markets Initiating joint actions around shared logistics, supplies and training Government investment funding to build a packaging and fibreboard factory for the furniture hub to resolve 'gaps' on the supply side.
ADVANCED INTERMEDIATION			
3	Systemic intermediaries and an ecology of intermediaries in sustainability transitions to a green economy	Sustainability transitions are highly complex and long-term transitions that require substantial changes to socio-technical systems built around the dominant technologies in use – for example, the petrol combustion engine. The transition to the electric car is underway, but it requires long term comprehensive change in the system that governs the current incumbent technology – petrol engines.	The task of system change is so vast and complex that it requires a systemic intermediary that can work both at the technological experimentation or niche level (niches act as incubation rooms for new ideas and alternative practices), but also at the regime level comprised of all the institutional rules of the game that provide strong social structuration and assist in the coordination of economic activity. These emerging experiments require protection and nurturing in their infant phase. Weaknesses in the incumbent technologies need to be acted upon to promote the new technologies – they are 'windows of opportunity' for new niche development. Often a single systemic intermediary is insufficient to deal with the wide scope of change required, and multiple intermediaries may be needed.

THE LIMITS OF INTERMEDIATION

Intermediaries are not magic wands that automatically perform all the innovation functions outlined in the above analysis. There are limits to their impact that need to be considered. In some instances, they fail to perform the bridging function adequately, or outgrow their relevance, or become locked into outdated approaches, or do not possess the necessary expertise. Intermediation is complex, multi-faceted and messy work, and many intermediaries do not always succeed across all the critical dimensions. However, the greatest limit to their effectiveness is the absence of sufficient long-term funding.

This has the effect of imposing short-term horizons on attaining critical intermediation goals – which in many cases are necessarily long term (Klerkx & Leeuwis 2008; Klerkx & Leeuwis 2009).

A second limitation that can arise during intermediation, particularly in government ‘top-down’ intermediary agencies, is insufficient expertise of the sector, and a consequent loss in legitimacy with industry-based actors. Crouch et al. (1999) argue that these intermediary agencies need to possess an authority based upon ‘constantly updated knowledge so that firm competencies can be intensified and relevant government departments and research organisations can be kept in touch with what is required’ of them (Crouch et al. 1999: 232). Culpepper (2003) stresses that only the expertise possessed by the intermediary enables forms of deliberative association that succeed in moving private actors beyond points they would not normally traverse on their own. These expert deliberations mediated by intermediaries provide conduits to privately held knowledge and information not usually volunteered by private actors in competitive market relations. However, gaining access through processes of expert interaction and negotiation with a range of actors is precisely what creates the basis for the construction of a range of highly valued collective production goods – a successful experiment, the circulation of new knowledge to a wider range of actors, or a joint innovation project. In many instances, the top-down approaches of government intermediaries fail to create the necessary trust and buy-in from firm-level actors.

A third possible limitation mentioned in the reviewed literature is failure to remain loyal to the expectation of neutrality or impartiality in the intermediary’s performance as arbiter. This supposed drawback is a misnomer, because intermediations in the cases described in this chapter are highly normative social change processes, with most actors committed to the eventual outcomes of the work done – sustainability transitions or getting large firms to build local capabilities. The problem arises, however, in situations within which the intermediary rallies certain actors behind the necessary changes, but that simultaneously alienates other actors who form part of the incumbent system and who resist the direction of changes proposed. This condition puts the intermediary at the centre of conflict around social change that could influence its effectiveness (Klerkx & Leeuwis 2009; Koutsouris 2012).

A fourth potential weakness occurs when intermediaries need to make trade-offs between activities in defining a realistic scope of work – actions that may limit their effectiveness within the innovation system if their chosen scope is too narrow. A potential first trade-off is related to the broadness of services versus the customisation of services. A narrow customised function would be very specific to the needs of a given group of firms. In performing a role that targets the system level, intermediaries may find they do not possess all the resources needed to cover the full spectrum of system issues (Mignon & Kanda 2018: 13). The employment of multiple intermediaries operating across the system may solve this problem, however, it may also create new ones, for example, through overlapping functions across fragmented intermediaries (Klerkx & Leeuwis 2009).

CONCLUSION

Notwithstanding these weaknesses and limitations, intermediation remains one of the only mechanisms that can resolve the barriers to the innovation process – especially within the developing world – as discussed in this chapter. If left to market processes and market actors such as firms, little progress will be made in resolving many of these problems – including poor interactional dynamics, adversarial workplaces devoid of trust and cooperation, weak organisational capabilities within the national innovation system, and the complexities of knowledge recombination and aggregation. Intermediation assists in alleviating these messy, complex problems that often take several decades to resolve. The process of effective intermediation, therefore, deserves greater coverage in the economic debates about future growth paths. Unfortunately, neo-classical economics continues to dominate such debates. Greater efforts will be needed to promote the significance of both innovation and intermediation for future prosperity both locally and globally.

CHAPTER FOUR

Racial capitalism and the rise and fall of segregated linkages between the education system and economy

This chapter provides contextual background to an examination of linkage formation in South Africa. As Chapter One emphasised, linkage formation is a key collective factor input in capitalist production. Collective goods such as structured education linkages are necessary because the market mechanism is unable to provide all the conditions necessary for economic success – especially those factors of production which cannot be acquired through private property rights. It is primarily the state (and secondarily civil society entities such as NGOs), and not the market, which must encourage and facilitate the development of these collective goods – such as social stability, new forms of economic cooperation and education-economy linkage formation (Dertouzos et al. 1989; Streeck 1992). If the state fails in this task, as it does in many developing countries, then it falls to intermediaries to assist in acquiring these collective production goods, including rebuilding linkages.

To examine linkage formation in South Africa historically, it is necessary to first have a clear understanding of the evolution of racial capitalism. This is necessary to fully understand the impact this economic trajectory has had on linkage formation. More specifically, the chapter seeks to explain how South Africa evolved from having a highly structured set of linkages between the education and training system and the Apartheid economy, to the current situation where few structured linkages exist. To do this effectively requires two things: first, an outline of the linkages being investigated, how they came to be structured, and why many of them dissolved over time. Second, the analysis requires an understanding of the nature of Apartheid capitalism, its demise, and the transition to post-Apartheid capitalism. This chapter's discussion of the transition from the old order to the new is not comprehensive. Rather, its main purpose is to provide a schematic outline of the key structural and social processes which underpinned linkage formation in both historical periods.

Chapter Two outlined the theoretical framework used to analyse linkages in the innovation system. It noted that the innovation literature did not provide sufficient explanations of how linkages are built between the post-school sector and the economy. Nor does the extant literature provide a comprehensive list of the types of linkages that usually evolve under the different phases of capitalism. The one instance where linkages are central in the innovation literature is the research work done on triple helix partnerships and other formal university–industry linkages (UILs). This work however is limited in range. It focuses only on radical innovation, research universities and the development of high-end technologies, excluding incremental innovation and the remaining components of the post-school sector. This book seeks to fill this gap.

UTILISING TWO CONCEPTUAL DEVICES

One way of overcoming the ‘thinness’ of the extant literature on linkage formation is through the development and use of the following two conceptual devices. The first is a historical template which condenses the economic history of South African capitalism into thirteen ‘shaping’ moments. These moments are understood to have given birth to the major enabling and constraining factors which have shaped the structure of South African capitalism over time. Each of these thirteen moments are associated with powerful structural forces as well as political and social processes initiated by the state and the ruling elites which gave shape to the racially stratified form of capitalism which emerged in South Africa. Within these thirteen moments, the analysis also seeks to outline when important linkages between the education and training system and the national economy were forged (or weakened).

The second conceptual device developed for this discussion is the construction of a taxonomy of education-economy linkages based on the evidence emerging from the Southern Cape fieldwork undertaken for this book. This evidence was suggestive of some linkage activity in the region (past and present). The taxonomy also drew from a detailed reading of the economic history literature outlining the evolution of South Africa’s racial form of capitalism. Some of this literature hinted at the formation of education-economy linkages that were considered crucial to the further development of the South African economy. Lastly, the taxonomy has also extracted what little there is in the extant literature on innovation which refers to differing types of linkage formation.

KEY HISTORICAL MOMENTS IN THE STRUCTURATION OF SOUTH AFRICAN CAPITALISM

Table 4.1 presents the first conceptual template discussed above, which outlines the thirteen important historical moments which assisted in shaping a racially exclusive form of capitalism in South Africa – as well as the not so successful attempts by the post-Apartheid government in eradicating all vestiges of racial capitalism.

Table 4.1: Enabling and constraining forces that have shaped the evolution of capitalism during both the Apartheid and post-Apartheid eras

Key historical moments and their associated political and social processes	
THE APARTHEID ERA	
Enabling forces	The colonial formation of racially stratified social classes
	The emergence of a 'Minerals-Energy Complex' (MEC)
	The rise of Apartheid as a 'development state under white rule' (Freund 2013)
	The growth of a pervasive economic dualism across the entire country
Constraining forces	The emergence of a 'resource curse' and the failure of import-substituting industrialisation
	The advent of rapid African urbanisation in the 1970s and 1980s
	Widespread resistance to oppression in 1970s and 1980s
THE POST-APARTHEID ERA	
Enabling forces	The introduction of GEAR and macroeconomic stabilisation
	The introduction of several expansive social programmes and microeconomic reform initiatives
Constraining forces	Jobless growth
	Deindustrialisation
	Corruption and crony capitalism
	The implosion of party, state and critical economic infrastructure

A taxonomy of linkages

A second conceptual device developed and applied in this book is a taxonomy of education-economy linkages which have emerged during the long evolution of South Africa's racial capitalism. These examples emerged from the fieldwork undertaken for the book as well as those linkages that are recognised or suggested in the South African economic history and the global innovation literatures. This taxonomy of 14 linkages is the result of this process. The ordering of these linkages is based on a 'macro-meso-micro' classification system.

Table 4.2: A taxonomy of structures and political and social processes that generate linkages between the education and training system and the economy

Type of linkage	Description
MACRO LINKAGES	
1 Linkage processes between the sub-systems of the national innovation system	An effective innovation system requires strong linkages and governance orchestration between the different subcomponents of the system, for example, between the national economy, education and training system and the science system. In most developing economies, these linkages are weak and fragmented.
2 Linking actors together across the racially structured geospatial divisions of the South African landscape	Apartheid in its heyday imposed a racially skewed geospatial distribution of homes, schools and places of work. For whites this meant schools and places of work were very close to home. For blacks, these amenities were located very far from home, imposing high transport costs and long hours to get to and back from school and work. This immovable footprint of the Apartheid system still limits the extent to which actors can be socially and economically linked.

CHAPTER FOUR

RACIAL CAPITALISM AND THE RISE AND FALL OF SEGREGATED LINKAGES BETWEEN THE EDUCATION SYSTEM AND ECONOMY

3	State coordination and governance: Establishment of various national socio-economic advisory councils	Both the Apartheid regime and the democratic government of 1994 made use of various statutory national councils and commissions of inquiry to advise the cabinet on reforms that were necessary to improve the performance of the economy and society. This included a focus on more effective ties between the education system and economy. These national bodies have performed a critical role in providing government with the necessary inter-departmental and inter-sectoral coordination capabilities needed to resolve complex socio-economic problems such as labour market regulation and skill formation.
4	Using state-owned enterprises (SoEs) to upskill citizens	Many SoEs were developed by the Apartheid state from the 1920s (Iskor) to the 1960s (Armcor) with the specific purpose of making the country more economically self-sufficient, but also, to upskill and employ unskilled white workers migrating from poor rural areas in the 1920s onwards. These SoEs were extremely successful in achieving this goal. However, with the arrival of neoliberal policies in the mid-1980s, this function was ended as most SoEs were restructured to make them leaner and more profitable. In so doing, SoEs cut costs and ended their support for large-scale apprenticeships, internships and technical training by the mid-1990s. SoE training centres were closed or mothballed.
5	The bridge-building work of state quangos	These quangos were set up to rally private firms to support particular policy objectives to the benefit of various industries. However, most state quangos are not good at this type of brokerage and usually adopt a bureaucratically imposed form of co-option rather than intermediation. Independent quangos have a better record of success (see no. 11 below).
6	Formation of national industry associations	Industry associations exist in most sectors of the economy. Many function as intermediaries, representing the interests of the collective of firms in the sector when negotiating with government on sectoral problems such as value chain blockages, skilling and labour market issues.
7	Triple helix partnerships	Triple helix partnerships are the most advanced forms of knowledge sharing which occur between research universities, employers and the state. This cooperation between powerful actors in society has the potential to resolve some of its most wicked problems. A good example of this kind of partnership has been the historical role of the Geology and Engineering Departments at the University of Witwatersrand in supporting the technological development of mining in the region for more than a century.
MESO LINKAGES		
8	'Embeddedness' as a form of linkage for actors in specific geographic localities	Embeddedness arises when many firms agglomerate in a local economy, and over a long period of time, build a collective vision of the region as 'entrepreneurial' or 'prosperous', or 'a good place to live and work'. The region hosts all the production inputs required for an effective working and social life – including education and training organisations. This embeddedness is evidenced in the strong ties firms have with the region, providing members with a sense of 'belonging' and a basis for inter-firm networking.
9	Knowledge sharing	This is a potentially large set of linkages between employers and universities, or between several firms, or between a private firm and external knowledge consultancies. Many universities and colleges have internal mechanisms to build such linkages. Most are termed 'partnership offices'.
10	Technology transfer through a shared regional incubator	Incubators perform intermediation services if they shift beyond mere training in technology or information sharing, and act to organise the interests of their clients in sectoral ecosystems through wider alumni networks of association.
11	The bridge-building work of independent intermediaries	Many NGOs perform the role of intermediation effectively between actors involved in the local or regional economy. The primary economic actors struggle to cooperate and act jointly in the region and require the input of an independent professional body to assist in bringing the sector together around a negotiating table to agree on solutions to 'systemic' production problems which no single player could achieve acting alone.
MICRO LINKAGES		
12	Apprenticeship	A formal structured vocational education and training linkage between the state (as the regulator of the apprenticeship system), the college doing the training, the host employer and finally, the trainee. Apprenticeships last between 3 to 4 years, and after graduation, lead to long-term employment with the host employer.

13	Work placements as formal part of post-school curriculum	Many post-school qualifications require students to spend a significant period in the workplace undertaking practical training. This includes: (1) undertaking articles after graduating from universities (lawyers, accountants); internships built into (2) the BTech and Diploma programmes at universities of technology, and (3), the certificate programmes offered at TVET colleges.
14	Informal linkages between actors	Most small firms have informal linkages with neighbouring firms in their local economy, for example, through local development fora or municipal council structures. These informal arrangements may coalesce into organised networks, they may remain informal or they may disappear over time. Similarly, many professionals and semi-professionals also meet their peers informally in alumni-type structures, and in so doing, keep up to date with trends in industry. Other informal linkage processes include organised visits by school children annually to firms in the area, and visits by companies to schools on annual 'career days'. These are undertaken to link school education with the world of work and to generate interest in particular professions and para-professions.

The linkages described above emerge out of various structures and social/political processes that were set up in the Apartheid and post-Apartheid eras. Some are structural in nature, making their reform and disbandment very difficult. For example, some of the macro structuration processes listed in Table 4.1 serve today as near-permanent blockages to change. The racially skewed geospatial divisions that emerged during the colonial and Apartheid eras, the weak linkages between subcomponents of the national innovation system, and the inability of the current state to coordinate across several government departments are all good examples of the structural difficulties of resolving the many inextricable problems facing South Africa.

This taxonomy is a generalisation and simplification of what are complex and sometimes invisible linkage processes not fully researched as yet. The next discussion will refer to some of these general categories of linkages in specific historical contexts where they first emerged, and in many cases, in later contexts where they have weakened or dissolved.

The above conceptual devices – as outlined in Tables 4.1 and 4.2 – will now be applied to both the Apartheid and post-Apartheid eras. The key task in this exercise is to highlight the implications of these two historically distinct yet related political economic contexts on linkage formation. The overall discussion will first examine the enabling forces for growth and linkage formation in both historical contexts, and then the discussion will focus on the constraining factors. The chapter is structured into five sections. They are:

1. The rise of Apartheid-created linkages – which provides a historical lens which briefly spans: the era of colonial conquest; South Africa's emergence in the late 1880s as a minerals extraction economy; the creation of a 'developmental state under white rule' (Freund 2013: 105) from 1948 onwards – which contributed significantly to the creation of structured linkages for white employees to transition easily from ET institutions into permanent work; and finally, the creation of the foundations for widespread poverty and inequality and a pervasive dualism characterising the entire national economy.
2. The constraining factors under Apartheid limiting growth and linkage formation – including a 'resource curse' emanating from South Africa's export of

unbeneficiated minerals; the failure of import-substitution policies; widespread resistance to Apartheid, peaking in the 1970s and 1980s; and the implications of all of these factors for linkage formation in the era of late Apartheid capitalism.

3. Post-Apartheid enabling forces: including macroeconomic stabilisation and a new policy emphasis on microeconomic reform.
4. Post-Apartheid constraining factors: including jobless growth; deindustrialisation; crony capitalism and its reliance on the 'radical economic transformation' of state procurement to the benefit of state-linked elites; and finally, the implications of all of this for linkage formation.
5. Conclusion: the final section compares the rise of structured linkages under Apartheid with the demise of these linkages in the post-Apartheid era.

THE RISE AND DEMISE OF APARTHEID-CREATED LINKAGES

Structuring capitalism: The key role of colonial conquest

Colonial conquest has played a huge role in the evolution of both advanced capitalism in the North and under-developed capitalism in the South. A full analysis of colonialism is not possible in this book, but a brief focus on the key outcomes is necessary. The most important structural changes introduced by colonialism were the theft and privatisation of land and property rights (most often through violent conquest), the creation of wage labour and the rise of a capitalist class of entrepreneurs who owned and managed the factories, farms and mines. In this historical process, workers became dispossessed of productive assets such as land and livestock, and today have only their labour power to sell as a commodity in employment markets. These processes of dispossession and conquest have given rise to high levels of social inequality. In the developing world, where colonial resource extraction processes were the most brutal, the levels of societal inequality and poverty are extreme (Harvey 1989; Wolpe 1972).

All these structural shifts were triggered in South Africa with the arrival of the first Dutch settlers in the Cape in 1652. However, the process of developing a racially stratified form of the capitalism was fast-tracked after the discovery of diamonds and gold in the 1860s and 1880s respectively, and after the election victory of the National Party in 1948 – a victory based on the promise of a racially-exclusionary development path that benefited only white people. Black people were to serve as cheap wage labour on the farms, factories, mines and in the emerging industrial towns and cities. Throughout this long process of the structural consolidation of racial capitalism, linkages were formed between white people and the generous opportunities available to them to gain education, training and employment. Their specific linkage opportunities were decided by their class position in society. Owners of the key economic resources were linked with other owners, forming powerful industry associations which lobbied the state in support of specific sectoral interests. In addition, the emerging white professional classes had access to university education and the best jobs. The history of higher education institutions illustrates

this process of class formation clearly. The first higher education institutions in South Africa were initiated either by private citizens or by the Anglican and Dutch Reformed Churches. These initiatives were focused on the formation of private schools that offered matriculation and preparation for study in European universities for the children of the colonial elite. For example, the South African College, founded in Cape Town in 1829, was at first a private institution but became a publicly funded institution in 1873 when it became known as the University of the Cape of Good Hope. In 1918 it was transformed yet again and renamed the University of Cape Town. Natal and Rhodes Universities had similar trajectories (Mabizela 2002).

The pursuit of mineral extraction consolidated these initial processes of elite formation. The discovery of gold on the Witwatersrand in the 1880s led to the formation of the Transvaal Technical Institute in 1904. This college ultimately split, with its two satellite campuses becoming what are today known as the Universities of Witwatersrand and Pretoria in 1921 and 1930 respectively (Mabizela 2002).

White workers were also treated advantageously as a labour 'aristocracy' (Davies 1979), with Afrikaner workers in particular gaining privileged access to vocational training in technical colleges and guaranteed jobs in the many state-owned enterprises set up during this period. Structured pathways organised by the Apartheid state enabled white workers to migrate seamlessly from school into vocational training and permanent skilled and semi-skilled employment. In contrast, black workers were coerced into low-wage labour markets, trapped in dead-end jobs for life. All of these racially stratified 'linkage' processes were central to the formation of the social relations required by Apartheid capitalism (Beinhart 2001; Dubow 1989, 2014; Webster 1983).

The creation of an African working class

Colonial conquest had the effect of confining Africans to 13.5% of total land stock in South Africa by 1936 – a year which witnessed the passing of the *South African Land Act*. Working with this iniquitous land allocation, Apartheid state planners then began orchestrating a much more insidious grand plan – that of 'separate development', which lasted from 1948 until 1994. The main purpose of this policy was to manage the delicate balance between freeing up a cheap African labour force from the rural areas without enabling a massive process of African urbanisation into the white towns and cities. Central to Apartheid's migrant labour and homeland policies was the need to manage this reciprocal relationship between using cheap African labour from the countryside, but ensuring their continued domicile in the countryside and not in the urban areas close to white settlements. Retaining a domicile in the countryside enabled a cheaper social wage payable by the mines and factories (Dubow 2014; Hart & Padayachee 2013; Wolpe 1972).

Apartheid planners also created six self-governing homelands and four so-called independent Bantustans – which were to serve as the 'ethnically' defined homes of all Africans in the country. The ten homeland and Bantustan territories were located within the 13.5% land allocation. This model of separate development meant that any ownership

of economic resources or any formal provision of education and training services were available to African people only in these racially defined territories.

All of the above processes forced the bulk of the African population into wage labour within a matter of decades. The structural process of putting these oppressive social conditions in place was foundational as it shaped the racial character of capitalism in South Africa. To a large extent, these structural conditions have not disappeared, and Africans still make up the majority of the working class, unemployed workers and the poor.

South Africa emerges as a minerals-extraction economy

A second structural force beyond the colonial conquest of land to impact significantly on the character of South African capitalism was the discovery of gold and diamonds in the 1860s–1880s, but more specifically, the emergence of a minerals-energy complex (MEC) that the discovery of minerals gave rise to. Fine and Rustonjee (1997) define an MEC as the diversification of mining interests into manufacturing and the development of local energy and chemicals manufacturing capacity. The emergence of an MEC led to the rise of an elite and wealthy white capitalist class and large corporations – what some have termed as the rise of ‘monopoly capital’ (Fine & Rustonjee 1997). These elite capitalists emerged through the growth of several very large corporations in mining (Anglo American, Gold Fields and De Beers), manufacturing (the Frame Group (Textiles), tobacco (Rembrandt), forestry, paper and pulp (Mondi and Sappi), alcoholic beverages (South African Breweries), and banking (Standard, Barclays, Sanlam and Volkskas).

Apartheid as a ‘developmental state under white rule’

Associated with the above historical developments, a third enabling structural force shaping the linkages between actors in the national economy occurred after 1948, with the emergence of what Freund (2013) terms the creation of a ‘development state under white rule’. The developmental state is a category in the typologies of global capitalism developed by political economists in their analysis of the rapid development of certain East and Southeast Asian economies. It is characterised by a capable civil service, effective state steering of the economy, a competitive economy based on high skills and advanced technology, the creation of state-owned enterprises and the building of an extensive state-funded human capital and R&D system which has enabled high levels of manufacturing exports (Chang 2004).

Freund defines several waves of development which resulted in the emergence of the Apartheid developmental state. The first wave was led by Lord Milner after the Anglo-Boer War of 1899–1901, which was aimed at the reconstruction of a country ravaged and divided by war. The second and more influential wave was the period of the PACT government – a coalition formed in 1924 by the National Party and the South African Labour Party which lasted from 1924 to 1933. This government established ISCOR, the first state-owned company focused on the production of iron ore and steel. The PACT government

also introduced import tariffs to protect local industry – a move which signalled the start of what became a programme of import-substituting industrialisation which lasted into the mid-1990s (Freund 2013). The third wave – and ideologically the most significant – was in the post-war period with the victory of the National Party in attaining power in 1948. What stands out for Freund in the period after 1948 was a ‘remarkable era of planning much of which can be labelled as developmental’ (2013: 94) – albeit in a racially exclusionary form. This planning entailed several commissions from the 1950s onwards which mapped out in detail the socio-economic contours of Apartheid policy. The state also consolidated its research and development capacity in this period – the Council for Scientific and Industrial Research (CSIR), the Industrial Development Corporation (IDC) and the Human Sciences Research Council (HSRC) were all established in the 1940s. The fourth wave occurred in the late 1960s through to the 1980s which comprised the development of capabilities in armaments manufacturing with the establishment of Armscor, and with a significant private sector manufacturing capacity also emerging.

The implications of these development state capabilities for linkage formation were significant. The technological needs of mining, energy and chemicals (and later, the armaments industry) became a national priority, leading to the establishment of many post-school organisations aimed at servicing their specific skill needs. The example of universities has been given earlier. A second example is the rise of 15 technikons in South Africa. A binary system of higher education was strengthened in 1967 with the upgrading of various technical colleges into applied higher education institutions known as technikons. This move was a direct response to the need for intermediate (post-school but pre-university) technical skills that only polytechnic-type institutions could deliver – comprising practically-oriented training informed by the latest technology. The Cape, Natal, Pretoria and Witwatersrand technical colleges were upgraded and transformed into Colleges of Advanced Technical Education (CATEs) in 1967. In addition, two new CATEs were established in this period – one in Vanderbijlpark and the other in Port Elizabeth. All of these six technical institutions were then upgraded into technikons in 1979. The Apartheid regime also created a further nine racially exclusive technikons in designated coloured and Indian townships as well as in the so-called African homeland areas in the 1980s (Winberg 2005).

Similarly, South Africa’s accelerating industrialisation in the early twentieth century was accompanied by a significant growth in technical college enrolments. Much of the growth was fuelled by an increase in the number of apprenticeship contracts which, following the *Apprenticeship Act* of 1922, required that apprentices attend technical classes. Over the 20 years from 1935 to 1955, full-time technical college enrolments grew from around 4 000 to 9 000, but part-time enrolments, the majority of which were linked to apprenticeships, soared from 16 000 to 55 000 – all of them white trainees (Malherbe 1979).

In contrast, technical and vocational education for black people was extremely limited. The Apartheid state did establish colleges for black workers but these were located in townships and designated group areas, removed from white commerce and industry in the cities, and were often poorly staffed and equipped (Chisholm 1983).

A pervasive dualism

A fourth structural force – a consequence of the previous three described above – was the pervasive dualism which began to emerge in Apartheid South Africa. On the one hand, South Africa witnessed the growth of a form of racialised and exclusionary ‘developmental capitalism’ aimed at benefiting whites at the expense of black South Africans. The project was so successful that the inequalities faced by poor Afrikaners – who were forced to leave the agricultural sector as it gradually mechanised – were eliminated and parity with English white society was achieved by the mid-1970s [up from 50% parity in 1948] (Beinart 2001: 181). However, this development came at a brutal cost to black South Africans who were excluded from the benefits of a rapidly growing economy.

Other Apartheid laws passed during this time included the *Group Areas Act* of 1950 which formalised an already segregated residential system in white towns and cities (Dubow 2014). The racially stratified geospatial landscape which emerged because of the skewed allocation of land in 1936 and the 1950 *Group Areas Act* is perhaps the most destructive and intractable of Apartheid’s imposed policies. Hausmann et al. (2023: 81) argue that the processes of exclusion emanating from South Africa’s unique geospatial landscape is by far the single most damaging brake on economic growth:

South Africa is exceptional in its spatial patterns of economic inclusion ... It faces some of the world’s highest rates of inequality and unemployment, which vary greatly across geographic space ... Despite three decades of explicit efforts to reverse this spatial exclusion, post-Apartheid policies have done little to address the spatial inequality of job opportunities. Whereas regional divides are not uncommon along the path of economic development the *extent* to which South Africa is unequal in space is unique.

CONSTRAINING FACTORS IMPACTING ON THE APARTHEID ECONOMY

The factors shaping Apartheid were not all positive and enabling of economic growth. Alongside the conditions which gave rise to a successful developmental state for whites were four significant constraining factors. These were: (1) the emergence of a resource curse; (2) the failure of import-substituting industrialisation; (3) rapid black urbanisation, and as a consequence, the collapse of a key pillar of Apartheid policy; and finally, (4) widespread resistance to oppression in the 1970s and 1980s. Each of these economic constraints on growth and social development will now be discussed.

The resource curse

As suggested earlier, the achievement of developmental state capabilities by the Apartheid regime did not unfold without problems and constraints on growth. The most significant constraint on the economy since mineral extraction processes began in the Kimberley

diamond fields over 150 years ago was the emergence of a developmental trap known as the 'resource curse'. The resource curse is defined as a country having too much of its capital and labour force concentrated in a few resource-dependent industries whilst ignoring the development needs of the wider manufacturing sector (Fine & Rustomjee 1997; Rustomjee 1993).

Indeed, one major outcome of the evolution of the MEC was the way it shaped a development path which prioritised mineral extraction at the expense of developing a more diversified base of manufacturing activity across multiple sectors. Profitable production in the MEC required capital intensive plants, large and wealthy lead firms and a highly skilled labour force including artisans, technicians and engineers. Because of the favourable prices earned from the export of these basic mineral commodities and the chemical by-products arising from this mining activity, the pursuit of mineral exports became the primary economic goal of the Apartheid regime. This privileging of the MEC operating in a few strategic manufacturing sectors had the effect of downgrading the importance of developing other sectors of manufacturing which were not dependent on large corporations, capital intensity, economies of scale and high skills – for example, the metals, furniture, clothing and leatherware sectors. Elsewhere in the world, these latter sectors were labour-absorbing and characterised by a multiplicity of smaller firms requiring a lower skills base, all of which promoted largescale employment. This was not the case in South Africa because of the distortions imposed by the MEC (Fine & Rustomjee 1997; Rustomjee 1993).

The failure of import-substitution policies

A related constraint has been the ultimate failure of the Apartheid regime's adoption of 'import-substituting industrialisation' from the 1920s through to the early 1990s. The Apartheid regime adopted these policies to assist in shifting the economy beyond resource extraction to build local manufacturing capacity. It was also used to support white living standards through the employment of white labour and the manufacture of cheap local consumer goods aimed at the white consumer market. This was achieved by supporting emerging industries through the application of import tariffs and state subsidies for the local production of consumer goods. It was an important policy option globally during this time because it assisted developing economies in overcoming the unfair terms of global trade which made it unwise to rely solely on the export of primary products (Holden 1992).

The main problem with import-substitution over the long run was that it provided a protective shield over the Apartheid economy from the 1940s until the 1990s, which allowed local firms to produce products without worrying about cheaper imports. However, this backfired in the late 1980s onwards as noncompetitive companies in metal, clothing, textiles and furniture struggled to halt the competition from China and other Southeast Asian economies. Many South African firms in these sectors closed shop from the 1990s onwards as cheaper imports were allowed in under the guise of global free trade and open economies. Once tariff protection was lifted by the post-Apartheid

government in the mid-1990s, South Africa's manufacturing goods proved to be highly uncompetitive on world markets, including furniture. South Africa had a 2.62% share of total manufactured exports on world markets in 1955, but this figure dropped to a mere 0.84% by 1985 (Kaplan 1991: 4). In the current period, this trade imbalance has not been resolved as will be seen in the later discussion on 'deindustrialisation'.

Rapid black urbanisation in the 1970s and 1980s

An additional constraining factor contributing to the weakening of the Apartheid economy was the mass urbanisation of hundreds of thousands of Africans from the countryside into the cities in search of jobs. This took place in the late-1970s onwards. This phenomenon destroyed a key pillar of Apartheid's unique form of racial capitalism – the low wages enabled and perpetuated by the migrant labour system. Throughout the post-1948 period, urbanisation was not allowed to proceed even though the ability of the rural economy to support black families had collapsed. Overpopulation, land erosion and abysmal levels of infrastructural development in the rural areas made it difficult for people to continue living off the land (Dubow 2014; Beinart 2001; Wolpe 1972). It was therefore not surprising that by the 1980s urbanisation had become the most explosive social phenomenon to impact on every metropolitan centre in South Africa.

Occurring simultaneously, employers in South Africa also began lobbying government to change its policies on African urbanisation. They complained in the 1960s and 1970s about the need for a more skilled black workforce permanently resident in urban areas closer to places of employment (Chisholm 1983). The educational deficit implicit in Verwoerd's Bantu Education policy was now kicking in, with shortages of machinists, artisans, technologists and engineers throughout the urban economy (Beinart 2001; Freund 2013).

Strongly associated with this process of black urbanisation and the problem of skill shortages was the slow deracialisation of the Apartheid labour market. For example, while the percentage share of whites employed in professional and semi-professional jobs declined progressively throughout the 1970s and 1980s, African employees' share of jobs in these occupations increased noticeably (Hindson 1991). The most important change occupationally, however, was the transition of African unskilled labour into semi-skilled workers which began occurring in the late 1960s and 1970s. For example, by 1977, Africans constituted 67% of all semi-skilled labour in the metal industry while whites occupied only 16.4% of semi-skilled jobs. The converse applied a mere decade earlier. Hindson concludes from these figures that by the 1980s the number of African semi-skilled workers exceeded 2 million, thereby 'superseding the unskilled African proletariat as the numerically dominant stratum of the African working class' (Hindson 1991: 229). This was a very significant change, destroying Prime Minister Verwoerd's notion that Africans would always remain the 'hewers of wood and drawers of water' (HF Verwoerd, speaking in the Senate, 7 Jun. 1954).

In the light of these problems, by the mid-1980s the Apartheid government was forced to introduce certain structural reforms to its overall political-economic framework. The first

important change came in 1985 with the President's Council publication of a report on *An Urbanisation Strategy* (PC 1985). This report promoted the idea of 'orderly urbanisation' and suggested that African urbanisation was both inevitable and economically desirable. The report recommended that reforms were needed to stabilise rather than undermine the process of black urbanisation (Morris & Padayachee 1989). In July 1986, the state adopted most of these recommendations and abolished key influx control measures such as the pass laws. The state also changed its position with regard to urban settlements. The key social thrust of this new policy was decentralised Apartheid and social differentiation through the creation of massive periurban settlements for Africans which were located at a distance from the stabilised urban areas of the former 'white' South Africa.

Other reforms introduced by the Apartheid regime included the Wiehahn Commission's examination of labour laws and the Riekert Commission's investigation of black urbanisation – both launched in 1979. Both recommended the rationalising of labour and training legislation, which the Apartheid state accepted. Africans were thereafter allowed to reside in white South Africa, be members of legally recognised trade unions, occupy any job and be trained accordingly (RSA 1979; Wiehahn 1982).

Widespread resistance to oppression in 1970s and 1980s

The Apartheid system, with its sophisticated form of 'developmental state' but constrained by its unique economic trajectory and high levels of social inequality, was successful and stable only for a limited period. By the 1970s a range of political problems began to emerge. First, African workers began to organise into trade unions to protest their oppression as was evident in the 1973 Durban strikes (Hart & Padayachee 2013). The Soweto school uprising exploded in June 1976 and spread across the entire country. African youth fled persecution, crossed the border, and joined the armed struggle being led by the African National Congress (ANC) in exile. The ANC in turn began more daring internal missions, bolstered by the turmoil across the country. In response to this political instability and the brutal repression that followed, South Africa was economically isolated by the world community through the enactment of economic sanctions. All these pressures suggested the Apartheid edifice, once a powerful machine, had 'feet of clay' (Abedian & Standish 1992: 13).

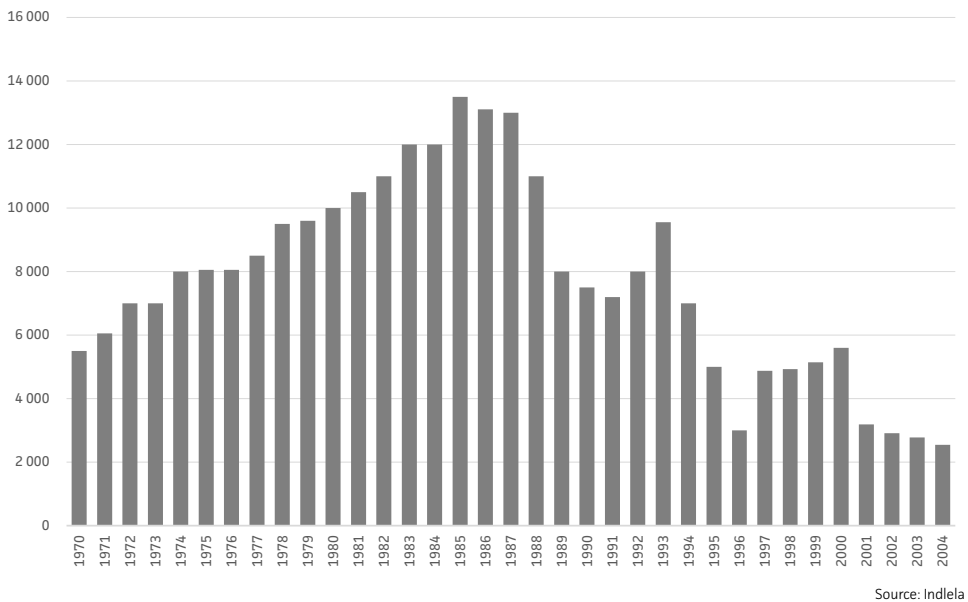
Implications for linkage formation during late Apartheid

The structural factors which constrained the growth of late Apartheid – widespread political resistance, the stranglehold of the 'resource curse', largescale social inequality and rapid black urbanisation – also impacted negatively on the process of linkage formation between actors in the economy and education system. The economic constraints described above communicated different messages about the need for close linkages between the economy and education system, and in a seemingly contradictory manner, these constraints began to weaken the structured linkages established by the Apartheid 'developmental state under white rule'. Two examples will be given here. In the first case, the dominance of an MEC in a few capital-intensive sectors contributed directly

to the lack of a diversified manufacturing sector based on millions of small firms (formal and informal) operating in labour-intensive sectors such as metals fabrication, furniture, clothing, leatherware, construction and plastics.

A major implication of this failure to diversify the manufacturing economy is the continuation of low levels of demand for upskilling of the human resource base in the economy. Keep (2000) has noted in the UK context that without an adequate demand from employers for new knowledge and skill inputs, weak links will characterise the relationships between manufacturing firms and post-school organisations. A good example in South Africa of this low demand for skills has been the decline in the production of artisans over the past four decades. The following figure illustrates the rapid rise and then demise of apprentices attaining artisan status in South Africa over three decades.

Figure 2: Total number of apprentices qualifying as artisans, 1970–2004



As is evident, the apprenticeship system remained strong until the mid-1980s when the graduation of artisans peaked at 13 500 in 1985. The decline thereafter reflects the severe economic recession which set in during the mid-1980s and which lasted well into the post-Apartheid political dispensation which came into being in 1994. It is also a reflection of the combined impact of the MEC and deindustrialisation processes which have restricted demand for additional artisanal skills in the economy as well.

The second example of linkage processes is different from the first – it has unexpected outcomes. The rapid urbanisation of Africans impacted on Apartheid policy in two contradictory ways. In the first instance, it was another form of resistance to a key pillar of Apartheid ideology – that being to keep Africans trapped in the countryside. However,

it was also associated with the process of deracialising the labour market which began to occur in the 1970s. The past arrangement where whites dominated blue-collar positions was now in decline, with most whites occupying white collar jobs – a process given a boost with the rise of the financial sector during this period.

In an ironic and unplanned ‘joining’ of causes during this time, employers and African workers migrating from the countryside shared the same objective – for them to acquire residence rights and skills in the metropolises of South Africa. It was a powerful structural pressure on the Apartheid regime to change the rules of the labour market and residential settlement (Hindson 1991).

The implications of the late Apartheid reforms for renewing linkages between post-school organisations and the economy were significant. Technikons and technical colleges were now built in white South Africa for Africans. In addition, employers devised a range of training programmes for African workers who previously had been excluded from formal training initiatives. Linkage formation processes were strengthened for African unskilled and semi-skilled workers, who through the might of trade union struggle, were able to change the rules of the racially stratified labour market in their favour. They could now begin to access formal vocational training both in state-funded colleges and in-house in private sector firms. This was not possible in earlier periods.

The discussion now shifts to the contemporary period in the process of linkage formation. In this post-Apartheid and democratic era, linkage formation was yet again constricted, this time by the forces of deindustrialisation, crony capitalism and the consequent implosion of governing party, state and the publicly funded infrastructure underpinning the national economy.

POST-APARTHEID ENABLING FORCES

Several enabling and constraining factors shaped the evolution of the post-Apartheid economy. This evolution entailed two simultaneous processes – the disbandment of all institutional and legislative vestiges of the Apartheid system, and the introduction of new policies and social institutions. However, as the old order dies, the emergence of a new system with new policies and institutions is no easy task. This is primarily due to the intractable nature of many of Apartheid’s social and economic structural conditions – most significantly, the racially-skewed geospatial dynamics which continue to separate black from white life. The new ANC government faced significant challenges in eradicating these aspects of Apartheid.

The next section discusses the policies the ANC government implemented after the first democratic elections in 1994. The analysis adopts Zalk’s (2021) useful dichotomy between two phases of ANC rule. The first is the phase of ‘macroeconomic stabilisation’ which was followed by a linked process (once stabilisation had been achieved) entailing a shift from austerity measures to microeconomic reform. This also included the introduction of several expansive social programmes, most notably, the social grants

system introduced in the late 1990s. Zalk's second phase was the rise of 'crony capitalism' which exploded after the election of Jacob Zuma as president in 2009.

Macroeconomic stabilisation

The centrepiece of ANC macroeconomic policy was the *Growth, Employment and Redistribution* (GEAR) (DoF 1996) strategy adopted and implemented in 1996. GEAR entailed achieving macroeconomic stability through orthodox monetary policies, with fiscal austerity and monetary constraint to reduce demand and hence reduce the balance of payments deficit. These measures were complemented by trade and financial liberalisation as well as privatisation to reduce market distortions and promote the effective functioning of the economy (McCord 2003).

Stabilisation was indeed achieved, with a mini boom emerging from 2000-2008 with growth rates peaking close to 5% during this period, and interest and inflation rates significantly lowered (Hirsch et al. 2021). Government was now wealthy enough to consider more expansionary activities such as a significant growth in the provision of social services to the poor, and socio-economic infrastructure development. Additionally, the government was able to introduce one of the world's largest social grants systems in this period – benefiting over 18 million people.

The introduction of GEAR was faced by significant controversy. It was not universally admired within the ranks of the broad left in South Africa, including many ANC members. However, Vusi Gumede, a political economist who worked in the Presidential Office of Thabo Mbeki, argues that GEAR was justified on the grounds that the inherited economy of May 1994 was in a bad shape, with double-digit inflation, very high interest rates, a negative gross domestic product (GDP) growth rate and very high government debt. In his view, stabilisation was unavoidable (Gumede 2015: 40).

However, GEAR was viewed as a betrayal by many in the ANC and within its alliance partners. Rob Davies, a former Minister of Trade and Industry in the ANC Government led by Jacob Zuma, has been critical of the GEAR strategy. He maintained it was developed without prior consultation with any of the ANC's alliance partners – the South African Communist Party (SACP) and the Congress of South African Trade Unions (Cosatu). Davies bemoans the fact that GEAR led to the controversial scrapping of the ANC's election manifesto *The Reconstruction and Development Programme* (ANC 1994) – a far more progressive economic programme committed to redistribution and overcoming poverty (Davies 2021).

Despite these criticisms, the rapid expansion of access to social services in key areas such as formal housing, piped water, electricity and other municipal services was a major post-1994 gain enabled by the success of GEAR's austerity measures. However, access to these services was still skewed in favour of urban and white communities. For example, whereas 75% of Africans residing in urban areas had access to formal housing in 2003, only 62% of rural Africans had formal housing (Budlender 2003). Notwithstanding

these shortcomings, the improved access to social services was a major government achievement in the first decade of democracy.

A new emphasis on microeconomic reform

Another important achievement of the post-Apartheid government in the decade after the launch of GEAR was the subtle shift in economic policy away from a reliance solely on the austerity measures of monetary policy towards a more expansive microeconomic policy outlook. Microeconomic policies aim to improve the inputs needed in production in manufacturing plants – these include the publicly-funded economic infrastructure of the country (electricity, railways, roads and ports), controlling the costs of material inputs in production (like timber, steel and electricity), and building the science, technology and skills base of the country.

This important shift began in the early 2000s with the government emphasising a comprehensive basket of socio-economic policies to address the triple scourge of inequality, poverty and unemployment. These measures included: building stronger linkages between the formal and informal economies; increasing infrastructural investment; targeting key sectors; promoting black economic empowerment (BEE); encouraging labour-intensive production methods; promoting the Expanded Public Works Programme; and building a stronger social safety net for the poor (Altman & Mayer 2003). The highlight of this period was South Africa's successful hosting of the 2010 soccer World Cup. In addition to the building of brand-new football stadia, the state also improved road, rail and airport facilities across the country, including the now successful high-speed Gautrain operating between Johannesburg and Pretoria.

POST-APARTHEID CONSTRAINING FORCES

Post-Apartheid society has faced multiple crises since the initial 'honeymoon' phase when Mandela was voted president in April 1994 and the ANC government promised substantial change to the benefit of all citizens. The celebrations did not last long as the structural constraints restricting economic growth and prosperity remained. All of these constraints and problems cannot be addressed in this chapter. Rather, four major obstacles to continued growth and prosperity will be highlighted: (1) jobless growth; (2) deindustrialisation; (3) the rise of crony capitalism; and (4), the implosion of governing party, state and publicly funded infrastructure.

Jobless growth

The GEAR policy framework sought to attain a growth rate of 6% per annum and job creation of 400 000 persons per year by 2000. This was not achieved. Whiteford and van Seventer (2000) report that the main failing of GEAR was that it had not significantly addressed the critical issue of the long-term negative growth and employment performance of the South African economy. Lewis (2001) suggests that a 'low growth/

low employment' development path is an appropriate descriptor of the South African economy. Part of this low growth problem has to do with the highly restrictive monetary and fiscal policies introduced by GEAR. Indeed, Stiglitz (1998) has argued that the prioritisation of macroeconomic stabilisation globally has tended to undermine rather than enhance growth prospects. Given Stiglitz's observations here, it can be argued that GEAR has exacerbated the problem of low growth and low employment, not resolved it.

Deindustrialisation

Perhaps the most devastating outcome of the resource curse and the failure of import-substituting industrialisation has been the more recent process of 'deindustrialisation'. With the political and economic difficulties of late Apartheid as described earlier, manufacturing output began to slow, and after 1980 it stagnated throughout the decade (Abedian & Standish 1992; Beinart 2001). This decay began a process which Tregenna (2013: 79) terms 'deindustrialisation', which she defines as the loss of jobs from the manufacturing sector because of falling output and/or rising productivity. It entails declines in manufacturing employment as a share of total employment and in value-added as well. Deindustrialisation is a process common to many economies, including advanced economies. It has had a devastating impact on the manufacturing sector in South Africa since Apartheid. However, the punitive impact of 'premature deindustrialisation' (the form it has taken in South Africa and other developing economies) is that it deprives developing economies such as South Africa the full benefits which would accrue if industrialisation had reached a more mature stage (Tregenna 2013).

Deindustrialisation has had devastating impacts on the furniture industry in South Africa. The industry has been unable to compete with low-cost Chinese and Southeast Asian imports since the 1990s, and the sector has not had the 'technology, skills nor access to export markets to be able to compete higher up the value chain with developed countries' (Tregenna 2013: 83).

A parallel process occurring alongside the decline of industry has been the rise of finance capital as the dominant force in the national economy. The primary damage caused to the economy by financialisation is that it diverts capital away from productive investments in many sectors of the economy, further limiting South Africa's ability to diversify its industrial base (Ashman et al. 2013). Financialisation is also associated with a rise in speculative investments and mergers, acquisitions and hostile takeovers – all aimed at increasing short-term shareholder value and not real productive activity (Ashman et al. 2013).

Crony capitalism

A major part of Zalk's description of the evolution of post-Apartheid capitalism after 2009 was that it gave rise to what the popular media refer to as 'crony capitalism'. In the academic literature, this form of capitalism is termed neo-patrimonialism. Schlumberger defines it as when power is exercised informally in a personalised system where the ruler builds close links with various local elites to create corrupt clientelist networks (Schlumberger

2008). In South Africa, both terms – ‘crony capitalism’ or ‘neo-patrimonialism’ – would refer to the Zuma era and the explosion of state capture since 2009 – a regressive process still underway during the Ramaphosa administration of 2018 onwards. State capture entails the premeditated and coordinated activities of senior leaders in government aimed at the enrichment of a core group of beneficiaries, to consolidate political power and to ensure their long-term survival or rent-seeking activity.

Zalk sees the Zuma era as contrasting starkly with the earlier period of ANC rule where significant social and economic gains were made that benefited most citizens. In contrast, there were few gains made for ordinary citizens during the Zuma administration. The two eras are difficult to compare more systematically for additional reasons. This is because both the Mandela and Mbeki presidencies were characterised by clear and coherent programmatic goals – peace, monetary stabilisation, improved social services to the people and the creation of a single unified state in the case of Mandela, and significant economic planning capabilities via GEAR and the *Accelerated and Shared Growth Initiative for South Africa* (RSA 2006) in the case of Mbeki. The implementation and impact of these programmes can be easily assessed – and much success was attained in this regard, although some failures have been identified as well. Assessing the Zuma era in terms of its purposive socio-economic programmes is much more difficult – because such programmes did not exist, or if they did, they were never implemented, serving mere symbolic purposes aimed at falsely creating the appearance of state delivery.

Initially, the activities of the Zuma administration appeared encouraging. For example, in the period 2009/2010, a National Planning Commission (NPC) was appointed, the National Industrial Policy Framework (NIPF) (DTI 2007), initially launched in 2007, was more formally adopted now as part of government’s official set of economic policies. This was not the case with Mbeki, where industrial policies were subordinated to the needs of monetary policy. The Zuma administration, in their advocacy of economic policy, also spoke enthusiastically about South Africa becoming a ‘developmental state’ led by an appropriately skilled civil service (Chipkin et al. 2018).

However, these initial positive signs appear to have served mainly symbolic purposes and they were soon replaced by more negative developments. Zuma’s actual interventions in society were mostly political actions aimed at: strengthening his grip on power; weakening his opponents within the ANC, often via cabinet reshuffles; and advocating the ideology of ‘radical economic transformation’ (see discussion below). These were all political moves aimed at being able to access state resources for corrupt ends. The shift to a captured state meant that all the lofty policy goals of the Zuma government (and to a large extent, the Ramaphosa government) fell away. Almost all the attention of the Zuma leadership in government was allocated to devising new methods for self-enrichment – a set of corrupt practices which continued into the Ramaphosa era (Buthelezi & Vale 2023; Chipkin et al. 2018; Mkhabela 2022; Van Heerden 2020).

A detailed study of corruption and state capture is beyond the scope of this book. However, it is too important to not cover in some detail. Journalist Marianne Merten provides insight into the scale of state capture. She reports that the cost of state capture hovers at around ZAR1.5-trillion over the second term of the Jacob Zuma administration

(2014–2018). This scale of theft attained in only four years is devastating. A more accurate determination of the losses from the fiscus due to corruption since 2009 has not been determined, but based on Merten's data for 2014–2018, it is clearly enormous. The scope for rational and purposeful implementation of well thought through policy aimed at benefiting all citizens has been significantly reduced.

'Radical economic transformation' and state procurement

The corruption of state procurement processes has been central to the practices of crony capitalism. Chipkin et al. (2018) write that from about 2011, sections of the ANC and various ministers and senior government officials, supported by elements of organised black business, began referring to the idea of 'radical economic transformation' (see also Mkabela 2022). Initially, the National Treasury under the leadership of Pravin Gordhan opposed these radical economic transformation ideas – for example, the insistence that 30% of government contracts, especially those of state-owned enterprises, be set aside for black companies, irrespective of their experience, capacity or price. This resistance made the National Treasury and other state institutions (especially those involved in criminal investigations and prosecution) enemies of radical economic transformation. The Zuma administration moved to establish control over these state institutions.

The implosion of party, state and publicly funded economic infrastructure

Zuma was eventually fired in February 2018. He was replaced as president of the ANC and country by Cyril Ramaphosa. As was the case with Zuma, assessing the economic policies published by the Ramaphosa Presidency is a difficult task. His tenure so far has had to deal with multiple crises which have created a chaotic environment within which to promote any kind of rational economic policy reform process. Amongst these crises were:

- Winning power far too narrowly in December 2017, leaving a large component of the Zuma-led 'radical economic transformation' camp dominating the ANC Executive, Cabinet and public service;
- The COVID pandemic both globally and locally, particularly the initial lockdown of all social and economic activities, which disrupted the national economy severely, pushing millions of employees and thousands of firms out of work;
- The continuation of corruption, including most appallingly, the theft of funds intended for COVID medical and socio-economic relief;
- An insurrection which occurred in July 2021 in KwaZulu-Natal and Gauteng, which saw over 300 people die and thousands of shops, factories, warehouses and malls looted and gutted, triggered in part by the jailing of former President Zuma for his refusal to appear before the Zondo Commission on state capture;
- The collapse of most critical economic infrastructure such as energy, rail, roads, port facilities and water supply;
- An exponential increase in crime and violence across the country (Buthelezi & Vale 2023; Chipkin et al. 2018; Mkabela 2022; Van Heerden 2020).

Ramaphosa has thus been forced to respond to these pressures in three ways during his first term in office. He has sought ‘unity’ in the ANC – presumably to protect his slim grip on power. However, this has meant little action taken against corrupt senior leadership in the ANC and government. Secondly, he has formulated some economic policies, but as is discussed below, this has largely been the rehashing of older policies that have never been implemented. It appears as if a level of policy saturation has occurred in the ANC – it is now unable to define new and effective policy to rescue the country from its on-going decline. And thirdly, Ramaphosa appears to have become his own worst enemy, displaying a feeble and indecisive leadership style and embroiling himself in a financial scandal surrounding his game farm in Limpopo province (Booyesen 2021).

Ramaphosa’s economic reform agenda has been focused on the *Economic Reconstruction and Recovery Plan* (RSA 2020) launched in 2020 to deal with the devastation of COVID. The Plan committed to creating over 800 000 work opportunities in the immediate term in response to job losses; a growth rate of 3% over the ensuing 10 years; unlocking more than ZAR1 trillion in infrastructure investment; reversing the decline of the local manufacturing sector and promoting reindustrialisation through deeper levels of localisation and exports; and resuscitating vulnerable sectors such as tourism which have been hard hit by the pandemic. Much of these commitments were existing policy positions of government in other policy documents – for example, the NDP and the NIPF. The Plan received considerable criticism in the press and from academics. Ann Bernstein, Executive Director of the Centre for Development and Enterprise, argues that the Plan was all-encompassing in its reach and ambition while being completely naïve about the capabilities of the state and the challenges it faces. The Plan failed to engage with the real causes of decline – corruption, mismanagement and the lack of implementation in many policy areas (Bernstein 2022).

Implications for linkage formation

Thirty years of ANC rule has undoubtedly made life better for most citizens. All citizens benefited from the cessation of hostilities between the various warring parties in the last days of Apartheid. The successful democratic elections of 1994 triggered peace and social stability both within South Africa and with neighbouring countries. Big business and the white middle class benefited enormously with the stability ceded to the national economy by the social settlement engineered by the ANC and National Party prior to the elections of 1994. This enabled South Africa to rejoin the global economic community, opening up new economic opportunities for mostly white firms and white professionals. But most importantly, the vast majority of black citizens acquired a government that built millions of homes as well as schools and clinics for the first time in black urban neighbourhoods. All this constituted important progress in the social transformation of South Africa.

Two other achievements need to be mentioned here. First, the victories derived from the struggles fought against the Apartheid system, particularly since the mid-1970s, generated important benefits to black society. These struggles forced the Apartheid

regime to reform in 1980, ceding important rights to African workers, the majority of whom were unskilled. They could now reside and work anywhere in South Africa, could receive schooling and vocational education and training in the 'former' white South Africa, and could be legal members of trade unions. Although these benefits were the outcomes of struggle waged under Apartheid in the 1980s, this partial normalisation of the labour market and the undoing of racially restrictive legislation also benefited the reform agenda of the post-Apartheid government. Most importantly, the late Apartheid reform process helped consolidate the creation of an African semi-skilled working class as the dominant stratum of the employed working class. This was an important gain upon which the post-Apartheid government was able to build further vocational training and labour market reforms which occurred in the late 1990s.

Second, the massive expansion of social services under the Mandela and Mbeki governments from 1994–2008 led to an economic boom which improved per capita incomes and access to healthcare, food consumption and for a few, new jobs. The launch of the social grants system in this period consolidated this process, making most South African households better off than they were under Apartheid.

However, the acquisition of economic gains – and the creation of a more inclusive and prosperous economy to the benefit of all citizens – has been more elusive. This is largely because of the power of the structural forces which emerged historically to impose a particular form of capitalism based on resource extraction and racial stratification – which today is difficult to undo. The structural limits implicit in South Africa's particular form of capitalism and the choice of neoliberal solutions to these growth constraints meant that very powerful brakes on growth soon kicked in. These structural limits include:

- The continuation of South Africa's historically evolved path trajectory comprising resource extraction, the resource curse and deindustrialisation.
- The utilisation of stringent austerity measures such as GEAR – which as Stiglitz (1998) has noted – has proven counterproductive in the medium and long term with significant damage done to the economy in terms of jobless growth.
- Another structural constraint that has weakened the potentially positive impact of ANC government policies is the geospatial structure of our society. No amount of social engineering by the ANC has been able to resolve this deep schism in South African society between those who live, work and play in the centre of towns and cities, and those who reside far away from the centres of employment and learning. These social structural constraints have had a powerful impact on weakening the process of linkage formation between the education and training system and the economy.
- State capture, rampant corruption and widespread state maladministration of the economy and its core infrastructure has led to the closure of firms, loss of jobs, and as a consequence, a significant drop in demand for upskilling. All of this has weakened further the link between the education and training system and the economy.

COMPARING LINKAGE CAPABILITIES: THE APARTHEID VERSUS POST-APARTHEID ERAS

Linkage formation under colonialism and Apartheid has been highly formative in providing major benefits to white business and white citizens – the provision essentially of structured linkages into a highly inclusive economy and society for whites only. In contrast, the process after 1994 has been that of decline. In some instances this was characterised by a rapid process of dissolution of linkages at the exact moment in history (1994) when black South Africans won the right of equal access to the national economy that formerly existed only for whites. The example of college training is relevant here. As indicated earlier, the linkage mechanisms for apprentice training have been severely eroded since the mid-1980s. In the era of the great Apartheid economic boom (from the 1950s to the mid-1970s) almost all students at technical colleges were whites with most studying to be artisans. They were sponsored by industry and trained part-time in block release format, working for their employer for the rest of the time. They had access to work experience and received practical training from senior artisans on the shop floor. In the period since the statutory deracialisation of apprenticeship (1981), and more recently with the rapid deracialisation of technical colleges (since 1994), these social conditions have been dramatically inverted – 90% of college students are now African. Most study full-time with no employer sponsorship. They have voluntarily enrolled at the colleges without any indication of employer sponsorship or future recruitment. Many have been enticed by the marketing of college providers who offer the ‘promise’ of future employment without any structured access to it. All these characteristics suggest the emergence of a perverse ‘education–work’ nexus which is training provider-led and highly voluntarist, premised on the choices made by students who already have matric, who then acquire college certificates N1–N3, all without a firm promise of employment (Cosser et al. 2003; Kraak 2008; NSA 2018). The decline of both the highly structured apprenticeship system and the college system (whose primary role in the period 1920–1980 was to support the apprenticeship system) has been devastating – especially in their role of training and inserting thousands of young technical graduates annually into the labour market. This linkage function has collapsed.

Table 4.3 is the culmination of applying all of the evidence gathered from the two conceptual devices as outlined in Tables 4.1 and 4.2. It is an attempt at summarising the entire evolution of South African capitalism before and after the pivotal moment of attaining democracy for the first time in 1994. Within this broad historical context, the discussion has then attempted to show which of these key historical structural forces has shaped what types of linkages between the ET system and the economy – and in some instances, how these linkages have dissipated and disappeared at the advent of democracy. For simplicity purposes, the 14 enabling and constraining forces outlined in Table 4.1 have been summarised into six broad socio-economic contexts.

Table 4.3: The impact of structural changes on linkage formation in the Apartheid and post-Apartheid periods

The socio-economic contexts in which linkages arise	The effectiveness of this linkage mechanism under Apartheid	The ineffectiveness of this linkage mechanism in the post-Apartheid period
1 State capabilities and cooperation with the private sector	<p>As suggested by Freund (2013), the Apartheid state developed sophisticated developmental capabilities – for the benefit of the white population only. These capabilities included setting up very successful state-owned enterprises (SoEs) such as Iscor, Eskom and Armscor. It also entailed using official state commissions of inquiry to effectively plan the next phase of economic development. Employers also formed powerful industry associations and collaborated with the Apartheid system to promote growth to the benefit of white society. In the ET and innovation system, the state was pro-active in establishing a sufficient technological basis for on-going growth through the establishment of several new universities, technikons, colleges and science councils. It made extensive use of the apprenticeship system, as well introducing the cooperative learning model of the former technikons – which required para-professionals to find an industry sponsor and undergo a significant period of practical training.</p>	<p>The post-Apartheid state in the first decade proved itself very capable in producing excellent and progressive legislation, including a liberal constitution and labour market regime. However, it proved itself less competent in implementing plans, and turned to bureaucratic compliance measures to give the impression of implementation. It also ignored the task of maintenance of key state infrastructure – a problem which is now negatively affecting economic growth. It also was unable to control the rise of crony capitalism, with the arms deal scandal of the late 1990s flagging the start of the phenomenon of state capture. The Zuma presidency extended state capture to new heights. The ultimate result of this has been the collapse of the state in performing many of its main functions such as energy, rail, water and sewage services. Most of the state's public ET institutions are trapped in this decline – they are unable to steer the system towards greater effectiveness and coherence, including building linkages and getting graduates out of institutions and into jobs (Rogan et al. 2015; Cosser et al. 2012). This critical state function has all but collapsed.</p> <p>The private sector has in most part opted out of participating in building linkages and cooperating with public ET institutions such as the colleges, SETAs and universities of technology (NSA 2018).</p>
2 Class and race privilege	<p>Access to education was only possible for the ruling elites during the early colonial period.</p> <p>In the twentieth century, segregation and Apartheid policies extended access to schooling to all white families; it also offered artisanal training in colleges to white workers from the 1920s onwards. After 1948, the state and private firms cooperated so that a highly structured link was established for white graduates to enter the world of work – through preferential employment of white workers, apprenticeship contracts, technikon internships, company bursaries, with state-owned enterprises providing significant access to young white employees.</p> <p>Education and training was denied to blacks in 'white' South Africa until the late-Apartheid reforms of the 1980s; provision in the homeland territories was minimal.</p> <p>The exceptionally small African middle class under Apartheid was prohibited in the 1950s from studying in established institutions such as the urban universities, technikons and colleges. Thereafter, formal education came to a very small group of black students only through the efforts of the churches and some homeland institutions such as Fort Hare.</p>	<p>The structured links between education and employment have all but collapsed.</p> <p>Whilst access by black students to primary and secondary schooling has significantly improved since 1994, there are serious issues about on-going resource inequalities between black and white schools, and the quality of provision in the former has suffered extensively because of these historical limitations. Black access to universities has improved, although less dramatically. On the surface, enrolments look significantly changed, with 75% of students enrolled in higher education being black. However, this enrolment constitutes only a 20% participation rate for Africans aged 20 to 24 in higher education, whereas for whites it remains high at 57% (Essop 2020: 23). After graduation, almost a third of African graduates struggle to find employment, whereas white graduates succeed more easily and more quickly. Class and racial stratification in the education and labour markets continue long after the formal annulment of segregationist policies in 1994.</p> <p>The very favourable linkages for white students in colleges – employment was guaranteed for most white students after graduation – dramatically changed after 1994. In this later period, 90% of college students are now African. Most study fulltime with no employer sponsorship. They have voluntarily enrolled at the colleges without any indication of future reemployment. Many do not get jobs after graduation.</p>

The socio-economic contexts in which linkages arise	The effectiveness of this linkage mechanism under Apartheid	The ineffectiveness of this linkage mechanism in the post-Apartheid period
3 The impact of an undiversified and narrow industrial base	The Apartheid economy underwent a narrow industrialisation, prioritising natural resource extraction. This led to the emergence of a 'minerals-energy complex' (MEC) with a few key capital-intensive industries prioritised such as mining, energy and chemicals. Import-substitution policies failed to grow a wider, more diversified industrial base. The shift to financialisation and neoliberal policies in the late-Apartheid reform era of the 1980s consolidated these trends, creating a new powerful entity – a 'minerals-energy-finance complex' (Ashman 2015). All of this triggered the start of deindustrialisation in many industries, including furniture. A more diversified manufacturing sector, along with its mass employment and upskilling potential failed to occur.	The post-Apartheid economy has struggled to overcome its inherited structural constraints, such as the minerals curse and low levels of value-added manufacturing exports. It continues to rely on the export of natural resources as the central pillar of the economy – alongside financialisation. Growth did take place in the early 2000s during the Mbeki boom, but this was driven by high commodity prices and a consumption boom triggered by the large-scale introduction of social grants (Altman & Mayer 2003) – not because of the emergence of new productive capacity and new production capabilities acquired through industrial upgrading, upskilling and the introduction of new technologies.
5 Geospatial social stratification	The racially stratified geospatial landscape which emerged from colonial land conquest and the 1936 <i>Land Act</i> and the 1950 <i>Group Areas Act</i> provided the foundation for the evolution of South Africa's racial capitalism – that being cheap labour. Significant prosperity came to white citizens as a consequence of this highly exploitative employment model.	However, this racially stratified geospatial landscape is perhaps the most destructive and intractable of Apartheid's imposed policies. The processes of exclusion emanating from this land allocation are by far the most damaging brake on economic growth. No amount of social engineering by the state has been able to resolve this deep schism in South African society between those who live, work and play in the centre of towns and cities, and those who reside far away from the centres of employment and learning. Creating any form of linkage between firms and ET institutions is almost impossible in this environment.
6 The presence/lack of brokerage activities using quangos and intermediaries	The Apartheid state launched many highly effective quangos to assist in performing state functions 'at a distance' unincumbered by the usual bureaucracy and slow pace of traditional government. These included the CSIR, HSRC, IDC, the National Training and Marketing Boards. Some of these bodies performed intermediation functions – although the concept was not in use in the Apartheid period. These bodies did not serve the entire citizenry though, but rather, the minority white community.	The post-Apartheid government has introduced hundreds of quangos – the 21 SETAs, 54 small business development agencies (SEDAs), and over 100 technology incubators being very good examples. However, in almost all instances, these quangos are bureaucratic, inefficient and compliance driven. They do not function in a relational way (as intermediaries should) with other actors like firms and local municipalities to promote economic growth and social development. Education-economy linkages are unlikely to be built by these ineffective structures.

The discussion now shifts to a second macro-level contextual focus, this time on the evolution of the furniture industry both globally and locally (Chapter Five). Thereafter, the discussion shifts dramatically to a micro- and meso-focus on one case study of the furniture industry in South Africa, that being the Southern Cape furniture cluster (Chapters Six to Eight). This macro-meso-micro structuring of the book is a required component of the LIPS research methodology as explained in Chapter Two.

CHAPTER FIVE

Furniture production: Global trends, local governance dynamics

This chapter presents a second macro contextual overview within which to situate the case study on furniture manufacturing. It focuses on the core developments and trends in furniture industries both globally and locally. The most significant of these are the increasing importance of design and digitalisation in furniture manufacture. The discussion also outlines five product market segments which differentiate modes of fabrication in the sector.

The discussion then shifts to the governance of the sector. This is because governance is the realm in which old problems and new developments – such as digitalisation and design – are identified and acted upon. Such governance takes three forms. First, it entails looking at the complex coordination dynamics across four interlinked GVCs – the forestry, timber, furniture and retail sectors. Second, it also involves examining the role of lead firm Steinhoff in the internal governance of the furniture ecosystem in the Southern Cape and South Africa more broadly. And finally, it entails examining the state's industrial policy initiatives aimed at strengthening the furniture sector.

THE GLOBAL FURNITURE INDUSTRY

Major changes have occurred in the global furniture market over the past three decades. Perhaps the most dramatic has been the entrance of new producers and the consequent transformation of the world furniture market into two opposite poles: the first pole being the old furniture capitals of Europe represented by design-intensive, high-end bespoke manufacturing using hardwoods and the second located in East and Southeast Asia (primarily China, Vietnam and Indonesia) and characterised by low-cost standardised goods using chipboard and surface veneers (Kaplinsky et al. 2009). These new players in Southeast Asia have been able to enter the global furniture market mainly through cost competitiveness, and through this, they have been able to capture market share from the dominant players in Europe and the Americas. However, the power relations between countries remain unequal, with a polarisation between higher quality/higher price and low quality/low price emerging between the developed furniture economies and the new players (DTI 2008).

In most Anglo-Saxon countries such as the USA, the United Kingdom (UK), Canada and South Africa (countries with strong furniture sectors in the past), employment and output fell dramatically since the advent of competition from Southeast Asia's low-cost, low-quality furniture manufacturers. Only the USA has succeeded in revitalising its furniture and textiles industries, largely through a major shift towards lean manufacturing, which forced uncompetitive firms to close (Drayse 2008; Walcott 2014). The UK and South Africa have continued to see the decline of their furniture industries.

Table 5.1 highlights the remarkable rise of China in the past 20 years. Part of China's success, beyond the comparative advantage of low-cost labour, is the transformation of global transportation. Previously, long distances to markets and high exposure to damage during transportation placed strong limits on the extent to which furniture became a globally traded good. This scenario has changed in the past two to three decades with containerisation, improvements in the efficiency of logistics and distribution, as well as the flat-pack and ready-to-assemble products first promoted by the Danish IKEA furniture manufacturer and retailer. These improvements have allowed long-haul exports and imports of furniture products to destinations such as the US, Europe and East and Southeast Asia – with minimal damage to stock on route. China's leap from not being a player in the global furniture trade in 1984, to number nine of top exporters in 1994, to number one exporter in 2004 has been nothing short of remarkable.

Table 5.1: Major world exporters of furniture, 1984, 1994, 2004 (values shown are in current US dollars and represent furniture exports to all countries)

1984		1994		2004	
Country	\$ Billions	Country	\$ Billions	Country	\$ Billions
Italy	1.98	Italy	6.67	China	12.67
East Germany	1.67	Germany	3.99	Italy	11.34
Taiwan	0.77	United States	3.45	Germany	7.57
United States	0.63	Canada	2.16	Canada	5.46
Denmark	0.58	Taiwan	1.84	United States	5.10
France	0.57	Denmark	1.78	Poland	4.97
Belgium-Luxembourg	0.55	France	1.76	Mexico	4.20
Sweden	0.48	Belgium-Luxembourg	1.50	France	3.01
Canada	0.42	China	1.54	Denmark	2.74
United Kingdom	0.38	United Kingdom	1.10	Belgium	2.19
World Totals	10.62		37.67		85.64

Source: Scott (2006: 1528).

Chinese furniture imports into America in the 1990s and early 2000s reached 49% of all furniture sales – an incredible penetration of a market that was once largely insular and local. But with unrelenting price competition and falling unit prices, many American and Canadian firms were severely affected, some closing shop whilst others sought routes out of the low-cost, standardised furniture markets (Scott 2006).

DRAMATIC CHANGES FACE THE SOUTH AFRICAN FURNITURE INDUSTRY

The discussion which follows gives a brief background to the furniture industry in South Africa since the 1990s. A key problem is the onslaught of cheap Southeast Asian competition. But other problems had already beset the industry prior to the entry of the new Southeast Asian players. Kaplinsky and Manning characterise the industry in the 1990s as being dominated by large firms and a high degree of concentration in terms of corporate ownership. South African manufacturing in general had a high degree of concentration, with the six largest furniture manufacturing conglomerates in 1992 owning approximately 87% of issued capital on the Johannesburg Stock Exchange (Kaplinsky & Manning 1998: 142). This dominance of the furniture industry by a few large firms has continued into the present period. Historically, this concentration has affected average plant size, with medium to large firms dominating the formal sector in terms of output, and thereby depriving South Africa of the historical route evolved in Europe and Southeast Asia whereby most furniture sectors are run by small family-owned, highly skilled artisanal firms using the new digital technologies.

Kaplinsky et al. (2003) make the same point about the dominance of large firms in furniture retailing – the top three retailers in 1996 captured 60% of furniture sales. The chain stores that emerged during this period included: Ellerines, Joshua Doore, the Lewis Group, OK Bazaars/Hyperama, Beares and Morkels, to mention only the historically large players in the furniture retailing sector. These players introduced standardised mass-produced furniture items in high volumes across South Africa (Kaplinsky & Manning 1998). In addition, two of the top conglomerates had interests that spanned forestry, paper and pulp production, furniture manufacturing and retailing (Kaplinsky et al. 2003: 15).

The sector in the past three decades has faced other problems beyond those of concentrated ownership, an appreciating exchange rate and intense East and Southeast Asian competition. Morris and Jackson (2002: 15, 18) and the DTI (2008: 10-11) both argue that productivity and competitiveness in the sector declined in the late 1990s and 2000s. They attribute this decline to reduced investments in new technology and skilled labour, and insignificant design capabilities in the national innovation system, especially in the former technikons (now termed universities of technology). The R&D that was needed to support the revival of the industry was almost non-existent. As Morris and Jackson explain, decreased productivity and competitiveness measures are most likely due to firms in the sector not optimising their resources and processes. The productivity losses may even have suggested that firms were in the process of downgrading (Morris & Jackson 2002: 44) – what Tregenna (2013) identified in Chapter Four as ‘premature industrialisation’.

Several other constraints plagued the industry during this period. For example, even though flatpack technologies had been evolving since the 1990s and should have assisted global exports, South Africa was still too far away from the main export markets to be able to effectively compete with other furniture sectors closer to the main consumer locales. Shipping costs were still too high, even with the advantages offered by flatpack containerisation.

Furthermore, the monopolistic conditions surrounding the three dominant saw-milling firms meant that sawmillers faced a sellers' – rather than a buyers' market. In a sellers' market, demand is high and supply low. Hence, there is fierce competition for limited timber stocks. Consequently, these sawmills were not responsive to furniture manufacturers' needs for higher quality sawn timber at more favourable prices. The wealthier paper and pulp industry was able to pay higher prices for woods in demand and these were steered in their direction (Kaplinsky et al. 2003: 22–23).

Another structural constraint was that, although South Africa's middle class had grown significantly since 1994 with the advent of democracy, the increased purchasing power for home ownership and furniture sales was still restricted. The new middle class, alongside a sizeable salaried working class, aspired to affordable furniture sold at large chain stores. They did not yet constitute a large market for the higher value-added furniture market segments. Moreover, even though South Africa exports furniture to neighbouring countries in Africa, these were and remain low-income countries and the demand continued to be for low-cost, standardised furniture – not expensive bespoke designs (Vukovic et al. 2010).

Retrenchment and unemployment in the sector has become a major problem, especially since the global financial crisis of 2008. Employment numbers between 1994 and 2007 remained relatively stable and above 40 000 nationally. However, with the impact of the global financial crisis in 2008, alongside the earlier decline of exports since 2002, employment figures begin to plummet from 2008 onwards – from 38 464 in 2008 to 28 608 in 2017 (TIPS 2020b).

Sectoral growth has also remained stagnant since the late 2000s. The furniture sector contributed ZAR11.1 billion to GDP in 2015, slightly up from ZAR10.8 billion in 2010. This figure amounts to a contribution of about 1% to manufacturing GDP, and 1.1% to manufacturing employment (DTI 2017: 134; 2018: 136). However, this growth trajectory can be summed up as flat with a slow decline from 2013 onwards (DTI 2017: 134). Alongside sluggish growth, import penetration has been increasing. It has risen from 21% in 2009 to 32% in 2015.

Table 5.2: Imports and exports, furniture sector, 2011–2015 (in millions of Rands)

	2011	2012	2013	2014	2015
Exports	5 503	6 779	7 801	5 744	5 800
Imports	5 584	5 239	5 450	8 296	9 893
Trade balance	-61	1 480	2 351	-2 552	-4 097

Source: DTI (2017).

This contextual backdrop provides several insights into the path-dependent constraints which make change in the South African furniture industry and its underpinning innovation system difficult. First, the devastating impact of low-cost competition from China and other East Asian nations has caused the demise of many South African mass production furniture firms.

Second, the end of Apartheid and the dawn of a new democratic era has led to many dramatic economic changes, some of which have punished low-tech industries, such as clothing and furniture, more harshly than other sectors. These industries suffered the most when import-substitution incentives and subsidies were withdrawn, exposing these low-tech sectors to the far more competitively priced mass production goods of East and Southeast Asian countries. Trade liberalisation was imposed without much discussion about the countervailing measures needed to protect low-tech sectors from destructive competition from abroad. Many firms in these sectors were forced to close and thousands of jobs were lost. Exports from the South African furniture sector dipped dramatically in the late-1990s/early 2000's because of these changes.

Third, as Chapters Six to Eight will elaborate, Apartheid's racial policies continue to have a negative impact long after their legislative disbandment. The country and the furniture sector continue to be plagued by skill shortages in critical areas such as cabinet making artisans, digital manufacturing technicians and furniture designers. Employment remains characterised by highly adversarial relations on the ground even though South Africa has adopted one of the most progressive labour law and employment dispensations in the world. The sectoral production regimes adopted during Apartheid have not changed significantly and, in the South African furniture industry, African workers continue to dominate the unskilled and semi-skilled categories, most firm owners remain white with little training or upskilling taking place. Technologies remain the same as fifty years ago. Regrettably, little has changed.

TRENDS IN THE GLOBAL FURNITURE INDUSTRY

The discussion now shifts to consider three important trends in the international furniture sector. These are: (1) the digitalisation of production; (2) the rise of design-intensive manufacture; and (3), the consolidation of five product market segments in the industry. Each will be discussed briefly.

The digitalisation of production

Although the emergence of new actors in East and Southeast Asia have triggered massive changes in the furniture industry worldwide, the most significant development in the global market, however, has been the impact of new digital technologies on production. For many developing economies, such as South Africa, the adoption of information technology (IT) in the 1980s and its embedding in machine technology has been very slow to diffuse. These developments occurred in what is referred to as the 'third industrial revolution' in the 1980s – that witnessed the arrival of IT-driven new technologies such as Computer Numerical Control (CNC), AutoCAD (computer-aided design) software and e-commerce. This slow adoption process was largely the result of the high cost of importing these foreign technologies. This problem of falling behind technologically has continued with the advent of digitalisation and the 'fourth industrial revolution' (4IR) and its dramatic enhancement of many of the IT-based technologies developed in the 1980s.

For example, additive manufacturing and 3D printing (see next section) build upon the capabilities offered to furniture manufacturing by CNC and AutoCAD technologies. Again, the diffusion of these digital technologies has been extremely limited in South Africa to date (Kyobe 2011).

However, many pundits of digitalisation argue that the new technologies can assist countries and sectors struggling with the task of late upgrading (Schwab 2016) – such as South Africa’s furniture industry. The predictions of the future impact of the 4IR on production and the world of work are perhaps the most controversial aspects, with dramatic claims about change in the way goods will be produced in the future. One major claim is the reduction in scale of global supply chains as they become increasingly digitised, automated, tracked in real time and perhaps even obviated through 3D printing. Another potential change is the profitable return to small-scale artisanal production, enabled by additive manufacturing (Murmura & Bravi 2018).

Clearly, digitalisation is a major technological phenomenon to have impacted the manufacturing sector in general. The next section describes the nature and content of digital production relevant to the furniture sector. It will focus upon a package of new technologies arising from the third and fourth industrial revolutions that are, to a limited extent, already diffuse in the South African furniture sector. These are:

- Additive manufacturing (including 3D printing);
- Computer numeric control (CNC) machinery;
- Computer aided design (CAD) and manufacturing (CAM) softwares; and
- E-commerce and the use of social media for sales and marketing purposes.

Additive manufacturing

Additive manufacturing (AM) is a key component of the new 4IR technologies. According to Huang et al. (2013), AM builds up parts of a product by adding materials one layer at a time using 3D printers. It does not require the use of fixtures, cutting tools, coolants and other machines. It enables design optimisation and the production of customised parts on demand.

CAD software is another critical component of AM – although its genesis lies with the third industrial revolution in the 1980s. CAD software produces a digital file needed to outline in three-dimensional detail the object to be produced by AM so that it can control the printing/layering process. This design file is usually created on a computer. It is then sent to the 3D printer or CNC machine that responds accordingly (Huang et al. 2013). CAD technology was developed in the 1980s alongside CNC machinery, but it is now an integral part of AM as well. It privileges design and showcases what is made possible on the shop floor by the digitalisation of production. It is within this CAD technology that all the precision in fabrication is now located – if the CAD designs are wrong even in the slightest way, the resulting prototype will be flawed.

Other advantages of AM are that there is little or no waste, mainly due to the layering process, that is distinct from the subtractive process of conventional manufacturing,

that cuts away at a raw material (e.g., wood), producing excess waste comprising reject material. With wood, this waste can amount to about 50% of the timber log (Aydin 2015: 338). AM also drastically reduces the duration of production because of the speed of 3D printers – a process that could take weeks in conventional manufacturing. For this reason, AM and 3D printing are used primarily for rapid production of prototypes – demonstrations of the envisaged product's attractiveness and functionality prior to a fuller rollout. Prototyping allows for iterative improvements of the product – another strength of AM (Aydin 2015).

Continuous numeric control

As indicated earlier, the genesis of CNC technology lies with the third industrial revolution of the 1980s. However, it now forms a highly complementary component of the new technologies emerging in furniture fabrication entailing digital manufacturing. Digital CNC technology can be a complement to 3D printing, CAD-CAM software systems and additive manufacturing. CNC machines were introduced into South Africa in the 1980s, largely in metal fabrication, but with some penetration into the furniture industry as well. There were limits to the effective diffusion of CNC in furniture production: allegedly the high cost of the first machines, and the need for a skilled IT technician to manage the technology (Landscheidt & Kans 2016). The slow diffusion of CNC technology in furniture manufacturing contrasts sharply with its spread in, for example, the forestry, timber, paper and pulp industries that are all relatively capital intensive and automated. One additional reason for the difference is that furniture factories usually work only one shift, whereas CNC is only really optimised if it works closer to 24 hours a day repeating high-volume tasks.

CNC machines are controlled by an internal electronic device, integrated in the machine, driving all movements and functions during the fabrication process. These machines were rapidly adapted from the 1980s onwards as a means to automate production and replace the operator-driven production lines characterising the earlier industrial era. Prior to the 1980s, the operator was responsible for the quality of the final product, with quality being determined by manual loading of materials into the machine, monitoring for error, and managing processing speed. The introduction of CNC machines inverted this relationship, with the machine now controlling material handling, quality, monitoring and speed of production (Lotti et al. 2019).

Other advantages offered by CNC machines over human operators is precision fabrication that ensures uniform quality in every piece made by eliminating human operators' inclinations to periodic error. CNC machines also reduce the down time on the shop floor – time 'wasted' while manual movements are made, tools changed and raw materials repositioned (Lotti et al. 2019).

One major feature of the CNC machine is its capacity for attaining large production volumes quickly with standardised quality finishes throughout. In this sense, the digital CNC machine is a diametric opposite of the 3D printer, that reduces the necessity for economies of scale and privileges a return to micro-level production of complete products.

E-commerce

E-commerce has evolved considerably through the two substantive waves of internet development over the past three decades. The first phase was flagged Web 1.0 and entailed establishing the internet as a ubiquitous tool in almost every firm and home, with basic search engines and office business process software automating spread sheets and the production of documentation – making repetitive and time-consuming home and office tasks exceptionally easy to accomplish. The diffusion of the internet was enhanced with the growth of the mobile phone industry, with each mobile cell phone now a miniature computer able to access internet services and undertake e-commerce. Web 2.0 characterises the current era of software applications and platform services using the internet, such as Facebook, Twitter, YouTube and Amazon. The online business services now available to firms are massive, with impressive and easy-to-use e-commerce interfaces.

E-commerce technologies allow firms to build up databases of differing segments of customers who are interested in the development of basic, intermediate and premium products. With over 500 million members, as is the case with Facebook, many of these new social media technologies have a massive reach and can assist in the development of new markets (Bettiol et al. 2011). E-commerce capabilities confirm Lundvall's important theoretical proposition that incremental innovation in the current period is established in part through the interaction of users and producers, particularly the 'feedback-loops' producers receive from their online interactions with clients about product improvement (Lundvall 1985).

The rise of design-intensive manufacture

Chapter Two defined 'design' as an important component of a firm's technological and engineering capabilities. However, in the furniture industry, design has become even more important in recent times. This situation has arisen, first, because it is an important complement of digital manufacturing capabilities and second, because design has become very significant also for aesthetic and 'lifestyle' reasons. The triggers for this change are several, the most significant being the shift to 'lifestyle retailing'. Leslie and Reimer (2003) define this phenomenon as when emergent lifestyle stores combine different kinds of products – for example, clothing, furniture and music. These marketing and brand initiatives are trying to sell a whole 'way of life' across different product lines, building branding in furniture in a way that was never present in previous manufacturing eras. This development highlights the current influence of 'fashion' in the production of furniture. Increasingly, furniture retailers have been attempting to accelerate the fashion cycle in furniture so that particular products become obsolete, to be replaced by new 'lifestyle' furniture strongly influenced by the fashion and lifestyle trades.

According to Hatch (2013), firms acquire design expertise in two major ways: either in-house through the structuring of internal design departments, or externally, through the purchase of design expertise from consultant firms. Stable employment relations, in the form of an in-house design team, 'foster a work organisation that facilitates face-to-

face, interactive, group-based learning that is conducive to synthetic knowledge creation' (Hatch 2013: 112–113). Moreover, these long-term practices encourage the development of 'a specific design expertise that is characterised by an in-depth understanding of industrial engineering criteria and underpins incremental product development' (Hatch 2013: 112).

One of the most important advantages of having an in-house design team is the ability to retain the link between design and shop-floor production processes. The close proximity of design to other processes of product development creates a number of synergies – the most important being the formation of a natural internal 'think-tank' on how to continuously improve the product (Hatch 2013). Second, such spatial proximity between design, engineering and other elements of the production process, according to Hatch's own research on the Canadian office furniture segment, is found to support the incremental, group-based, on-the-job learning process that is critical to innovation in advanced manufacturing. A third observation of the benefits of having in-house teams is that it is highly suited to the process of building incremental rather than radical product enhancement (Hatch 2013). The internal design, engineering and artisanal team can easily respond to the needs and changing tastes of clients – the buyers and users of the product made.

Product market segments

Another important trend in furniture production is the emergence of several discrete product market segments. The new digital and design technologies play an important role in this differentiation. Such differentiation of production systems often is not identified by the dominant policy prescriptions and economic analyses of the day that tend to advocate one-size-fits-all production solutions across an entire sector. However, from a learning and capabilities perspective, this approach is a major problem. This is because these product segments each require differing combinations of technology, technological and design capabilities, producer-consumer interactions, skilled personnel and sales and marketing strategies. Indeed, these contrasting variables characterise a highly diverse furniture economy which requires multiple policy solutions rather than singular strategies.

As indicated earlier, divergence arises partly from a technology-induced divide between mass production of standardised basic wood furniture on the one hand, and handcrafted production based upon traditional designs and locally evolved craft capabilities on the other (Pye 2002). These technological differences insert segments into different points along the furniture value chain, with each position in the chain offering different possibilities for economic growth and upgrading. Mass-produced items tend to compete on the basis of cost, with the lowest prices winning comparative advantage (Walcott 2014). In contrast, those segments that focus on quality and design (bespoke furniture) are more conducive to upgrading (Mitsuhashi 2006). Bespoke production is facilitated by small high-tech firms who can 'engage in highly competitive marketing strategies based upon insistent differentiation of output' (Scott 2006: 326). These bespoke firms concentrate on making small and specialised batches based on quality, value and design intensity.

Mass production and bespoke manufacturing are the two most known furniture segments. However, there are three other important segments that require some elaboration. Mass customisation is a new addition to the above variety of production systems available within the furniture industry. It is premised on the 'customisation' of mass production. It is a trend towards the production and distribution of individually customised goods and services for mass markets globally. Mass customisation is strongest in segments such as upholstery, kitchen and office furniture, that all lend themselves to smaller batch production, based upon customers' needs and tastes. Elements of individual customer choice can be added to the mass production of standardised goods – such as couches and kitchen units – creating a seemingly contradictory combination of standardisation and customer choice. These production possibilities are being exponentially expanded by the new digital technologies now available (Ollonqvist et al. 2011).

The 'makers' movement is not strictly a new production system because it in part entails a cultural aspiration to return to older forms of production – artisanal or craft – generating products with skilled 'makers' using many of the new technologies available such as CNC machinery, digital design software, 3D printing and a range of new materials and fabrics not available to manufacturers in previous production eras. Maker firms are micro enterprises often entailing a sole craftsman and a few helpers. Many makers see a return to a 'small is beautiful' ethos, as well as production methods that are healthier and more natural, for example, less use of toxic lacquers (Wolf-Powers et al. 2016).

The 'contract furniture' sector is often referred to as institutional furniture because it comprises the building of once-off large-scale furniture installations commissioned by government or corporations to decorate large buildings. These are highly customised by the client and are uniquely designed for specific circumstances. They are completed by a few of the more entrepreneurial firms in the bespoke, mass customisation and maker categories. These 'dual mode' firms manufacture contract furniture alongside their other furniture work. Contract furniture manufacturers in the Southern Cape have benefited from the lucrative construction industry projects that have taken place since the growth of the financial sector and its investment in the real estate industry in George and Kynsna over the past two decades. This investment has entailed largescale once-off wooden installations in hotels, retirement estates, office complexes and holiday homes for very wealthy clients.

Differing capabilities needed in differing furniture segments

The five production systems described above create a high degree of manufacturing diversity for what normally is considered a homogenous low-skill, low-tech industry. On the one hand, mass production globally is characterised by economies of scale and the manufacture of high volumes of standardised low-cost goods. The workforce is predominantly semi-skilled, with key roles played by a few CNC technicians who ensure the smooth operations of the CNC technology. Qualified artisans are used mainly in supervisory positions and are not essential to the production process. Mass production furniture firms in South Africa are usually medium to large in size and comprised of semi-skilled workers. However, in the Southern Cape, there are also several small firms

trying to survive, as the case studies in Chapter Six will show. Most mass production firms tend to use large retailers to sell their wares.

The bespoke manufacturing process is quite different. It is based upon the high skills of designers and cabinetmaker-artisans together with their technical and creative proficiency. Output is often customised to a client's specific requirements, and the products become 'once-off' pieces. In some cases, the bespoke firm will produce several of these pieces in short runs, displaying them in their small showrooms. Bespoke firms tend to sell their products on site, through small independent retailers, or directly to the client via e-commerce. Most bespoke firms are small and family owned. However, unlike their European equivalents, South African bespoke firms cannot afford (or are not prepared to take the risk) to purchase CNC technology, and so are heavily reliant on hand tools, most of which have characterised furniture making for several decades – if not centuries. Their comparative advantage is ownership of the tacit knowledge needed to make beautiful high-end hardwood furniture pieces for wealthy clients.

Mass customisation is a mix of the two ideal types of production described above. It requires mass production's ability to massify output using CNC and other automated machinery, but it also requires bespoke's ability to be creative in designing effective modular pieces of office or lounge furniture that clients can help to shape through user-producer interactions. This phenomenon is still an emergent one and its impact has not been experienced yet in South Africa, but it will grow as a trend, along with the greater use of e-commerce as a customisation tool. Similarly, the makers movement has not grown into a significant player in South Africa's furniture sector as yet. However, its production system is similar to that of bespoke firms, with some firms characterised by a greater ability to use digital technologies such as CNC, computer-aided design software, 3D printing, and e-commerce. A major part of the philosophy of the makers movement is to use the new technologies to transform manufacturing and insert it into more egalitarian work relations that are concerned about environmental sustainability and the importance of craftsmanship (De Beer et al. 2017).

The contract furniture mode is not driven by distinct forms of production but co-exists within mass production or bespoke firms who use a dual mode of production – whereby their primary task is either bespoke or mass production, but secondarily, they also benefit from the sporadic opportunities that institutional furniture contracts generate from government, businesses or wealthy individuals.

FURNITURE SECTOR GOVERNANCE DYNAMICS

The discussion now shifts to examine the governance dynamics of the furniture sector in South Africa. Governance is the economic domain in which problems in the sector are first identified and thereafter acted upon. As indicated in Chapter Two, governance refers to the 'different mechanisms that characterise and guide the decision-making processes' within the furniture sector. It encompasses 'multiple modes of coordination' between different actors in the sector, along the value chain and within the LIPS (Cassiolato et al. 2018: 12). As Kemp et al. (2005) argue in Chapter Two, governance is about how society

ensures all participating actors in an economic sector adhere to collective decisions – through processes of deliberation, negotiation, self-regulation or through state or industry regulatory fiat. In the discussion that follows, coordination and governance are considered at three levels in this case study of the furniture industry: first, at the ‘whole-of-government’ level, comprising the attainment of horizontal coordination between national departments involved in the interlinked forestry-timber-furniture-retail value chains; second, at sectoral level, in terms of the ‘lead’ role of Steinhoff in the furniture sector; and third, at the sectoral level, in terms of the industrial policy introduced over the past 30 years to improve the economic prospects of the furniture sector.

Coordination dynamics of interlinked global GVCs

With the advent of democracy in 1994 and South Africa’s consequent re-entry into the global economy postsanctions, significant change occurred in the forestry-timber-furniture value chains. However, there was no consensus across government on the nature of these changes. On the one hand, the forestry sector was considered by DTI and other actors as a highly successful industry in terms of its growth and technological capabilities (Heyl 1990: 45). In a 2005 report commissioned by the DTI, consulting firm Genesis argued that forestry in South Africa was world-class in terms of its research and development capabilities, and it possessed a competitive advantage through its highly productive plantations that had significantly higher yields and shorter maturation cycles than similar species elsewhere, particularly for pulpwood (Genesis Analytics 2005). In fact, Genesis recommended an intensification of afforestation initiatives – largely because new planting had been in decline for many years. Following on from this report, DTI established timber as one of its priority clusters (Louw 2006).

However, the state Departments of Environmental Affairs (DEA), and Water, Agriculture and Forestry (DWAFF) – and their later restructured configurations as the DAFF (2009–2019) and DEFF (2019 onwards) – all saw forestry as a major problem in that it was a severe drain on water resources and land that could be used for alternate purposes, such as food production, new human settlements, and the inclusion of more black ‘outgrowers’ in the sector. Currently, there are over 19 000 black growers owning very small lots occupying only 43 000 out of 1.5 million hectares of plantation land across the country. This tension between growing a successful labour-absorbing employment sector versus putting its major assets (land, labour and water) to alternate uses that are less harmful to the environment was not fully resolved in the following two decades and it has led to incoherence and contradiction in cross-departmental policy formulation and coordination, impacting negatively on the furniture industry.

The central thrust of post-Apartheid forestry policy was to move away from the narrow Apartheid focus on a sustained supply of cheap wood-based products derived from the commercial forest sector, towards a more embracing concept of managing all forests (commercial and natural) for the benefit of a wider group of stakeholders – this process would include better protection of indigenous forests and end the exploitation of local hard woods, such as yellowwood. Much of this policy pillar would be focused on selling off state

forest assets through privatisation initiatives and protecting indigenous species through stronger sustainable forestry management techniques (Mayers et al. 2001).

Privatisation

The decision to privatise South Africa's state-owned plantations was not entirely a post-1994 decision. The Apartheid government had come to the same conclusion in the 1980s and had begun the process slowly by introducing a transition to privatisation in three phases: first commercialisation, then corporatisation, and finally, full privatisation (Garforth & Mayers 2005). However, political change occurred before the Apartheid government could put privatisation into practice. With the advent of a democratically elected government and a unified single state, the former homelands' plantations became part of DWAF. In 1998 the ANC government decided to privatise both SAFCOL and the Department of Forestry's plantations in a phased process.

In 2000 seven packages of plantation assets were put up for sale through open bidding. Each package represented differing categories of plantation on a continuum from highly commercial to non-viable land. Investors were invited to bid for a 75% shareholding of each package (of which at least 10% needed to be black owned). Government retained 25% of the shares to ensure plantation land would remain in public ownership, and investors were offered the rights of use through twenty-year leases. Bethlehem (2000), a Chief Director for Forestry in the post-Apartheid government, argued that leases allowed government to make changes in land usage once the leases had expired, and allowed for public access to forests for tourism and recreation reasons, as well as enabling local communities to continue utilising non-commercial timber products for energy, housing construction and medicinal products. More importantly, leases facilitated any future land claims by dispossessed communities if any such claims arose.

A flawed process

Louw (2006) reports that this privatisation process was not smooth, with many problems along the way. Successful Competition Commission court challenges occurred to stop monopolistic control of the sawn timber industry. Clarke (2018) reports that although the process of privatising category A packages (the viable commercial plantations) went smoothly in 2000–2005, the process stalled thereafter, and little progress has been made with the transfer of the remaining assets in categories B and C (the less- and non-viable plantation land). Today, SAFCOL continues to manage 18 prime plantation assets in Mpumalanga, Limpopo and KwaZulu-Natal across a land area of 187 320 hectares. It continues to own sawmills and to produce timber products (Clarke 2018: 12).

Another problem which emerged was a shrinkage in the supply of timber and a serious decline in afforestation. A reconsideration of the privatisation strategy was triggered in 2008 when the Western Cape forestry industry petitioned national government to reconsider decommissioning about 22 000 hectares of forestry land in the Southern Cape. This decommissioning request sought to release these 22 000 hectares from the privatisation process, enabling the Western Cape forestry industry to start the process of

replanting new pine trees. Cabinet agreed to this request, but the decision was followed by seven years of inaction and inertia by government, partly because of a lack of budget, resulting in a long-term replanting backlog and the loss of some half a million cubic metres of wood increment (Stehle 2013).

Government chose to act belatedly in 2014 and the Industrial Development Corporation (IDC) was commissioned to undertake a study on replanting practices in national forests and make recommendations. Central to the findings of this study was a proposal to allow the replanting of pine trees in what had now become relatively empty plantations leased to private corporations for a period of 20 years. In 2015, the Southern Cape based forestry and sawmilling company MTO was given permission to begin replanting unplanted areas (Stehle 2013).

More broadly, government has been forced to partially reverse its initial privatisation policy of leasing land and has agreed to allow the commercial replanting of trees. One of the unforeseen developments with the privatisation policy has been the rapid harvesting of trees (many under-age) by private leaseholders and the export of these logs, sometimes in unprocessed form, to overseas markets. The result of all these processes has led to a widespread shortage of timber in the country. In addition, sawmills have faced the threat of closing because the timber source upon which they were dependent was in danger of ceasing production by 2020 (Stehle 2013).

Managing conflicting policy agendas

A key issue in the governance dynamics of the furniture industry is the high degree of inter-dependency between several overlapping sectors and value chains: this inter-dependence starts with the forestry, timber and paper and pulp sectors upstream from furniture production, but also includes government policies on the environment, agriculture, water, land and labour. The efficient supply of transportation options and energy supply is also critical. Production opportunities in furniture clusters or ecosystems are not independent of this web of underpinning factors. Garforth and Mayers (2005) write of the complexities of managing many of these inter-dependent policy objectives. One policy objective – privatisation – may conflict with the need articulated by furniture manufacturers for cheap and reliable flows of timber inputs (as was the case in the Apartheid past).

Indeed, many of these conflicts are now manifest in the Southern Cape region. The declines in forestry output, particularly as experienced by furniture manufacturers, is a good example of the complexity of governance across several overlapping value chains. In addition, this case illustrates government's extremely poor cross-departmental coordination capabilities and its inability to foresee problems in its rather blunt application of policy tools to balance the new societal demands that stretch across forestry and the need for competitively priced timber, access to land, better management of scarce water supplies, and sustainable policies that protect the environment.

Mushangai (2019), in a doctoral thesis titled 'Research and Development in the South African Forestry Sector', has outlined the poor levels of coordination across government

departments regarding issues affecting the forestry sector. For example, he specifically focuses on land reform, and notes that these programmes are changing the ownership structure of plantation forestry, thus bringing uncertainties that are disincentives to investment in the sector. The land and agrarian reforms are reducing the amount of land formerly allocated to forestry under Apartheid, as some of the small firms in beneficiary communities are opting out of forestry into agriculture. The community and small firm beneficiaries of the land reform programmes lack the requisite skills to embark on large-scale commercial plantation forestry. There are fears, therefore, that in the absence of capacity among small enterprises that the downstream processing and manufacturing activities of the value chain will be negatively affected.

The above discussion suggests that it is primarily the South African state's weak inter-departmental coordination capabilities that have led to the intensification of already existent problems in the furniture sector. Each of the key government departments has worked in silos informed by discrete mandates – none of which can resolve on their own the complexities of intersecting value chains, leading to contradictory policy outcomes that were not foreseen by the original policy architects. These dynamics have been exacerbated by the governance dynamics imposed on the sector by the lead firm Steinhoff.

Lead firm governance dynamics

The state is not the only coordination and governance actor in the economy – so too are the lead firms in each sector. GVC and ecosystem research argues that the lead firm within a collective production environment needs to pay attention to issues beyond its own individual interests, for example, how to align the different and often diverse internal actors supplying the complementary offerings towards accomplishing the final product. In most cases, it is the lead firm that plays this governance and alignment role in the chain collective (Gereffi & Fernandez-Stark 2011). Gereffi (1999) suggests that the role of the lead firm is usually performed by large multinational enterprises and/or large domestic corporations. Buyer-driven value chains such as those that characterise furniture production are normally headed by large retailers or branded manufacturers with global reach who set up decentralised production in developing countries. These buyer-driven chains are usually found in more labour-intensive industries such as garments, footwear and furniture (Gereffi & Fernandez-Stark 2011). The responsibility of these lead firms in the governance and coordination of GVCs focuses largely on determining key production parameters – for example, deciding the location of both high value activities such as design and R&D, and production activities (most often offshored to low-wage economies). Lead firms also put pressure on suppliers to innovate to meet new quality standards and may (or may not) provide support to suppliers to meet these new production demands. The lead firm also plays a major role in deciding upon upgrading activities along the chain. Upgrading refers to the capacity of firms to make better products more efficiently, entailing greater value-adding in production (Fagerberg et al. 2018; Gereffi 1999; Kaplinsky 2004; Pietrobelli & Rabellotti 2006; Pietrobelli & Staritz 2017).

Steinhoff's predatory role

In the South African furniture industry, Steinhoff, the largest retailer in the sector, has been the lead firm. The history of Steinhoff goes back to the early 1990s. In this period, Bruno Steinhoff, founder and owner of the West German furniture retailer Steinhoff, entered the South African furniture market. His big break came in 1995 when he met a young accountant, Markus Jooste, working for the furniture firm Gomma Gomma, based in the former homeland of Garankuwa. Steinhoff invested in Gomma Gomma in 1997, purchasing 35% of the firm. This decision in effect launched the beginnings of Steinhoff Africa with Jooste as chief executive officer. The new company was listed on the Johannesburg Stock Exchange in September 1998 – joining the European and South African assets into what eventually became the second largest furniture corporation in the world after IKEA (Naudé et al. 2018; Rose 2018; Styan 2018).

In the next two decades following this listing, Jooste embarked on the mass purchasing of South African furniture manufacturing and retailing firms, most often when they were facing financial difficulties. For example, Jooste bought Pat Cornick and AFCOL (that included the popular Sealy Posturepedic mattresses and Grafton Everest lounge furniture brands). The importance of this deal was that it gave Steinhoff significant market share and manufacturing capacity in South Africa. Steinhoff continued this purchasing spree in the 2000s, buying out chipboard company PG Bison in 2004, and the KAP furniture manufacturing group in 2005 (Styan 2018: 19). The next big move was to purchase Unitrans, a transport and logistics company, thereby assisting Steinhoff in its endeavours to control the entire value chain of furniture production and consumption (Rose 2018: 77–78).

The above examples of acquisitions and 'rightsizing' undertaken by Steinhoff in South Africa and globally are not the full list of corporate malfeasance. Many purchases were entirely outside of furniture manufacturing and retail (which is the focus of this book). Nonetheless, the examples of acquisitions made by Steinhoff described above show the true nature of the firm – as a local and global leader of what Mazzucato (2013: 23) terms 'parasitic eco-systems'. One aspect of this practice was obviously Steinhoff's corrupt dealings in the sector (see below). A second aspect of this emerging 'parasitic' role has been the prioritising of the short-term interests of shareholder value and financial capital over the longer-term developmental concerns of a manufacturer in a natural resource sector. This phenomenon was taken to its extreme by Steinhoff, which made more money from the financing deals behind all its acquisitions than from actual manufacturing value-added (Rose 2018).

Many of the furniture manufacturing firms incorporated into Steinhoff through its various financial 'shenanigans' – such as the Divine Pine case studied in Chapter Six – were subsequently merged with other entities, restructured, sold or closed, adding fuel to the accusation that Steinhoff acted as a predator that sought to eliminate competition and to extract maximum rents from the forestry, timber, furniture making and retailing sectors.

Steinhoff's demise

The public exposure of Steinhoff's corrupt transactions and fraudulent accounting tactics took nearly a decade to complete, from a lone stockbroker's warning in 2009 to an investigation undertaken by De Loitte (Steinhoff's auditors) and presented to

the board in November 2017. The report highlighted a large trail of fake documents, allegations of artificially boosted profits, balance sheet manipulation, fraudulent re-evaluation of properties and a plethora of off-balance sheet companies (Rose 2018: 243–244). The evidence was now convincing and Jooste resigned from Steinhoff's board on 5 December 2017.

Jooste's resignation and the revelations of accounting fraud in the public domain led to a 90% drop in the value of Steinhoff shares. It significantly damaged the pension fund industry – 948 schemes (almost 50% of retirement funds in the country) had major exposure and investments in Steinhoff shares that were now worthless. It negatively affected many of Jooste's business colleagues who possessed Steinhoff shares and the companies in the Steinhoff group. The Southern Cape furniture LIPS emerged weaker because of these corrupt financial transactions.

Industrial policy in support of furniture manufacturing

The discussion now shifts to the governance realm of industrial policy. Indeed, the South African government has sought to restructure the industry to take into account the global trends discussed earlier – primarily through the arm of industrial policy. Such policy is the responsibility of the DTI and accordingly, it has introduced a NIPF for most sectors in the national economy. This framework, through its annual Industrial Policy Action Plans (IPAPs), has recommended five policy interventions for the furniture industry since 2007:

1. Promoting cluster formation;
2. Procurement and localisation;
3. Modernising technology;
4. Furniture design programme; and
5. Improving market access.

Intervention One: Promoting cluster formation

The idea of promoting cluster policies was first raised by the Industrial Strategy Project (ISP) in 1990 (see Joffe et al. 1995) – an initiative of Cosatu. After the advent of democracy in 1994, the DTI continued working with the ISP and launched the Industrial Cluster Initiative in 1996 with the assistance of the IDC. Twelve potential clusters were envisaged including furniture. After these early developments, the 2007 NIPF and the 2010–2013 IPAP reports re-emphasised the furniture industry as a priority for cluster development in Gauteng, KwaZulu-Natal and the Western Cape.

In addition, the DTI commissioned the CSIR to investigate the establishment of a furniture manufacturing hub or ecosystem, that would incorporate a business incubator and shared manufacturing facilities to deliver a comprehensive package of business development support services to small furniture manufacturers. A final report was submitted to the DTI in 2016 (DTI 2018). However, progress on the idea of a hub appears to have been collapsed into the more recent DTI (now the Department of Trade, Industry

and Competition [DTIC] since June 2019) policy initiative entitled the *South African Furniture Industry Master Plan* that was initiated in 2020.

Intervention Two: Procurement and localisation

In 2011 the DTI adopted a policy emphasis on localisation and passed the *Preferential Procurement Policy Framework Act* that empowered the DTI to designate specific levels of local content for various sectors and sub-sectors. Eight such sectors were initially designated, including the furniture industry – with an emphasis on institutional furniture (e.g., school desks and hospital beds) (DTI 2013).

Intervention Three: Modernising technology

The 2013–2016 IPAP included furniture production as part of the forward linkages of the agro-processing value chain, particularly because of its dependence upon a stable supply of high-quality timbers produced locally, but also because of the biomass waste from logging, timber processes and furniture production. Such biomass can be used for the development of other bio-engineered products such as cellulose and lignin – an extract from trees used for many industrial applications including as a glue in plywood and in the manufacture of plastics. An agro-processing financial support scheme was introduced in this period, and it enabled furniture producers to apply for grants to upgrade machinery and technology and, in so doing, improve productivity and competitiveness. The scheme offered ZAR20 million over a 2-year investment period (DTI 2013: 6).

Intervention Four: Furniture design programme

This programme sought to ‘support skills development in the sector, particularly high-level design skills that would help address market failures, encourage specialisation and improve productivity’ (DTI 2013: 7). The programme consisted of a furniture design course run by the DTI’s Furntech incubator and a furniture design competition with architecture and industrial design students participating from across the higher education system (DTI 2013).

Intervention Five: Improving market access

The 2018–2020 IPAP report maintains ‘that two major challenges facing furniture manufacturers are the high concentration of the furniture retail sector and getting retailers to buy locally produced furniture’ (DTI 2018: 139). The report notes that the ‘large retailers, collectively, dominate 80% of the local market. The rest is shared among independent furniture retailers’ (DTI 2018: 139). This distribution affords the retail sector huge bargaining power with manufacturers, leading to suppressed producer prices and a lack of appetite for new prospective entrants. The main aim of this initiative, argues the 2018–2020 IPAP, is to ‘improve access to markets for locally manufactured products – especially with an eye towards regional export markets’ (DTI 2018: 139) and the Southern African Development Community (SADC). The initiative also seeks to improve local market share in the low-income furniture segment, that is currently dominated by cheap East and Southeast Asian imports (DTI 2018).

The evidence from the Southern Cape furniture case study – described in detail in Chapters Six to Eight – will show that there has been little uptake by furniture firms of all these DTI industrial policy support pillars – with the exception of funds made available to bespoke firms to exhibit their high-end wares at international trade fairs.

THE CONSTRAINING POWER OF CONTEXTUAL FACTORS

This chapter has sought to provide insight into a range of contextual factors that have had a strong bearing upon the character of the furniture LIPS in the Southern Cape. What is clear is that there are serious problems in the capacity of both the state and the lead firm to provide effective governance and coordination mechanisms to ensure the smooth functioning of the Southern Cape furniture LIPS. This concluding section examines the ineffectiveness of state cross-departmental coordination capabilities, the limitations of industrial policy, including the absence of cluster interventions despite industrial policy ‘spin’ about the value of clusters. It also comments upon the predatory role of the lead firm that has been driven by corrupt rent-seeking processes and high shareholder value rather than the development of supplier capabilities along the value chain.

The non-utilisation of coordination mechanisms

In the two decades of restructuring the forestry-timber-furniture value chains, government has not introduced explicit coordination mechanisms to improve policy outcomes. Rather, it has chosen to rely on a neoliberal agenda ‘of reducing the role of government in favour of market mechanisms and corporate interests’ (Kemp et al. 2005: 17). The policy tools chosen by the South African government to accomplish its goals in forestry, timber and furniture manufacture have included the following:

- Trade liberalisation and the end of subsidised pricing for timber (Freund 2013);
- Privatisation of state forestry plantations (Bethlehem 2000);
- Appointment of a BEE contractor to take over the auctioning of hard woods in the Southern Cape region (Stehle 2013);
- Bureaucratic imposition of rules and regulations by national departments and government agencies – for example, stringent water use licences (Mushangai 2019) and Bargaining Council determinations on minimum wages (Ward et al. 2018) within the furniture sector; and
- Allowing the export of unprocessed timber logs (Clarke 2018).

In almost all these cases, policy outcomes have not been as intended, with many unforeseen negative consequences emerging – such as a major decline in afforestation activities. In addition, the national government chose not to systematically monitor and review progress in the delivery of these policies. Consequently, several counterproductive outcomes emerged that government did not notice until it was too late to resolve. For example, government did not effectively manage the commercial companies participating

in the privatisation process. This lack of accountability enabled some of these companies to asset strip the under-age timber growing on privatised land that they then exported in unprocessed form. These private companies also reneged on legal commitments to contain alien tree infestation. At the end of the 20-year leasehold period, these private corporations exited the state forests, leaving them seriously resource-depleted with no new trees planted. With a 25-year maturation phase for pine timber, this is a major setback for the furniture industry. Adequate timber stock will only be re-established in approximately 25 years' time if new trees are planted now (Clarke 2018: 12).

Limits of industrial policy

There has been extremely bad press regarding DTI's industrial policy initiatives during the past two decades. For example, in an early critique, Chang (1998: 10) berated the lack of national policy coordination, limited to very broad 'framework' exercises such as GEAR, that lacked a detailed vision of South Africa's economic future. Chang proposed the need for a permanent national policy coordination council to increase the effectiveness of industrial policy (1998: 10). In more recent times, Kaplan (2019) repeats many of these criticisms. He views the multiple IPAPs as having failed to realise their objectives. Kaplan focuses specifically on the use of investment incentives in the form of subsidies to support the auto, clothing and textile industries. These incentives were 'targeted mainly at investments in plant, machinery and export marketing activities, as well as the acquisition of business development and incubator services' (Kaplan 2019: 2). Kaplan argues that the main problem is a lack of demand in the broader economy, and that the incentives have failed to encourage local firms to invest further in their own businesses. Rather, he contends, that such policies may have contributed to a more capital-intensive manufacturing growth path with the substitution of workers with state-subsidised new machinery (Kaplan 2019).

As highlighted earlier, the DTI has introduced five furniture interventions spanning clusters and hubs, state preference for the procurement of locally made products, modernising machinery and technology, design training programmes, and gaining improved access to regional/continental markets for small firms. Most of these interventions – as will be seen in the fieldwork evidence chapters – have come to nought. The only intervention supportive of small firms in the Southern Cape furniture LIPS appears to be the funding for participation in international trade expos and, more recently, access to expos on the African continent (see Chapter Six). However, in the main, the industrial policy interventions have not been implemented or have failed and the problems facing the LIPS remain.

Limited number of cluster interventions

A major problem with the state's inertia on the implementation of industrial policy are the furniture cluster initiatives envisaged in policy but never implemented in reality. First, beyond the 1998 Saligna cluster initiative led by GVC academics Kaplinsky and Morris (Kaplinsky et al. 2003: 22), only one other cluster initiative has been identified

– the KwaZulu-Natal Furniture Cluster established by the provincial Department of Economic Development, Tourism and Environmental Affairs in 2004 (Moloi 2019). No other furniture clusters have been initiated with DTI support in the formal furniture sector since 2004. Strangely, the obvious candidate for cluster status – the Southern Cape furniture LIPS – has not received any support from DTI around strengthening cluster components. The IDC (affiliated to the DTI) has invested in some private sector clustering initiatives in the Southern Cape region but these have all proved to be failures (an aspect to be discussed in more detail in Chapter Seven). Other furniture proposals (including the 2016 CSIR and 2020 Master Plan proposals discussed earlier) appear stalled in a perpetual state of planning with no actual implementation taking place.

The predator role of the lead firm

This chapter has also outlined how the Southern Cape furniture LIPS was dominated by a lead firm characterised by asset stripping through mergers, acquisitions and firm closures – what the analysis has termed predator behaviour. Steinhoff, the lead firm, did not play the role other lead firms have played in symbiotic ecosystems (Mazzucato 2013), namely that of developing local supplier capabilities. Rather, it has performed a parasitic role in the ecosystem. This practice has occurred through the closure of many firms in the region through mergers and acquisitions, the offshoring of furniture production (Steinhoff's investments in Poland, for example) and the lack of any new investment in local productive capacity.

IMPLICATIONS FOR THE SOUTHERN CAPE FURNITURE LIPS

The analysis above and in Chapter One has portrayed the Southern Cape furniture industry as having transitioned from being a major beneficiary of the Apartheid 'developmental state for white citizens', to being a financial and tourism real estate hub today. This transition has seen the manufacturing sector in the region deindustrialise – with negative implications for the furniture sector. This is the critical context in which any future changes to this furniture LIPS must be considered.

CHAPTER SIX

The state of design and digital capabilities in a weak local innovation system: The furniture LIPS in the Southern Cape

This chapter provides an analysis of the local furniture innovation system in the Southern Cape through the lens of LIPS theory. As indicated in Chapter One, LIPS is a branch of the innovation school that focuses on developing the technological capabilities of firms (especially small firms) in local economies. It also highlights the non-paradigmatic, average or ‘middling’ case studies often neglected in innovation studies – in fields such as the informal economy, waste collection, legacy industries and the creative sector. The Southern Cape furniture industry provides a natural setting for a study of the local innovation system. As indicated in Chapter One, it evolved historically as a furniture cluster from as early as the 1890s. It reached its maturity as a cluster in the 1990s and has been in decline ever since. As a LIPS, it comprises all the critical actors and organisations needed for furniture production that make up the local innovation system supporting the industry.

In seeking renewal as a furniture cluster, this book provides evidence on three of the most critical issues facing the furniture LIPS in the Southern Cape, these being: (1) building local firm capabilities (Chapter Six); (2) harnessing collective efficiencies as a cluster (Chapter Seven); and (3) establishing formal linkages between local firms and local ET organisations (Chapter Eight). These three issues are the most important in any turnaround strategy for the local industry, and thus each issue is addressed separately in Chapters Six to Eight. The present chapter focuses on the development of firm-level capabilities in the fields of design and digitalisation.

The structure of the discussion in this chapter is as follows. It first discusses the selection of firms to be studied using product markets (as defined in Chapter Five) as the key selection criteria. The discussion then shifts to examine both the positive and negative developments in the local industry. Positive developments include issues such as the creative impact on the industry from a new generation of firm owners. These firm owners support a shift away from the old-fashioned Cape-Dutch furniture towards more design-rich and digitally manufactured products. The third section focuses on the

constraining factors that continue to impose obstacles to growth in the LIPS – factors such as the demise of mass production, the collapse of furniture exports, weak industrial policy, and low levels of interaction and cooperation. The fourth section examines the consequences of low levels of interaction and cooperation in more detail, which are: serious limitations in the processes of firm-based learning, new knowledge acquisition and the building of new technological capabilities. The fifth section provides an overall assessment of the learning processes in the LIPS against a conceptual template which lists several requirements for good firm-based learning. The final section provides a few concluding comments.

SELECTION OF FIRMS

This book is based on a qualitative study of furniture firms operating in the Southern Cape furniture LIPS. A small sample of 14 firms (11 current and 3 former firms) were selected out of a total of 50 furniture firms operating in the towns of George and Knysna. The main aim of the selection was not to establish a representative sample of the 50 firms, but rather, to obtain a representative picture of the five product market segments operating in the region and to determine to what extent these different segments will offer growth opportunities in the future. As indicated in Chapter Five, product market segments are important to consider in many industries as they are usually not homogenous, defined by one type of production system. In the case of furniture, there are five highly differentiated segments. Mass production, for example, is characterised by economies of scale and the manufacture of high volumes of standardised low-cost goods using mainly semi-skilled labour. In contrast, bespoke firms are based upon the high-skills of designers and cabinetmaker-artisans.

The 14 firms divided according to their product market segments are presented in Table 6.1.

POSITIVE DEVELOPMENTS IN THE INDUSTRY

The demise of the furniture industry in South Africa and in the Southern Cape in particular has been described in Chapters One and Five. Although the industry has declined in the past two decades, there have been positive changes that have acted to modernise the industry to some extent – and these changes are evident in the Southern Cape furniture industry. Most significantly, the changes witnessed in the region recognise the importance of the industry developing new capabilities in design and digitalisation – the critical drivers of growth of the industry internationally. This modernisation includes, first, a new generation of firm owners who support a shift away from the old-fashioned Cape-Dutch furniture that defined this region for more than a century – towards more design-rich and digitally manufactured products. Second, it also includes the adoption by firms of a ‘dual mode’ of working, supplementing income earned in specific product market segments with income earned from contract furniture in the construction sector. Third, there is some evidence of firms using design and digital production methods,

**Table 6.1: Fourteen firms interviewed in the Southern Cape furniture LIPS:
Classified by five product market segments**

Name of owner/CEO		Name of firm	DUAL MODE FIRMS Firms that do contract furnishings
<i>MASS PRODUCTION FIRMS</i>			
1	Ernie Fritz, CEO	Divine Pine	No
2	Ernie Fritz, CEO	City Wood	No
3	Stefan Buys, CEO	Rustic Furnishings	No
4	Jan Louw, owner	Slumberland	No
5	Nic Abrahams, owner	Home Decor	No
<i>MASS CUSTOMISATION FIRM</i>			
6	Wim Ackerman, owner	Ergo Office Designs	Also does contract furnishings
<i>BESPOKE FIRMS</i>			
7	Nico Prinsloo, CEO	Coastal Furnishing	Also does contract furnishings
8	Andre Vermaak, owner	Eden Meubels	Also does contract furnishings
9	Rory Martin, owner	Countrycraft	No
10	Jeanne le Roux, owner	Creative Design	Also does contract furnishings
11	Henk Rossouw, co-owner	Nature's gift	No
12	John Gibbon and Anne Simone, co-owners	Ambience	Also does contract furnishings
<i>MAKER FIRMS</i>			
13	Mike Anderson, owner	Artisan Studios	No
14	Johan Veldman, owner	Woodcraft	Also does contract furnishings

Note: The names of individuals and firms have been changed to ensure anonymity.
The research proposal was approved by the Research Ethics Committee of the University of Johannesburg in 2019.

but the progress made towards building these design and digital capabilities is still very limited – as the discussion below will indicate.

Generational change in ownership

Geels (2005) argues that a key social mechanism triggering innovation and experimentation is through the entry and contribution of outsiders into the industry. Geels notes that this development is ‘because incumbent actors have vested interests with the established technology, and so they tend to leave radically new technologies “on the shelf”’ (Geels 2005: 48). Outsiders entering the industry do not have these inhibitions, and ‘they may accelerate the market introduction of a new technology’ (Geels 2005: 48).

Some evidence of this can be seen in the Southern Cape furniture LIPS, particularly through the arrival of a new generation of factory owners (some are second or third generation members of furniture-producing families, but others are new to the sector) who are not as averse to risk as were the older generations. A good example of this characteristic is evident at Countrycraft. The Countrycraft factory was started by Luke Martin in 1989 – the father of the current manager Rory. The family have been cabinet-

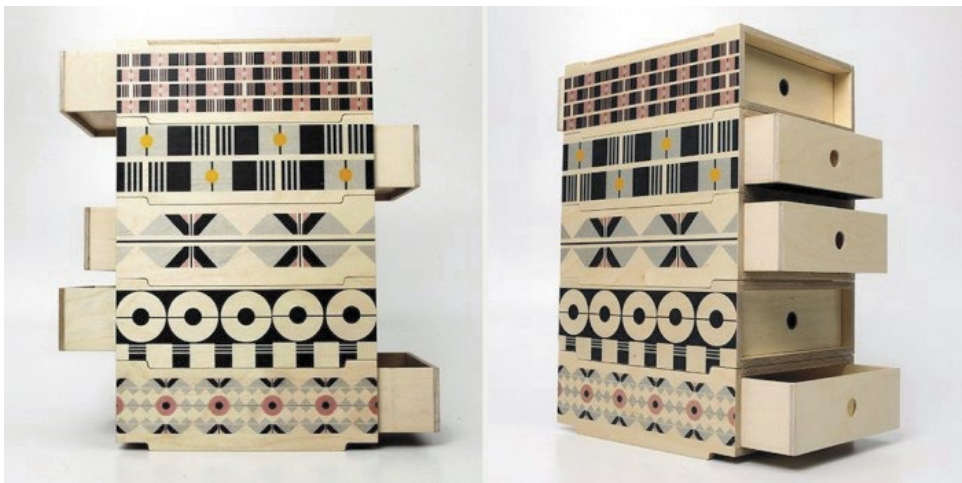
makers for seven generations. Martin Junior is keen on bespoke production, making something different every time for a new customer:

I know it's much more time consuming for a guy like me but I enjoy it much more doing bespoke manufacturing because I've got a more arty kind of orientation than what my father has. I don't want to get into a market where I have to have my costs so low that I can still sell it for a little bit of profit, and I have to make a hundred of them to make a little bit of money. I don't want to be in that scenario. I want to be in a scenario where I can charge somebody R40 000 for a dining room table because it's a very special order. (Interview with Rory Martin, owner of Countrycraft, 30 May 2017)

Creative Design was formed in 1990 and it too was committed to traditional Cape vernacular furniture. However, Jeanne le Roux, a trained architect and new owner of Creative Design has changed all of that. The company is the most successful of the bespoke firms in terms of innovation, introducing new technology and new products. Much of her work centres on the use of colourful African-inspired designs painted onto birch plywood to create home furniture such as the example below of a chest of drawers (see Figure 3). This product range has done well, and exports are growing although still a small component of sales.

Nature's Gift is the youngest of the bespoke firms sampled. Started in 2004, the firm co-owners are graduates from the DTI-funded Furntech incubator. Today, the company runs a very successful bespoke firm with a showroom in Cape Town. The company boasts several export orders. They produce a range of products, but their signature range is definitive of their approach, with strong African influences and an emphasis on the natural environment.

Figure 3: Examples of African-themed furniture pieces by Creative Design



In all the interviews with younger second/third generation or new owners/managers, most firm leaders appeared comfortable with the slow digitalisation of production and are embracing modern technologies such as CNC (if they can afford it), AutoCAD design software, e-commerce and the greater role fashion trends, consumer tastes, lifestyles and customisation are playing in the industry. Some have training outside of traditional cabinet making, with expertise in interior design, IT and architecture. The new generation of owners has tended to shift fabrication away from low-price mass production and its 'race to the bottom' principles of price-based competition, to a model of competitiveness based upon design, high-quality craftsmanship and customer satisfaction. These newcomers are more agile in dealing with the multiple stakeholders operating in the furniture LIPS, particularly government, as compared with former and older current owner-managers who have struggled politically to develop relations of trust and cooperation with government and other industry players. They represent an important new grouping in the furniture LIPS with the potential to assist in its turnaround.

Older members of the current stock of white business owners of furniture firms in the region remain 'old-fashioned' compared to younger generations (sometimes their own offspring but in other cases, new factory owners with new ideas). The older generation remains sceptical about new practices such as automated and digitalised production techniques (AutoCAD, CNC and 3D printing), using materials such as glass, plastics and other polymers alongside wood, and the rise of fashion, design and customisation. In addition, there is a strong hostility amongst this older group towards the post-Apartheid government and its bureaucratic regulations, especially in the arena of labour relations, minimum wages and skills development.

Contract furniture and the 'dual mode'

A second aspect of modernisation of furniture firms in the Southern Cape LIPS over the past two decades has been the move to adopt a 'dual mode' of work to maximise the profitability and sustainability of the firm beyond the limited bespoke, mass customisation and maker markets. This shift coincides with the transition of George and Knysna from being manufacturing hubs to towns based upon the financial, real estate and tourism sectors (see Chapter One). The growth of the construction sector has been a significant development in this area. Three of the six bespoke firms undertake contract furniture installations as part of this shift (Eden Meubels, Creative Design and Ambience). The two bespoke firms who do not produce contract furniture have chosen to focus on bespoke only, Coastal Furnishing and Countrycraft. Other dual mode operators include Ergo Office Designs, the mass customisation firm case studied.

In the case of Eden Meubels, this second mode of work entails timber harvesting and large-scale contract furniture installations. Eden Meubels comprises two companies intertwined as one, employing approximately 200 people. The first company is Eden Meubels 'proper' and is a bespoke furniture firm. The second company is Outeniqua Timbers that engages in harvesting timber, sawmilling and timber drying and storage – Eden Meubels's insurance policy against the expected shortages of timber in the future.

The production systems of these two companies are very different, with Outeniqua Timbers located in the primary (forestry) sector and employing 150 people, mostly in very labour-intensive, low-skill jobs, whereas Eden Meubels is a secondary sector company employing 50 people and making top-of-the-range home furnishings, with a significant grouping of employees requiring artisanal and machine skills. The combination of the two plants suggests that Eden Meubels is a large firm with its own sawmill, kiln, timber warehouse and privately owned forestry land.

Bespoke firm Creative Design also participates in dual mode manufacture. The firm has been very successful with large-scale furniture installations at golf courses and holiday resorts along the Southern Cape coastline, as well as in Mauritius and Angola. Creative Design has also worked on yachts in the boat industry of the Southern Cape. The mass customisation firm Ergo Office Designs also participates in dual mode manufacturing. Ackerman, the owner, is clearly the entrepreneurial type, prepared to take risks in growing his business, as reflected in his decisions to physically expand and modernise the plant, and pioneer its diversification into two businesses under one roof, as well as house transport services inside the firm, eliminating dependence upon unreliable courier services for deliveries nationwide.

The two businesses are: (1) a mass customisation firm producing high-end office furniture (Ergo Office Designs) and (2) a contract installations firm, Sedgefield Furniture Installations, producing fixtures in large office complexes, reception areas, hotels and in the large houses of the affluent. Of significance, these two businesses feed off common facilities for timber sourcing, machining and spray painting, but their dispatch and assembling is different – Ergo Office Designs office furniture assemblage is on site, whereas Sedgefield Furniture assembling is offsite at the clients' premises. The products of Ergo Office Designs are sold via retailers, whereas Sedgefield Furniture Installations works directly with end-users (institutions such as hotels, large office complexes or government buildings).

INDUSTRY OBSTACLES FACING THE LIPS

The progress made in modernising the furniture LIPS in the Southern Cape, however, is less impressive when contrasted with the full list of problems that currently beset the local industry. This section examines four obstacles facing the local economy, these being the demise of mass production in the region, the absence of exports, weak industrial policy, and limited interaction and cooperation between firms.

Demise of mass production

The period from the mid-1990s until the early 2000s was an optimistic moment in the recent history of the furniture sector, based largely on growth in exports which benefited from favourable exchange rates. Several ambitious expansion initiatives were introduced by entrepreneurs in the sector during this time. This historical section discusses the rise and fall of three such initiatives – (1) Divine Pine, (2) City Wood and (3) Rustic Furnishings.

Divine Pine was a mass producer of standardised low-cost pine furniture. The firm focused on bunks, single and double beds in ready-to-assemble (RTA) format using pine. Owner Ernie Fritz secured probably the biggest contract out of South Africa for the export of waxed furniture to High Wycombe in the UK. Fritz also obtained a second export market from Wal-Mart and his plant introduced a triple shift to handle that order.

Unfortunately, in the environment of ever-threatening firm acquisitions, Divine Pine was bought out by Mzansi Industrial Holdings in 1997, a listed company on the Johannesburg Stock Exchange with funding to invest in the Divine Pine initiative. Fritz was retained on a management contract and served on the board. But then the unstable dynamics took a turn for the worse. Mzansi Industrial Holdings was sold to Markus Jooste, the CEO of the newly formed Steinhoff Group. Jooste fired Fritz as Managing Director. Divine Pine was later closed by Steinhoff.

The above failure of Divine Pine did not deter Fritz. Along with the financial support of the IDC, Fritz set up the City Wood cluster initiative in 1998. The initiative was timely, as after the advent of democracy in 1994, the Department of Trade and Industry (DTI) launched the Industrial Cluster Initiative in 1996 with the assistance of the IDC. Fritz responded to the emerging DTI policy framework for clusters and proposed a mass-production furniture plant (City Wood) in George that would consciously aim at production for export markets.

The City Wood initiative aimed to manufacture in the home office segment, as well as in the home entertainment and bedroom furniture segments. The business plan estimated about 50 vendors (contractors) and an output of about 30 large shipping containers per month – which is very large for a single plant by South African standards. The proposal estimated an annual income of 12.4 million US dollars in export sales and a plant which would employ 800 people (City Wood 1999: 15).

City Wood was short-lived. It lasted three years and was brought down by a sequence of negative events, including the collapse of a major export order to the USA, as well as problems in the boardroom amongst the key investors. Even with significant state support, detailed planning, and favourable demand conditions, the initiative failed largely through human error and conflictual intra-firm dynamics (Interview with Ernie Fritz, former Managing Director of Divine Pine, May 2017).

Rustic Furnishings is the third mass production firm reviewed in this study. Stefan Buys was another innovative entrepreneur who invested in the furniture industry in George in the late 1990s. He bought Furniture Fair and renamed it Rustic Furnishings. Buys was made a co-owner and first CEO of the new company. With an investment from a financial services group the company was expanded and exports grew from 3 to 4 containers to 40 containers per month servicing 12 large retailing clients across the UK and Australia.

Unfortunately, in 2002, it was discovered that the Financial Director was stealing from the company, forcing it to close prematurely. Buys still had extremely strong relationships with the international customers and companies that he dealt with, had good relations with his workforce, so he eventually got a court order backing his proposal to continue running the firm and employing the staff. He managed to secure new financial support and reopened the factory as Slumberland.

One of the funders recruited to support Slumberland was the Louw family. The company prospered until around 2005, but with the weakening of the South African Rand, the export business became difficult. Buys's customers were supportive of maintaining contractual arrangements through all of the fluctuations of the exchange rate because of the quality of product and the trusting relationships built up over time. However, this changed dramatically when Jan Louw, a member of the Louw family, damaged this trust by unilaterally hiking the price upwards by a significant margin. According to Buys, all of the international clients rejected this deal and changed suppliers within months. Because of these negative developments, Buys resigned and the firm lost most of its overseas customers, cancelling about eighteen export containers a month.

With Buys gone, Jan Louw took over managing Slumberland. Louw confirms that the export market built up previously in the UK came to a halt in about 2005. Brazil and Malaysia, in particular, came in with much better prices and excellent finishing – 'better than ours' (Interview with Jan Louw, owner of Slumberland, 1 June 2017). In the current period, the firm is concentrating on the local market only.

The business model has changed dramatically – from an export orientation to low cost and local market focus only – something which the former CEO Buys fought hard to avoid. Louw, current owner of Slumberland, also indicated that in terms of design, his company is not inclined to change designs regularly, as he prefers the stability of a brand that has a very long shelf life. He emphasises the continuities needed in production:

The business is the same as it always was. The people working in the factory do precisely the same work as they did ten years ago, nothing has changed there. They're still working with the same product. The only change was we introduced particle board which we never did before – but you use the same machines for this board as they did using solid wood so nothing has changed. (Interview with Jan Louw, owner of Slumberland, 1 June 2017)

The rise and fall of mass production initiatives

For the owners of mass production firms such as Divine Pine, City Wood and Rustic Furnishings, the late 1990s and early 2000s represented a high moment in the lifespan of mass-produced pine furniture firms aiming for export markets. It witnessed a brief period when high exchange rates enabled a window of opportunity for exports to overseas markets such as the UK, USA and the European Union (EU). This period was the right time to modernise and expand output using the new technologies and managerial methods. This opportunity was taken up by both former mass-producing firms Divine Pine and City Wood – the biggest mass producers in George at the time. It required significant changes in production methods and logistics, in particular, the adoption of CNC machinery to attain the economies of scale and quality of manufacture required for export markets. It also required more design-intensive products that would appeal to the more discerning consumers in overseas markets, and ready-to-assemble flat packaging that enabled furniture products to be more efficiently transported to client markets in giant steel containers. City Wood intended to use all these new production and

logistical methods. Founder and CEO Ernie Fritz obtained support from the IDC to cover the significant costs of the upgrade. It was launched specifically to be a 'state-of-the-art' export company:

We put up a state-of-the-art factory to do what we call flat pack furniture which is basically cupboards, tables and bedroom furniture. To purchase the CNC machines, we went overseas to all the industrial shows and we bought some of the best machinery from Germany, all the finishing equipment came from Italy, I hired the best guys I could in the country, relocated them down to George, I think it was probably the most exciting time of my life. (Interview with Ernie Fritz, owner of City Wood, 18 May 2017).

One of the issues Fritz believed was critical to the success of an export-oriented plant was the physical layout of such a facility, and that if badly constructed, it would constrain optimal output. He believed in industrial design and he totally restructured the physical layout of his new plant. A key component of his new factory floor layout would be CNC machinery. The IDC co-funded the initiative and promoted a Malaysian-influenced cluster model with City Wood operating as the lead firm producing significant volumes in-house and with vendors sub-contracted to do piecework components when needed. The concept saw the initiative grow slowly over time, bringing in more players as it became more successful. The entire project was supposed to grow to attain better economies of scale, product consistency (especially from suppliers) and achieve further technological upgrades and product diversity in the future (City Wood 1999).

However, all these plans and preparations fell away when both Divine Pine, but more importantly, City Wood, collapsed because of a sequence of internal problems. The potential for quality-focused upgrading rather than cost-driven restructuring shown by these two initiatives was impressive but, ultimately, short-lived.

Collapse of exports

A further problem related to the demise of mass production in the LIPS was the collapse of export markets. Since the fading of favourable exchange rates in the mid-1990s to the early 2000s, the export trade has deteriorated significantly in the sector and region. The case of Coastal Furnishing is illustrative of this demise in export opportunities. Coastal Furnishing exported garden furniture to the UK, Spain and Germany. It was very successful during the late 1990s (with exports exceeding the local market for mass produced garden furniture in this period in a 70/30% split) up until the economic crisis of 2008, when export prospects fell dramatically. Kaplinsky et al. (2009) pick up the same trend with South African garden furniture exported to the UK. The response by Coastal Furnishing post the 2008 crisis has been to focus on the local market and develop a marketing strategy across South Africa and the region. There is a small amount of business in Namibia, Angola and Mozambique in their hospitality industries that could grow through effective marketing.

Exports of bespoke products from South Africa is a new development. Previously, Cape vernacular furniture was consumed locally with little demand from export markets. However, the newcomers to the bespoke sector are trying to change this scenario. Overall, the one factor that distinguishes the older bespoke firms from the two innovative new bespoke firms, Creative Design and Nature's Gift, is whether their product imitates modern European styles or whether it incorporates an African motif in style and design. Copies of European styles have not been very successful in the export market, whereas African-themed furniture has received periodic export orders for Creative Design and Nature's Gift. Henk Rossouw of Nature's Gift argues that South Africa has strong design potential, especially through using African styles and South Africa's diverse natural settings. They represent 'something fresh for overseas markets – it's a good time for South African designers to come on board and get into the market' (Interview with Henk Rossouw, owner of Nature's Gift, 4 May 2016).

John Gibbon and Anne Simone from Ambience have been less successful at triggering bespoke exports. Beyond a shipment to Namibia, they have not really moved any further in that direction. They are driven mainly by the local market and contract work that they view as not fully exhausted yet for furniture in homes, government buildings, office blocks and hotels. In their view, exports are also affected by cost factors, including the fact that most of Ambience products use clear pine for the main components, with imported hardwoods for the decorative finishes. To add value to imported hardwood and then to export it successfully as part of a finished South African product is a huge cost challenge.

Weak industrial policy

Chapter Five presented a brief review and critique of South Africa's industrial policy efforts. Criticism was made of the multiple priorities listed in these policy documents, and the lack of implementation. Interviewee evidence suggests that the furniture sector has not benefited significantly from these industrial policy measures. A small number of furniture firms have made use of the DTI schemes to invest in new equipment. Others have used DTI funds to display products at international exhibitions. However, most furniture manufacturers have no knowledge of these funds, or they abstain from the processes of application because they are too bureaucratic or exclusionary, requiring small white-owned firms to have BEE partners. The application for support by Mike Anderson, CEO of the maker cooperative Artisan Studios, was rejected by DTI because they had decided to focus on the newly launched Black Industrialisation Programme consequently de-prioritising other programmes. John Gibbon and Anne Simone of Ambience obtained DTI support to exhibit at Paris's *Maison & Objet* annual exhibition, but they were unaware of any other government incentives for furniture firms:

What we found about DTI support is that it wasn't very well known in the furniture industry. We had to dig, we had to hunt to find where the application forms were located in government. We do not really know what is available to us and how to

apply to get it. (Interview with John Gibbon and Anne Simone, owners of Ambience, 5 June 2017)

Some furniture manufacturers avoid using government services because they believe their officials are not expert enough. Artisan Studios, a maker cooperative, provides facilities and business support to about 15 makers. According to the owner, Mike Anderson:

If these firms were to go to government agencies, such as the Small Enterprise Development Agency (SEDA), they would probably get the wrong advice because no-one in these government agencies has ever run their own business. They have no clue how to do it. (Interview with Mike Anderson, owner of Artisan Studios, 24 May 2017)

EXTENT OF INTERACTION AND COOPERATION

The discussion now shifts to the next requirement of the LIPS research methodology – a focus on the extent of cooperation in the local economy, followed by a section looking at the accumulation of interactive learning experiences, the acquisition of new knowledge, and the building of firm-level capabilities.

The evidence derived from firm interviews suggests little if any cooperation exists in the Southern Cape furniture industry. Firms operate with low trust and are suspicious of neighbourhood competitors. They are critical of government at all levels and are sentimental about the Apartheid era that supported the timber and furniture industries. These negative attributes weaken their ability to work in various ‘communities of practice’, to cluster shared resources together with other firms in the locality, and to work with government constructively in the interests of the broader industry. Ernie Fritz, CEO of the former mass production firm City Wood, believes part of the problem of low trust is the small-town mentality of the Southern Cape furniture LIPS. Most firm owners would be suspicious of the initiatives of competitors:

I could tell you many stories about this. One form of it is owners are not keen on outsiders visiting their factories, hiding the inside workings as if they’ve got a special something going on inside. It’s this whole protective thing, it’s crazy. So when I opened up City Wood, I would invite other owners to come look at my factory, tell me what I’m doing wrong, but no-one responded. I think it’s this whole ‘verkramppte’ thing about don’t come into my factory, you’re going to see something and steal my intellectual property. (Interview with Ernie Fritz, owner of City Wood, 18 May 2017)

Andre Vermaak of Eden Meubels confirms this hostility to any form of cooperation:

Ask owners of firms who are you willing to work with in a cluster in the area, and you will find that that’s the problem. If the guys don’t want to work with the other company, you’re not going to make a success by starting a cluster. You first must

measure the attitude of the people, or how they feel about it personally. If there are not enough people that want to work with other companies, it won't work. You can't change the guy's private thinking of what he's doing, and I think that's the biggest obstacle, definitely. (Interview with Andre Vermaak, owner of Eden Meubels, 6 June 2017)

Martin Meyer, a furniture design trainer from Cape Town who is involved in an export orientation training course for South African furniture makers funded by the Dutch government (the Dutch Centre for the Promotion of Imports from Developing Countries), sees the problem as that of complacency in choosing to operate only in the local market, remaining risk averse to changing any local production conditions:

A lot of the Southern Cape furniture companies have relied mostly on the local market, and the local market is not that challenging price wise so they kind of get by in the local market and they don't have this thing that manufacturers from other countries have – pressure to export in a massively competitive environment, and they know that they have to be able to manufacture at certain prices. Whereas our guys don't really have that pressure, they've just been complacent with local market sales which of course is small and unchallenging. (Interview with Martin Meyer, furniture design trainer, 9 June 2017)

Many firms in the Southern Cape furniture LIPS operate on the basis of distrust and hostility towards rivals, what the literature calls 'rugged individualism', focusing only upon overtly competitive relations with other firms – and hostility towards the state. Gertler and Wolfe (2002: 238) used this term when describing the same problem amongst Canadian firms:

The business culture in Ontario is dominated by the ideal of rugged individualism, self-sufficiency and competitive rivalry ... This industry culture is reflected in the attitudes and practices of individual firms, whose management remain suspicious and sceptical of collective action and cooperation. The process of inter-firm cooperation in Ontario's manufacturing industries is discouraged by the absence of the strong sectoral coordinating mechanisms among firms provided by industry associations or Chambers of Commerce in some of the more innovative regional economies in Europe.

This hostility to cooperation, found mostly in Anglo-Saxon countries, has consolidated in the era of neoliberalism during which the state's role is diminished and the economic outcomes are regulated by so-called free-market relations of competition. In the South African context, this ideological stance is dominant across business.

A good example of this is raised by Marianne Marks of SAFI (the industry association) who speaks of a 'negative mindset that causes member firms to be the first to speak of things going wrong with SAFI reform proposals', rather than any consideration of support

for these initiatives. Mike Anderson, owner of the maker firm Artisan Studios, defines the problem of resistance and opposition to change as the ‘absence of collective will’:

There’s no longer a ‘collective’ in society to pull off initiatives like bulk buying, joint training and sharing of expensive technology. Also, the issues discussed in the meetings and workshops are not the most important. They lack vision in that the players in the supposed collaboration are sweating about all the downside/negative issues of the thing, not the upside of it. They’re like going okay how do we share the costs of transport, and I’m going that’s lower order collaboration. A high order of collaboration is how do we access new markets and new products that are extraordinary, that we wouldn’t be able to make if we didn’t collaborate. (Mike Anderson, owner of Artisan Studios, 24 May 2017)

LEARNING PROCESSES AND BUILDING CAPABILITIES

This section examines learning processes in more detail. The absence of cooperation and interaction in the sector has a negative knock-on effect on learning processes and capability-building in the LIPS – without cooperation there is no learning, and without learning and new knowledge acquisition, there is no capability building. Firm-learning and firm-level capabilities are highly inter-dependent phenomena and evolve together. The emergence of firm-level capabilities is dependent primarily on a range of learning processes – both within the firm but also between the firm and other external actors in the innovation system. In the words of Rush et al. (2007: 223), it is ‘the underlying knowledge and experience base of the firm that enables capabilities (technological or otherwise) to be generated’.

The next section will outline the learning processes and new knowledge acquisition strategies deployed by firms in the Southern Cape furniture LIPS. Four positive developments in this regard are reviewed before five obstacles to enhanced learning and knowledge acquisition are outlined.

Building design capabilities

The first positive learning development across all firms has been the belief in the shift towards stronger design inputs in furniture making:

It certainly is one of the top priorities for the industry, because if your designs are not right, if you’re still making the old Cape-Dutch stuff, you would soon be out of business. So yes, I think design is very important. Obviously if you get design right, you get people interested in your furniture, the next priority would be the quality of the work but I agree design is one of the most important components. (Interview with Rory Martin, owner of Countrycraft, 30 May 2017)

There is a conscious effort within the furniture design community to develop a distinctively 'African' style of design that will enable it to differentiate itself from modern European furniture and to enter larger global markets. A number of other interviewees have agreed with this view. Martin Meyer, convenor of the Dutch-funded export orientation furniture course is strongly of this view:

I would say yes, there is potential for South African furniture manufacturers to export on a sustainable basis but not through the traditional distribution channels, they'd have to go direct to retailers and develop relationships with specific retailers, who have a few stores, and who are right for your product and price and who don't want a thousand tables, but just want twenty tables. So it's about that kind of match and that fit but your product has to be well designed. You have to stand out, you need to have some sort of signature that sets you apart in the global market. I always say to firms it's about something that is African. Whether it's in raw material or whether it's in the design or a bit of both, show that your African roots set you apart from the competitors. It's about the integrity or provenance of the product – to be able to show that we're from Africa, we're a good brand and we can compete in the mid- to high-segment of the market where our prices make sense. (Interview with Martin Meyer, furniture design trainer, 9 June 2017)

Searching for new sources of knowledge

A second positive development has been the acceptance of the importance of trade exhibitions and showrooms as a crucial knowledge resource for the exchange of ideas and the promotion of locally manufactured products in global markets:

We started attending things like the Design Indaba and 100% Design in Johannesburg, where for the very first time people saw our stuff in Johannesburg. The whole process was very good for us because the choices we made in collaborating with a young designer on patterns and starting to print it on furniture got us a lot of free media publicity which sort of launched this thing much better than we would have been able to do, even if we'd paid someone ... we also went to the *Maison & Objet Paris* which is a big interior decoration exhibition. These things create fantastic opportunities for us. In fact, yesterday we received our third export order, it's really the very beginning now, but it is at least showing that it can be done. (Interview with Jeanne le Roux, owner of Creative Design, 6 May 2016)

International design and export training courses

A third positive has been firm participation in specialised training courses offered by international government agencies in South Africa. The Dutch and Swedish governments have provided bilateral support to the furniture sector in the Southern Cape over the

past two decades, with one of the aims being to develop design capabilities and, through this, to expand export possibilities. The Swedish link was built through Furntech that received considerable financial and technological support from the Swedish Industrial Development Agency (SIDA), for its incubator at the old Saasveld campus, that is now part of Nelson Mandela University (NMU). SIDA also provided a series of lectures by visiting experts on design and has taken senior management of South African firms to Sweden to visit the IKEA plants and its highly successful furniture cluster village Tibro (Hellstrom & Hirschsohn 2007).

The Dutch export orientation course focuses on marketing, product development and export promotion of South African furniture products. The co-owners of Nature's Gift attended this course and found it very beneficial:

They actually trained us to start exporting and it's a five-year part-time course. They give you a lot more knowledge than money. DTI gives you money but not knowledge. It has been quite important for us ... we always go on these courses, we always learn stuff from them. (Interview with Henk Rossouw, owner of Nature's Gift, 4 May 2016)

Digital technology is being used to a limited extent

A fourth area of learning is from the purchase and use of the new technologies such as CNC machines and AutoCAD design software. One sign of modernisation in the LIPS is the fact that five of the 14 firms interviewed use these new technologies. Coastal Furnishing is one of the five CNC-using firms, and one of the two bespoke firms in this category that have purchased CNC machinery for its garden furniture division. It has also made extensive use of AutoCAD digital software, and online marketing and e-commerce. The firm is more digitally advanced than other factories in the Southern Cape region. Indeed, the introduction of CNC machinery led to significant restructuring of production in the firm – the firm appears to be moving towards higher volumes of high-end mass-produced goods using CNC technology:

Although I'm using highly skilled guys a lot making furniture is becoming more of an assembly job. There is a greater emphasis on the machining, we strive to machine to a much higher level. We make use of technology quite a bit. When I started with Coastal Furnishing twenty odd years ago, everything was handmade. A cabinetmaker worked a day to make one chair because it was machined but it wasn't to a very, very high level of machining and then he would get this bundle of components, glue it together and then start making the furniture piece. Because of my background in industrial engineering, I eventually began arguing, "Guys we're sitting with CNC technology, why don't we machine this stuff on the CNC machine?" So today our bespoke furniture is a very skillful combination of cabinetmaker skills and the automation power of CNC. (Interview with Nico Prinsloo, CEO of Coastal Furnishing, 2 June 2017)

Creative Design is the second bespoke firm that uses CNC machinery. The firm invested in an expensive CNC machine, costing in the region of ZAR1.5 million. For Jeanne le Roux, the owner, a critical issue with CNC is the consistency and reliability of each CNC application:

We got it for the longer runs and it's definitely for quality ... it doesn't carry human flaws and so one chair will look like any other one that we produce. So it's about standardising, you get a standard product. And definitely the speed of the machine is key – if you want to cut any pattern you just have to write it once and then it's done and you know it's going to be like that every time you use the pattern. And it has definitely a quicker turnaround time than manual labour. (Interview with Jeanne le Roux, owner of Creative Design, 6 May 2016)

The maker firm Woodcraft has purchased a small South African built CNC machine. It does not have the full functionality of a proper CNC machine (that has extraction and automatic tool change functions). Nonetheless, its capabilities have transformed his workshop:

That machine is here after hours, it never takes sick leave, it's working all the time and once it runs I pay for electricity, and I pay for a little bit of maintenance and the cutters, and that's it. It doesn't make mistakes, it doesn't drop a tool, it doesn't break tools. (Interview with Johan Veldman, owner of Woodcraft, 5 June 2017)

The local manufacturer of the CNC machine also executes CNC piecework for other furniture clients in the Southern Cape. In addition, a firm in Knysna is offering 3D prototyping services. Veldman, owner of Woodcraft, argues that given that CNC and 3D machinery are so expensive, this sharing model is the obvious route to go for micro firms.

Obstacles: Absence of furniture and design education

The positives listed above are unfortunately overwhelmed by the numerous barriers to growth in the LIPS. For example, a major constraint inhibiting learning activity and the growth of the new technologies and enhanced design capabilities is the absence of formalised design training offered by ET organisations. None of the education organisations in the region have a dedicated furniture design programme. CPUT offers industrial and interior design and a BTech programme in Architectural Technology – but no dedicated furniture manufacturing or furniture design course. Similarly, NMU in Port Elizabeth has an interior design programme at its main campus but no furniture design programme. Stellenbosch University has a wood sciences faculty aimed at understanding the pathology of indigenous and alien trees but, likewise, no furniture design programme. The college in the George area, South Cape College, does not train cabinet makers nor does it offer any design courses. Lastly, the Furntech incubator established in 2000 in George on the premises of the Saasveld Forestry Campus (now part of Nelson Mandela

University) was closed in 2014. The South African government justified this action by claiming that participants from the programme were unable to independently source adequate work and income generating opportunities after graduating.

The whole training situation is a disaster. And a further tragedy is that this training which is not being offered needs to be multi-disciplined – we've got to train cabinet-makers, we've got to train furniture designers, and the technical skills around all this becomes very important. We need artisans to operate at a much higher level today because the new technology is actually quite demanding. This type of training is not happening. (Interview with Stefan Buys, owner of Rustic Furnishings, 22 May 2017)

No demand to employ qualified in-house designers

An interesting contradiction exists in the furniture industry in which there is almost universal agreement from the interviewed employers that design is critical, yet there is almost no demand to employ fully qualified designers in-house in the Southern Cape:

There is simply no demand. Even if we had ten newly qualified furniture designers now, where the hell are they going to work? It will be very difficult if you bring me a highly skilled furniture designer and ask me to help find this guy a job, and I can tell you now if I find him a job, he's going to be paid nothing because they can't really afford him at the moment. (Interview with Stefan Buys, owner of Rustic Furnishings, 22 May 2017)

John Gibbon from Ambience concurs and sees the problem as a catch-22 situation – demand for designed furniture must rise before firms can employ in-house designers or outsource to external designers. In short, the predicament of low levels of formal training now faces both cabinet-making and furniture design. Firms in the region rely largely on minimal levels of endogenous learning – using experiential knowledge to undertake minor incremental improvements – to enable them to adapt old products and devise new brands for the market. Often it is the owner of the small family firm who is playing multiple roles – managerial, operational/technical and the design functions – to sustain the business. These skills are not widely dispersed across the firm, partly because the capabilities of ET organisations are not being used to assist in performing this diffusion function.

Given that there are no design businesses in the Southern Cape, external design assistance would have to be contracted from Cape Town, a city that has several design houses and private design academies. Many employers in the Southern Cape regard the fact that design firms are not localised as a problem – yet Jeanne le Roux of Creative Design collaborated with a highly regarded Cape Town professional designer via the transfer of digital files on the internet. They did not meet face-to-face. Again, it appears that if firms make the transition to the new digital technologies, and are prepared to innovate and take risks, problems can be overcome. Many in the Southern Cape furniture industry are not ready for these changes yet.

Limited use of digital technologies

Commitments to improving design capabilities are usually complemented by an equal interest in digital technologies. Digital technologies, such as CNC and AutoCAD, enable very complex design specifications to be realised. But this complementarity was not evident during the Southern Cape study. Only 6 of the 14 firms surveyed in this study have purchased CNC equipment – these firms are the former Divine Pine and City Wood firms and the current Ergo Office Designs, Coastal Furnishing, Creative Design and Woodcraft. The other eight firms work largely with hand tools and pre-digital mechanised machines. All are enthusiastic about the potential of digital technologies to contribute to their firm, but as yet they have not made the risky decisions and capital investments to automate their plants.

Countrycraft uses no CNC machining or AutoCAD software. Production technologies remain the same as three decades ago – largely hand tools and craft skills. Rory Martin describes the firm as a low-tech plant – with no CNC machinery, and all design work being completed by hand, free-sketch style. Similarly, Eden Meubels have not digitally automated, although they procrastinate regularly about whether to buy into the new technologies or not. Andre Vermaak and his son Willie regularly attend the large global timber technology fairs to view the new developments in the industry. Vermaak believes that his firm and the local industry are constantly behind global trends by at least ten years. Vermaak has not invested in CNC machinery as yet. In the past, they have shied away from purchasing CNC machines because of a few ‘barriers to entry’. These include decisions around the full implications of the investment, the application of the machine to the production floor, and whether the firm had sufficiently long runs to justify the high costs of CNC technology:

Because we’re in a niche market, there’s never two products quite alike, so every time we got down to actually thinking about buying a CNC machine, there was always something that didn’t quite fit into our position in the market. (Interview with Willie Vermaak, son of Eden Meubels owner, 6 June 2017)

E-commerce and social media

E-commerce and social media sites are important components of digitalisation. They provide learning arenas for users and suppliers. Bespoke firms tend to sell directly to end-users (customers) and prefer not to work via mainstream retailers (who deduct very large overheads). It would seem natural for these firms to all have adopted strong website-driven branding, selling, logistics and delivery. However, quite a few of the companies involved in this study still do not have interactive websites offering client services:

We don’t do e-commerce because we specialise in manufacturing once-off pieces. Therefore, it’s a bit difficult for us to exploit the sales potential of e-commerce, like making fifty of a certain design and then selling them all online. Our once-off products don’t really work like that so e-commerce doesn’t really relate that well. We

have a website, but it is not set up to handle e-commerce. (Interview with Andre Vermaak, owner of Eden Meubels, 6 June 2017)

Similarly, the mass customisation firm Ergo Office Designs also does not use e-commerce services because in their view, the process of customisation (entailing a negotiation about differing configurations of furniture modules) needs to be done face-to-face. Twitter and Facebook, however, as social media providers, have made quite an impact in the realm of marketing furniture. Use of it is free, and some of the bespoke firms – Creative Design, and Nature's Gift – also use these websites very effectively to market their products. Johan Veldman of Woodcraft uses social media outlets such as Facebook to advertise his products and services:

I was amazed with Facebook. It only takes one of your acquaintances to like a product and suddenly it's like a wildfire online. Someone literally says I've bought a piece from Woodcraft, he loads a picture, and the response on Facebook is fantastic. (Interview with Johan Veldman, owner of Woodcraft, 5 June 2017)

Demise of apprenticeships

There is clear evidence in almost all firms interviewed, but specifically in the mass production firms, of a demise in the centrality of artisans formally qualified in cabinet-making and other key areas such as wood furniture upholstery. In their place, especially in mass producing firms, a larger proportion of semi-skilled carpentry workers has emerged – workers who perform relatively standardised and repetitive tasks of assembling ready-made furniture items en masse. These include products such as standardised kitchen units, large-scale office fittings, or wood panelling for hotels and restaurants. All these activities have been deskilled through the introduction of automated processes and require only semi-skilled workers who do routine cutting, assemblage and installation.

This new labour process has negative implications for knowledge production and firm-learning. First, the demise of certified artisans has the effect of reducing the firm's ability to accumulate, interpret and store experiential knowledge acquired from production practices and operational procedures. This problem arises because formally trained artisans are the most technically expert personnel to perform and solidify this role. Their marginalisation has the effect of reducing the impact of experiential learning on firm performance and productivity. There is a large amount of literature on how retaining the centrality of artisans in production, alongside the designers and business managers, has in fact played a major role in sustaining and growing the European furniture industry (Bettiol & Micelli 2014; Buciuni et al. 2013). In contrast to Europe, the Anglo-Saxon economies of the US, Canada and UK have all suffered the consequences of dramatic outsourcing of furniture production to countries such as China and Vietnam. This situation has entailed the loss of embedded knowledge that arises in the separation of product design (that occurs at head office) from operations (that has been outsourced to Southeast Asian companies). This problem is most acute in sectors dependent upon incremental innovation generated by artisans and semi-skilled workers on the shop floor.

The same loss of embodied knowledge, informed largely by artisanal expertise, has also occurred in the Southern Cape furniture LIPS over the past three decades.

Prinsloo from Coastal Furnishing confirms that there is a serious decline in the stock of highly skilled cabinetmakers in the region and country. For one, training is now less institutionally regulated and certified and more in-house and non-certified. Many of Prinsloo's skilled workers do not have artisan papers:

These days I think because there's such a shortage of skilled guys, you start realising what your own uncertified guy is worth to you. You're paying him that money in any case, if he can do the work whether he's got the papers or not. I think we're past the days where it was a case of okay well you haven't got the papers so we can only pay you half the money of what you're truly worth because you can actually do the work. We're paying way, way in excess of the Bargaining Council minimum wages. That's the message that we're trying to get across in terms of younger people entering the trade as well. If you're willing to go out there and if you can become good at what you're doing, you can actually make a pretty decent living out of it. (Interview with Nico Prinsloo, CEO of Coastal Furnishing, 2 June 2017)

Ambience is a firm of 26 employees. They employ 5 skilled cabinetmakers, but only one has formal paper qualifications as an artisan. The remainder of the workforce are skilled machinists in cutting, sanding and spray painting, and unskilled labour for routine tasks. Other than the one qualified artisan and two owner-manager interior designers, all of the others have learnt their skills on-the-job:

There is no prestige being a cabinetmaker. That artisan skill is not recognised anymore. So that's the problem, the kids just don't want to get into it ... Also, there is a real sense that the cabinetmaker profession is in serious decline, the main reason being that because the guy is not going to get paid what he can earn in other fields, by a purchasing public who don't want to pay for the furniture at a price that justifies the amount of skilled craftwork embedded in the furniture. It's a bit of a vicious cycle. (Interview with John Gibbon, co-owner of Ambience, 5 June 2017)

What was once a LIPS asset – a skilled labour force with expert knowledge in the furniture and timber industry – is dying out because most local artisans are over the age of 50 years old and there is little skills transfer to the younger generation. In Gibbon's view, the embedded furniture capabilities of the region are 'fizzling out'.

ASSESSMENT OF LEARNING PROCESSES

The review of positive learning developments in the furniture LIPS of the Southern Cape, alongside the constraints on learning also outlined, suggest a local innovation system that is not working optimally. Many benefits offered by the LIPS are simply not used, for example, the ET organisations available to help improve learning and knowledge

acquisition, DTI incentives to adopt modern digital machinery, the presence of other actors who can share knowledge and insight, and the potential of the internet and e-commerce to help in sales and marketing at a very low cost. All these opportunities are present in the LIPS, but because of ‘risk-averse’ behaviour, the passive *modus operandi* of firms in their relations with the rest of the world and the lack of trust between local actors, these opportunities are not activated by the relevant players. Progress in the sector requires purposeful and deliberate actions taken by firm owners and managers to increase their knowledge base and technological capabilities. This behaviour has not happened in the LIPS and the low levels of learning and new knowledge acquisition are evident in the summary provided by Table 6.2.

Table 6.2: Learning mechanisms in the Southern Cape furniture LIPS

	Internal learning	External learning
Formal learning	<ul style="list-style-type: none"> » No formal R&D activity in firms » Some design and prototype development » No knowledge codification activity 	<ul style="list-style-type: none"> » Limited hiring of formally qualified persons » No links to higher education organisations » Limited use of design consultancies » Limited use of internet to access new designs and trends » Significant use of design and furniture trade magazines » Use of furniture and interior design exhibitions globally and locally
Informal learning	<ul style="list-style-type: none"> » Significant informal learning on the job (up to a status equivalent to artisan), but this informal learning does not result in a formal education certificate » Significant learning by trial and error – some new furniture ranges sell well, others fail to capture market interest » Informal knowledge exchange amongst employees within and between firms 	<ul style="list-style-type: none"> » Some interaction with consumers, especially with bespoke, mass customisation and contract furniture » Limited interaction with retailers, especially for mass production firms. Relations are hierarchical and instructional and have not led to the development of supplier capabilities » Limited evidence of cooperation with competitor firms

Source: Adapted from Kraemer-Mbula et al. (2019: 10).

A similar assessment template of learning activities achieved in a local economic context is provided by Bell and Albu (1999). These authors developed a continuum of organisational arrangements that yield differing levels of capability formation – from passive and limited actions to those that are more active and purposeful. The template has been adapted here to contrast the knowledge system underpinning the Southern Cape furniture industry with that of Tibro in Sweden. Tibro is a small furniture cluster village, one of Sweden’s most successful producers and exporters of high-quality furniture – and a key supplier to IKEA itself. Because of financial and training support from the SIDA for the Furntech incubator in George, Tibro became the ideal-type reference point in the Southern Cape region for what constituted ‘best practice’ in the global furniture industry.

Table 6.3: The organisational requirements for building firm-level learning and capabilities: A comparison between the furniture LIPS of the Southern Cape and that of Tibro

Organisational requirements for learning and capability formation	Learning and capability formation in the Southern Cape	Learning and capability formation in Tibro, Sweden
1. The basis for knowledge diffusion	Diffusion is the unintended consequence of agglomeration, through 'passive' mechanisms such as 'watching' and 'copying' others work particular technologies.	Diffusion is purposeful and 'active'.
2. The dominant direction of knowledge flows	Horizontal – through passive mechanisms between firms producing similar goods.	Vertical – through user-producer links and production chains.
3. The role of ET organisations in diffusing knowledge	Non-existent.	Significant role, structured and active.
4. The role of large firms in diffusing knowledge	Large firms in forestry, paper and pulp and furniture retail, driven largely by cost considerations and short-term shareholder value, are not committed to developing local supplier capabilities.	The role of large firms (IKEA) is substantial, including possessing internal R&D facilities, with purposeful support to SMME suppliers.
5. Internal/external knowledge sources	Limited accumulation of new knowledge; knowledge mainly acquired internally.	Extensive and purposeful sourcing of new knowledge both internally and externally.
6. Channels for external sourcing of knowledge	Limited.	Several formal and informal networks and channels – including customers, suppliers, competitors, R&D organisations and lead firms.
7. Role of the firm	Small, mostly inactive.	Large, the dominant source of learning and innovation in this largely endogenous process.
8. Types of learning	On-the-job, based on passive 'watching' and 'copying'.	New knowledge generated by purposeful search, selection and problem-solving activity and decision-making.
9. Type of knowledge system	Closed, passive knowledge system supporting basic or routine firm capabilities.	Open, structured and intentional knowledge system. Much of this active management of knowledge acquisition rests on deliberate acts of cooperation with other actors.

Sources: Adapted from Bell and Albu (1999); Dantas and Bell (2009); Crouch et al. (2009) on Tibro; Hellström and Hirschsohn (2007) on the Southern Cape.

Both assessment templates Tables 6.2 and 6.3 above provide damning evidence of a lack of activity by firm owners and managers in the Southern Cape furniture LIPS in expanding learning opportunities through interactive means, neither internally within the firm nor externally with other actors. The reality is that learning takes place mainly through 'learning-on-the-job' attained internally, with only a few examples of firms searching externally for additional sources of new knowledge and learning experiences. The knowledge system underpinning furniture manufacture in the Southern Cape, consequently, is best characterised as a closed system.

CONCLUSION: LIPS PERFORMANCE

Given the two assessment templates above, firms in the Southern Cape furniture LIPS can accurately be described as weak innovators. The innovation system itself has evolved minimally with low innovative dynamism and interactive abilities. These firms confirm the typology developed by Bell and Albu of passive responses. Passive firms are unaware of the need for technological change. They do not know what they could improve, or how to go about implementing this improvement. These firms are characterised by a crisis style of management with little, if any, long-term strategic focus. They are often family owned with a strong local orientation, isolated from the larger national and global economies (Bell & Albu 1998; Rush et al. 2007).

In contrast, reactive firms recognise the need for technological change but are unclear about how to respond. Their internal resources are often limited and they lack the key skills and experience, so they tend to be reactive to technological possibilities but are often unable to shape and exploit these developments to their advantage (Bell & Albu 1998; Rush et al. 2007).

The majority of firms surveyed in the Southern Cape furniture LIPS are clearly passive firms, with a small grouping of mostly bespoke firms displaying reactive firm characteristics. The dynamic bespoke and mass customisation firms such as Creative Design, Coastal Furnishing and Ergo Office Designs have developed reactive capabilities because they have purposefully sought export opportunities, undergone design and marketing training, attended international trade expos, adopted new designs based on African motifs, used CNC technologies and CAD-CAM (computer automated design and manufacturing) software, and cooperated with each other to a limited extent. In sharp contrast, all of the existing mass production firms in the LIPS are passive and are suspicious of interactions and cooperation with any other players, do not purposefully search for new knowledge and new design ideas, have not adopted any of the new digital technologies, do not engage in training courses nor have links with ET organisations, and operate purely on the basis of cost considerations. This analysis suggests that future policy interventions may be able to assist reactive bespoke firms in strengthening their design and digital capabilities and, upon that basis, strengthening their export opportunities. However, passive mass production firms will be difficult to rescue if they remain locked in to failed low-cost models of production.

CHAPTER SEVEN

Clustering, collective efficiency and intermediation in the furniture LIPS

The study of clusters is important to this book for several reasons. First, the furniture industry has a natural inclination to cluster, as was indicated in Chapter Two. This practice occurs because of the limitations on forging economies of scale and scope, the uncertainty and volatility of the demand environment, and the constant demand for product variety. All of these issues require the industry to develop flexibility to produce a diverse range of goods with speed and quality. Collective production arrangements as offered up by clusters – such as each cluster firm agreeing to specialise in certain products whilst others concentrate on different components or items – provide solutions to these problems for the furniture industry.

Second, and more importantly, many clusters are governed by intermediary structures. Szogs et al. (2009) and Ramirez et al. (2017) suggest that intermediaries are crucial because they enable clusters to access new external knowledge sources – a task not easily completed using only internal industry resources. These authors also argue that the role of intermediaries within clusters evolves over time and may extend from harnessing external knowledge resources into coordinating joint actions and new investment initiatives, thereby placing them at the centre of the network of cluster organisations. In short, intermediaries have the potential to add significantly to the improved governance of clusters, both through building external knowledge resources and influencing the internal governance structures to become more inclusive of small suppliers in sectoral value chains.

Third, it is important to note here that different concepts (clusters, industrial districts and LIPS) are related, with each focusing upon the economic significance of locality and agglomeration but all emerging from differing theoretical traditions and historical eras. Lastres and Cassiolato (2005) note that whilst clusters focus on the production arrangements in agglomeration contexts, LIPS as a theoretical concept is focused upon much wider systemic dynamics. It focuses on the larger innovation system underpinning localised production arrangements such as clusters. A LIPS may comprise but is not limited to a cluster. The LIPS approach represents a much broader concept, and includes all economic actors in the locality, together with all the regional assets such as ET organisations, incubators, NGOs and civil society players. However, the term cluster

is more widely understood and used than the term LIPS in the Southern Cape. As a consequence, care has been taken to ensure the term cluster is used in this text only when the government policy documents or interviewee comments make use of this term. It is understood to be a narrower concept than that of a LIPS.

Fourth, clusters have been promoted by the South African government since the advent of democracy in 1994 – with limited success. The idea of the state promoting cluster policies was first raised by the ISP in 1990 (see Joffe et al. 1995) – an initiative of Cosatu. In addition, the Monitor Group formed by Michael Porter, US author of the concept of comparative advantage, was engaged by the National Economic Development and Labour Council to consider the possibility of developing seven clusters in South Africa, including furniture, to enhance the competitiveness of its manufacturing sector (Porter 2003; Porter & Ketels 2009). The DTI of the new democratic government after 1994 continued working with the ISP and launched the Industrial Cluster Initiative in 1996 with the assistance of the IDC. Twelve potential clusters were envisaged including furniture. The DTI produced a report in 1998 that set out what was required for the timber value chain in the Southern Cape to become globally competitive – it proposed the adoption of a cluster approach in the Southern Cape, with specific emphasis upon higher value-added furniture manufacture (DTI 1998). This injunction to adopt clusters and collective efficiency measures has been loyally articulated by several state economic actors – with no real action taken – as will be seen in the next four economic initiatives.

This chapter uses the experience of the four cluster/intermediary proposals as a means of understanding why this leg of industrial policy has had such poor outcomes over the past 30 years.

This chapter evaluates several clusters and other collective efficiency initiatives and proposals launched in the Southern Cape by private firms, NGOs and government. The aim of this assessment is to study both the demise of the natural furniture cluster that historically evolved in the Southern Cape, as well as to examine the benefits the cluster might enjoy through effective assistance from intermediaries in the governance of the cluster. Four such cluster initiatives are studied. All seek to turnaround the ailing furniture sector within the region in which they operate. This promotion of clusters has occurred, however, in a context of deindustrialisation, the privatisation of state forests and a predatory lead firm (Steinhoff). It also occurs while the publicity around the 4IR increases in the press and amongst societal leaders, particularly regarding the importance of keeping abreast with the latest digital technologies.

The discussion focuses empirically on four furniture cluster, intermediation and collective efficiency initiatives – two focus on the Southern Cape, whilst the other two are national policy documents that propose clustering for the furniture industry. The four projects and proposals evaluated are:

1. The work of two ‘boundary spanner’ entrepreneurs who sought to develop private sector led cluster initiatives in the Southern Cape;
2. The SDCl, a furniture cooperative in George;

3. The 2016 CSIR furniture cluster report, focusing on Roodepoort, Gauteng; and
4. The 2020 DTI Master Plan focusing upon the national furniture Industry.

A fifth section analyses the lessons learnt from these four projects. The chapter concludes by seeking to establish whether intermediaries would be able to overcome the problems of low trust, weak state development abilities, poor firm-level technological capabilities, a pervasive short-termism, limited budgets, short timelines and non-expert staff and, in so doing, improve the chances of these cluster initiatives succeeding.

BOUNDARY SPANNERS

The Southern Cape furniture manufacturing community has witnessed at least two cluster-type initiatives motivated by individual entrepreneurs and civil servants in the region – entrepreneurs that the social capital and innovation literatures term boundary spanners. These individual actors have interactional expertise that assists in winning over wavering actors. According to Collins et al. (2010: 53), a person with interactional expertise ‘can move smoothly between different social groups, translating the concerns of one into the language of the other and vice versa’. In the innovation literature, Giaretta (2014: 679) describes ‘trust builders’ as senior managers or retired business owners who have accrued extensive business experience in the local economy and are available to devote part of their time to supporting other local enterprises.

This chapter examines two such ‘trust builders/boundary spanners’ embedded in the Southern Cape furniture industry – Ernie Fritz of the former firm City Wood and Stefan Buys, owner of Rustic Furnishings. Both boundary spanners have played a very influential role in trying to be catalysts in the formation of a furniture cluster in the Southern Cape LIPS over the past two decades.

The City Wood cluster

As indicated in Chapter Six, Ernie Fritz was an entrepreneur on the lookout for opportunities in manufacturing in the late 1990s. He responded to the emerging DTI policy framework on clusters and proposed a mass-production furniture plant (called City Wood) in George, that would consciously aim for high volume production directed at export markets. Fritz was a unique businessman in the sector at the time – he was prepared to cooperate and coordinate the efforts of the collective that would make up the cluster:

I was a very open guy. I invited other suppliers to come to my factory and to tell me what I was doing wrong. I told them that there is an export market out there that none of us can fulfil on our own, we need to hold hands and cooperate, not compete. So it was a completely fresh approach. (Interview with Ernie Fritz, CEO of former firm City Wood, 18 May 2017)

Another supporter of the cluster idea was the Saasveld Forestry College situated outside George. This college originally only offered forestry qualifications that could be used for employment in sawmills and timber yards. Fritz began negotiating for wood technology and furniture manufacturing qualifications to be added. Saasveld and City Wood eventually reached an agreement on the wood technology course (for sawmill workers). Negotiations for the furniture manufacturing course failed.

As indicated in Chapter Six, the IDC co-funded the initiative and promoted a Malaysian-influenced cluster model with City Wood operating as the lead producer. Suppliers were sub-contracted to undertake piecework components when needed. The concept saw the cluster grow slowly between 1999 and 2003, bringing in more players as it became more successful. However, City Wood was short-lived. Jeanne le Roux, CEO of Creative Design, a George based bespoke firm, was approached by City Wood to join the cluster initiative. This was her response:

They were aiming to do a massive cluster and get large export contracts, do a lot of the machining and stuff themselves, with the best technology at the time, and with unskilled labour. Whatever they could not do there, for instance design or prototyping and product development, they would involve a company like Creative Design and say okay, you do it. We actually made a mock-up thing which they then sent to America and they really tried to get into the American market. It was the best time to be exporting with favourable exchange rates and they set up the whole thing, but it cost an absolute fortune, they brought in all these consultants and people that were paid a lot of money but could not, in actual fact, make a piece of furniture or understand the process of making a piece of furniture. It was a lot of fluff and a lot of money, a lot of technology, but at the heart of it, maybe not the right people to manage it. I made a decision not to join and fortunately it turned out well for me. It closed because the moment the market went down, City Wood just did not work. One of the main problems faced throughout was people did not really agree to cooperate and collaborate. (Interview with Jeanne le Roux, owner of Creative Design, 6 May 2016)

Buys identifies a further problem with the City Wood model that contributed to its failure as a cluster and competitive enterprise. Many of the smaller suppliers had insufficient capacity to go to scale and, thus, failed to deliver on time and/or submitted questionable work in terms of quality:

These suppliers didn't come to the party and suddenly Fritz was in a big jam because they had this big order that now needed to be filled. That was the first blow – everyone just said we can do, we will supply on due date. But they didn't really perform on time or up to the standards that were expected. (Interview with Stefan Buys, CEO of former firm Rustic Furnishings, 22 May 2017)

After the collapse of the large order from the USA, City Wood faced difficulties – they had made a huge investment and now faced considerable debt. According to Buys, they operated ‘on the back foot the whole time’, and eventually they were forced to sell to recoup some of the investments poured into what was otherwise an innovative cluster idea.

Buys’s proposal to George Municipality

Stefan Buys, the second prominent boundary spanner within the Southern Cape furniture industry, made a proposal to the George Municipality in July 2011 based upon cluster models that were very successful internationally. He became aware of these models both through his export-import business in furniture, meeting manufacturers from these regions and additional desktop research:

I have always done my homework on my competitors and the markets – you learn from your competitors, and you try to be one step ahead. So I’ve been on the lookout for ways to rekindle the furniture industry somehow because it used to be strong in this region. How do we change the situation before we lose all the skilled guys, and the whole industry goes totally dead? In all of my research I came up with several cluster models. The best one was Tibro in Sweden. In fact, I was invited by Sweden’s SIDA to fly to Tibro with a number of other manufacturers. Everyone has studied Tibro. The long and the short of this model is that it was initiated by government who put in a lot of money into infrastructure like their marketing and coordination units, and their training centre. They’ve got a number of skilled people there that do international marketing for a number of local factories. They also help them to specialise, and this is something we need to do here as well. They also started sourcing large volumes of timber supplies on behalf of the small firms. The interesting thing is that it was launched by government when the industry was in distress. They said this sector is struggling so let’s sort it out, let’s organise them and let’s get them internationally competitive. (Interview with Stefan Buys, owner of former firm Rustic Furnishings, 22 May 2017)

The failure of Buys’s boundary spanning

Buys and a team of supporters, including Justin Brown (working for the Southern Cape Economic Development Forum) and Justine Visagie (then a senior official in the George Municipality), hosted a workshop on 13 July 2011 with Furntech and George Municipality entitled Investigating the Cluster Concept: Options to Improve the Offerings and Marketability of the Furniture Industry in the Garden Route. The workshop was well attended by delegates from furniture firms, the local municipalities, and state development agencies. Buys proposed his own import-export business as the intermediary for the cluster – not for his own ‘rent-seeking’ purposes but as a genuine offer to contribute an already existing structure to morph into the administration and coordination unit of the future cluster. Buys’s cluster idea was visualised as a small initiative, at least initially – to

win over approximately 10-15 small suppliers in the Southern Cape. Unfortunately, the responses to his proposal and to the general purpose of the townhall meeting – to build a furniture cluster – were generally negative. Buys depicts the meeting as full of the distrust that continuously defines relations between neighbouring firms:

I hoped the share offering would solve this problem with my cooperative idea. The benefits are, firstly, that firms can cover for each other – if one factory is running a bit slow, then others in the cluster who are doing faster work, can take over the backlog of the first firm. Next time, the benefiting firm helps the others who are behind in their orders. They're all small shareholders in the joint project and should feel included. (Interview with Stefan Buys, CEO of former firm Rustic Furnishings, 22 May 2017)

All I remember of that specific day when my proposal was under discussion was all the negative things said, the guys were so critical. They all said: it won't work, you can't do that, and every time I kept on asking them, "Alright, where's your alternate proposal. Give me a possible solution or other options." But no one came up with any other vision. All they did was take apart our proposal. (Interview with Stefan Buys, CEO of former firm Rustic Furnishings, 22 May 2017)

The initiative lost steam when Buys fell sick and Justine Visagie of the municipality left for a new job in Pretoria. No one else was prepared to try to form these kinds of collective initiatives – Buys's boundary spanning had run out of steam.

Southern Cape firms' views on clustering

The interviewees in the Southern Cape were divided regarding the benefits of clustering initiatives and who would lead them. A minority grouping of more entrepreneurial manufacturers saw advantages arising from such a proposal but were unsure if the right leadership and funding could be found to make it succeed. Nico Prinsloo of Coastal Furnishing believes a cluster concept for the Southern Cape furniture industry could work, but it would require significant state support and investment:

I think there's merit in the idea of a cluster but unfortunately there are realistic hurdles to it that create problems for the industry. I think it can work but to find a model that works financially for everybody can't be done without external help. A good example of that is Tibro in Sweden. I've been to Tibro, and the decisive factor there is a massive investment from local government, and I think unless you get that kind of investment to drive it, you're not going to get it off the ground. (Interview with Nico Prinsloo, CEO of Coastal Furnishing, 2 June 2017)

Another key issue for Prinsloo is to choose a leadership model and overall structure that can drive the cluster initiative:

I think each and every one of us is so involved in our own business that to try and get involved on our side is difficult. You actually need a CEO of a structure with a big budget to lead something like this. Someone who can play a middleman role and who brokers the deal. I think if you look at the one thing that kills us in this area for instance is transport. We're transporting raw materials down here at a cost. Our market is not here, it's the rest of the country so we're all immediately sitting at a cost disadvantage to somebody producing in the major centres, and that's where I can see stuff like clustering working. Even bigger, more expensive technology like CNC machinery, here we are talking three million Rand a machine plus the software that goes with it, plus somebody capable of being able to do three dimensional renderings and converting that into CNC code to feed that machine. That's where something like a shared technology centre could really work. (Interview with Nico Prinsloo, CEO of Coastal Furnishing, 2 June 2017)

Pieter Adams, retired owner of an office furniture firm in KZN and currently a resident of George, believes the main impediment to an upturn in the Southern Cape furniture industry is a steady supply of competitively priced raw materials. In addition, Adams believes a cluster model is possible if a large retailer or sawmiller in South Africa can be convinced to join and play the developmental role of a lead firm along the supply chain:

You need to get someone that's willing to produce raw material at competitive prices. This firm will need to produce the hard and soft woods, and turn our pine trees, where we should be very competitive, into a good timber supply. We're competing against southern hemisphere countries like Brazil, with excellent pine. But if you are going to put this cluster initiative into the hands of someone that doesn't have those skills, I would worry how it would work. There must be a driver, there must be a management team that goes and decides what is the business plan for creating the raw material. How is that raw material going to become a workable product that can be sold? After it's gone through the mill, the timber can be sold to a furniture manufacturer that's got a market overseas for specific products. So that's how you're going to add value. So you need someone like Steinhoff for instance to play ball, a company that has a footprint all over the local economy and overseas exposure. They've got access to the best artisans, to everything of the best. The initiative will obviously need the backing of the government as well, especially a promise not to interfere in its management. (Interview with Pieter Adams, owner of KZN furniture firm and George resident, 23 May 2017)

With the 2017 fraud revelations and accusations that such behaviour adheres to a form of predator capitalism (Rose 2018), it is clear that Steinhoff would not perform the cluster function very well. The track record of other large firms – sawmillers and retailers – is not much better. But there are other players – such as Coricraft and Weylandts furniture retailers – two large South African firms that serve here as examples of businesses that could be persuaded to participate in a cluster initiative.

As Chapter Six illustrated with respect to the lack of trust and cooperation in the Southern Cape furniture LIPS, the critics and cynics are plentiful. Prinsloo of Coastal Furnishing maintains there is 'fatigue' among manufacturers in the Southern Cape regarding the issue of clusters because it has been debated in policy fora for too long, with little success. Also, the Southern Cape furniture industry is smaller than the industry in Gauteng, KZN and the Western Cape, so a cluster proposal supported nationally, in his view, would rightfully go elsewhere, not the Southern Cape. This prediction is precisely what has happened with the CSIR proposal to start a cluster facility in Roodepoort (CSIR 2016) – an issue that will be discussed later in this chapter.

THE SCHOOL DESKS AND CONSERVATION INITIATIVE (SDCI)

The SDCI project is not a cluster, but rather, a state-led experiment with a cooperative structure. The SDCI has three overarching goals, namely:

1. To add value to invasive alien plant (IAP) biomass and, thus, subsidise the clearing of IAPs;
2. To create sustainable jobs (including the development of skills); and
3. To alleviate poverty through the provision of short-term employment (Ward et al. 2018: 12).

The SDCI's main objective is to establish viable furniture factories, making products needed by government, using wood from invasive plants, creating jobs for 3 025 beneficiaries, working at Expanded Public Works Programme wage rates, and producing high-quality products at costs lower than if government were to buy them on the open market (Ward et al. 2018).

The SDCI has seven factories nationally, with one located in George. The SDCI is a relevant case study of collective efficiency and intermediation. It aims at improving the management of the complex cross-departmental coordination challenges facing large government projects and building furniture manufacturing competences amongst previously unemployed workers. It is an initiative that operates from the offices of SANParks, an agency within the Department of Environment, Forestry and Fisheries (DEFF) that has a mandate to protect and manage the national parks of South Africa. The SDCI was launched in 2010 after a successful application to the Jobs Fund. The school desks and chairs are manufactured from timber extracted from the removal of invasive trees. The income derived from the sale of these desks and chairs to the government are then used to fund the further removal of alien biomass.

IAPs pose a 'significant threat to South Africa's biological diversity, water security, the ecological functioning of natural systems and the productive use of land' (Ward et al. 2018: 1). The reduction of the costs and risks associated with IAPs was one of the main stimuli behind the establishment of the Working for Water Programme in 1995. This programme has cleared over one million hectares of IAPs and has provided jobs and

training to more than 20 000 people per annum from amongst the most marginalised sectors of society (Ward et al. 2018: 1).

Problems emerge around governance

Although a bold initiative on many fronts, the SDCI's management and governance soon became a major problem. Ideally, management functions should have been handed over to an appropriate intermediary (referred to as an 'independent trading entity' such as a Section 21 company within the SDCI project proposal) given that the manufacture of school desks was not SANParks's core business. In fact, it was a condition of the Jobs Fund that such an organisational arrangement be set up. This system was not implemented, leaving the SDCI in a very vulnerable position, namely that of having to behave as a commercial entity while constrained by the bureaucracy and slowness of the state.

The location of the SDCI within SANParks meant it needed to operate in the way the very successful Working for Water operated. However, this model was based upon the Expanded Public Works Programme (EPWP) in which recruited employees were paid an internship wage that was significantly lower than the wage stipulated by the Bargaining Council for the furniture industry. Private sector contractors were used to employ EPWP staff, and the SANParks then employed the contractors. The responsibilities of the contractors included training, tree harvesting, planking and factory production work. Unfortunately, this model did not work effectively within a commercial factory environment because it is founded upon arms-length employment through the contractor and is impermanent – both of these factors fail to create the necessary ownership of the production process essential for an economically viable furniture enterprise (Ward et al. 2018).

The project goes to scale

A second problem was that when the SDCI went to scale in order to produce the required 250 000 desks, it needed nationally consistent administrative standards and systems – yet these structures were not developed independently of the very bureaucratic systems applicable to the national parks. The SDCI also never received any professional consultant help to put these systems in place. National coordination fell under a Chief Director in Pretoria who was also responsible for administering Working for Water and Working for Fire. In short, national coordination was thinly spread. The SDCI expanded very quickly, and backup administration and systems were simply too slow to give the necessary support (Ward et al. 2018).

Access to feedstock

A third problem that emerged within the SDCI was the difficulties experienced in accessing and harvesting the alien trees – the majority of which were located on private property belonging to farmers and commercial foresters. Access to the IAPs was

supposed to have been facilitated by the passing of the *National Environment Management Biodiversity Act* (NEMBA) that required landowners to clear certain categories of alien plants from their land. However, there have been significant challenges implementing NEMBA and, in many instances, according to the managers of the SDCI interviewed, the access to biomass relied upon personal relationships. A private contractor that was sourcing timber for the SDCI factory noted:

There is plenty of feedstock for the next ten years but the challenge is getting access to it. Government has all the legislation in place but it is just not being implemented at all. Timber is thus being sourced through personal relationships but it is difficult. We are being forced to work from hand to mouth with many farmers refusing to allow us access to the timber unless we pay them. But the timber has zero value if it wasn't for the SDCI. (Ward et al. 2018: 53)

In the Southern Cape, government privatised many of the forestry plantations with the agreement that the new landowners would remove alien plants and leave the timber at the roadside. This arrangement was supposed to yield 400 cubic metres a month. However, no clearing took place, and no timber was forthcoming from the landowners who had benefited from the privatisation of government plantations. Without the enforcement of current legislation, access to this alien timber has proven difficult:

We haven't received one log out of the entire landowner initiative in the Garden Route. We're supposed to be getting as much as four hundred cubes in a month, every month – but nothing has come. Nothing is happening on this front – no clearing is taking place. (Interview with Michael de Beer, senior official of George SDCI factory, 7 June 2017)

Spiralling costs

A fourth problem facing the SDCI has been the spiralling cost of the desks that has increased beyond the commercial price for similar products bought on the competitive market. It became clear that the programme was costing a substantial amount of money and the intention to generate a surplus, or at least break even, was not being realised. In a review of the project, Ward et al. (2018) concluded that the programme was not financially sustainable.

Measuring costs in this kind of cooperative enterprise is of course difficult because the reasons for producing these products are not just commercial but also social and environmental – but there are no indicators that measure the successes of these latter objectives. The measurement of the value of the project by government and other players was purely market-related and monetary (the costs associated with production versus the selling price of the school desks and chairs) whilst ignoring the value of the social and environmental aspects (for example, the clearing of alien biomass, skills training, job creation and giving people the dignity of work – all key goals of the cooperative).

Another problem related to the costs of the SDCI was that the Department of Basic Education (DBE) did not make timeous payments – at one point, the DBE owed thirty million rand for the desks. If it was not for SANParks being able to carry the factories financially, they would have closed a long time ago. Late payment is a systemic problem throughout government departments and severely constrains the work of initiatives such as the SDCI. The debts became debilitating, thus, forcing the scaling down of production – SANParks were locked out of the factory in George by the landlord because of the government's failure to pay the rent and electricity. Perhaps the greatest blow to this public-sector led project was that it had to eventually recruit private sector help in producing the number of desks required from government, using commercially grown timbers and not the alien wood the project was intended to clear.

Attitudes of the private furniture sector

Relationships between the SDCI and the furniture manufacturers in the Southern Cape have turned sour. This situation is in part because the project was started without consulting the private sector and informing them about the aims of the SDCI and their proposed involvement. Accusations were made that the SDCI is competing unfairly with the private sector – for example, paying an EPWP wage that was significantly lower than the stipulated minimum wage payable within the sector for unskilled workers. The SDCI has also been accused of poaching skilled artisans, kiln workers and management personnel to run the project in George. Local manufacturers believe they have been unfairly forced out of the school desks market.

The management of the SDCI maintained that local furniture manufacturers do not see the benefits the initiative has brought to George. The managers stated this project brought new business through the by-products, hiring of kiln space and transport from which the local timber related industries have profited significantly (previously their kilns were standing empty):

We must not forget that the George-Knysna timber industry was subsidised by the old Apartheid government, so the entire industry was born through subsidies on wood, land and electricity. So now, they're saying that we're subsidised. This is a bit disingenuous. A nice irony. (Interview with Michael de Beer, senior official of George SDCI factory, 7 June 2017)

The interviewee further stated that although many of the SDCI activities could have fitted well into a cluster concept with cooperation from the private sector, this collaboration did not happen:

There is a little Mafioso that runs the furniture industry in the Garden Route area. There are very few businesses, and they all talk to each other, and they all stand together, and if they don't like you that's it, you're totally ostracised. (Interview with Michael de Beer, senior official of George SDCI factory, 7 June 2017)

A further problem was the conflict with the Furniture Bargaining Council that had insisted the SDCI factory subscribes to the national minimum wage and not the subsidised EPWP rate. This payment includes a higher pay grade plus pension, leave pay and medical aid – all of which the SDCI was supposed to be exempt from due to its EPWP status. The company Eden Meubels laid a complaint with the Furniture Bargaining Council to intervene. The case was taken to the Commission for Conciliation, Mediation and Arbitration (CCMA) by the Bargaining Council in George. According to the SDCI management, Eden Meubels engaged the services of a Gauteng arbitrator, who found in favour of the SDCI and the Furniture Bargaining Council lost the case.

Attempts have been made to resolve these tensions. A formal agreement between the SDCI and the SAFI was signed in 2017. There are significant differences of opinion within and across the various LIPS actors on the role that government should play in the establishment of support for the SDCI. The low labour costs and investment in capital equipment enabled by the EPWP programme and Jobs Fund support, creates certain advantages for the SDCI relative to the private sector. However, in the view of the SDCI managers interviewed, this benefit is more than cancelled out by the fact that the SDCI is using alien invasive plants with all the challenges that this introduces into the value chain. It must also be noted that the labour-intensive methods used by the SDCI create many more jobs than the private sector would create commercially for the same product output (Ward et al. 2018).

The SDCI is the kind of project that South Africa readily needs – it promotes labour-intensive, low-skill employment for those who are unemployed. It intervenes in resolving a major environmental problem of invasive alien plants, and it engages with government procurement as a lever for bringing new actors into the wider furniture value chain. However, it hit a major constraint when confronted by government's poor record of ceding over governance functions to the private sector or non-governmental organisation (NGO) intermediaries, and this attitude limited the ability of the SDCI to function optimally. Government appears unwilling to relinquish control of its flagship project to a third-party intermediary, even though it is failing to achieve most of its stated objectives.

THE CSIR PROPOSAL FOR A FURNITURE HUB IN ROODEPOORT, GAUTENG

Even though there has been little success with the cluster and joint action initiatives so far described in this chapter, the lobbying and policy activities of government and the DTI have continued to promote clusters as a solution to the woes of the furniture industry. There have been two new policy initiatives in recent years, the first led by the CSIR in 2016, and the second being the *South African Furniture Industry Master Plan* (TIPS 2020a), launched by the DTI (now the DTIC) in 2020 and finalised in 2022. Each will be discussed briefly below.

The CSIR was approached by the DTI in 2015 to review the work of its seven furniture incubators run nationally by Furntech, and to make proposals for a recovery plan for the sector. The study sought to gain an understanding of the challenges and opportunities

small manufacturers face, and to recommend an intervention that could ‘improve the productivity and competitiveness of Furntech graduates and small furniture manufacturers throughout the country’ (CSIR 2016: 1). The final report would offer a business case for the project most suited to improving the productivity and competitiveness of small furniture manufacturers. After an extensive consultation process in 2015, the research initiative approved a furniture manufacturing hub model as a possible solution. The purpose of the hub would be to assist the growth and development of small furniture manufacturers and provide a vehicle for supporting the sector within a given area in South Africa.

Further specifics of the proposal are that the hub is provided with funding for the first ten years of its operation, and that an independent legal entity or NGO is created to own and manage the hub. Such a body would potentially perform an intermediary role. The CSIR also recommended that a suitably qualified and experienced management team be appointed to implement and run the hub (CSIR 2016).

The CSIR report proposes that the location of the hub be in the Roodepoort area of Johannesburg, that has optimal supplier, logistical and related support services for the several large and small furniture mass production firms already based there, to achieve better vertical and horizontal integration of furniture manufacturing processes. The hub would use the existing furniture infrastructure in the Roodepoort area, including a Furntech incubator and offices run by the Small Enterprise Development Agency. The services to be offered by the hub include the provision of several key business services and technical programmes needed by small furniture manufacturers (CSIR 2016).

The CSIR report claims that the impact of these hub support services would increase productivity through streamlined provision of inputs, stronger supply chain networks, the application of world-class manufacturing practices, appropriate business systems and new technology, access to real-time information, potential increases in the economies of scale for companies in the same sector, and increased capacity to target larger and foreign market opportunities. The hub would also fill the role of a post-incubation function for start-ups newly emerged from Furntech incubators (CSIR 2016).

The DTIC (DTI was renamed in 2019), CSIR and SAFI have made no further announcements about the progress of implementing this plan. There is a good chance its future will be decided by yet another DTIC industrial policy foresight exercise – the 2020 *South African Furniture Industry Master Plan* (FIMP). Master Plans are being formalised for all economic sectors by the DTIC as part of the sixth administration of government led by President Ramaphosa. The DTIC has published four industrial plans for the furniture industry since 1994 – in 1998, 2008, 2016 and 2020. The 1998 document set the context for the establishment of the eight Furntech incubators across the country. However, the three other DTI policy documents (2008, 2016 and 2020) have had no realisation of plans or implementation and, hence, no major impact. Jansen (2002) has called this phenomenon (the proliferation of policy texts with no associated action or implementation) – as ‘symbolic policy’. It provides an overarching symbolic discourse about societal transformation aimed at acquiring broad legitimacy for government irrespective of whether production practices on the ground are being changed or not.

THE FURNITURE INDUSTRY MASTER PLAN, 2020

Despite the state's non-action on all of these DTI-proposed clustering initiatives for the furniture industry, the department released its most recent furniture cluster proposal in 2020. The *South African Furniture Industry Master Plan* (FIMP) draft strategy was released in that year for consultation and debate within the sector. It was produced by the Trade and Industry Policy Studies (TIPS) research unit aligned to the DTIC. The strategy has four pillars of action, with a number of deliverables in each pillar. These include:

Pillar One: Increased opportunities for the industry

Currently, the state consumes almost 33% of local furniture sales annually. However, it also purchases a significant volume of imported furniture, and so the Master Plan seeks to increase the local content of the state's procurement of furniture to 90% with largescale SMME participation. The plan also seeks to increase the local industry share of South African retailer sales to at least 80% and to comprise 50% of all furniture imports into the South African Development Community (SADC) region (TIPS 2020a: 12).

Pillar Two: Increased social transformation

The Master Plan proposes a broad-based black economic empowerment (BBBEE) charter for the industry, with BEE weightings for family-owned furniture SMMEs developed differently from what has been the case in other industries. Instead of the usual emphasis on part-African share ownership of the firm, a new approach for family-owned SMEs would prioritise production activities such as training, new technology, new products and processes, and ultimately, improved value chain participation. The plan seeks to increase the number of black- and female-owned SMMEs in local supply chains. It also proposes increased manufacture of affordable furniture in township economies as a substitute for cheap imports from China and Southeast Asia (TIPS 2020a).

Pillar Three: Improved costs of production

The DTIC is proposing to continue with its programmes of support for recapitalisation, retooling and new machinery upgrades through an expansion of its existing support programmes. It also speaks of support for cluster-style joint actions, for example, funding support for access to shared cutting-edge technology and manufacturing facilities for SMMEs, possibly through clusters or shared facilities, such as the Furntech incubators. The plan proposes reducing input costs through a process of shared procurement models. The shared facilities suggested include the setting up of a buying platform to provide options for bulk buying and insurance (TIPS 2020a).

Pillar Four: Improved matching of skills supply and demand

The Master Plan also proposes focused action to increase the number of learners enrolling for apprenticeship training at furniture SMMEs. It specifically recommends solutions be found for the lack of opportunities for workplace exposure and experiential learning. Currently, many apprentices study formally through the colleges with SETA support, but

struggle to get workplace experience with employers, thereby failing to complete their full apprenticeship training (TIPS 2020a).

The Master Plan proposes a representative structure to manage the roll out of the plan initiatives. The Executive Oversight Committee (EOC) will undertake regular reviews, problem solving, trouble shooting and monitoring and evaluation activities. The EOC will be chaired by the Minister of Trade, Industry and Competition. The SAFI, organised labour and the CEOs of strategic companies will also be represented on the EOC. This Master Plan, however, does not comment on differing models for running such a structure. It gives no guidance on whether the governing structure will operate as a bureaucratic entity measuring minimal compliance with governmental targets (such as acquiring 90% local content for the state procurement of furniture), or as a dynamic intermediary body able to motivate the key actors to interact, engage in dialogue and agree on a way forward (TIPS 2020a).

ANALYSIS OF FINDINGS

Several empirical and theoretical issues have been raised in this overview of the collective efficiency of the furniture industry in the Southern Cape. Central to this review, as indicated in the introductory section to this chapter, is the question of the relationship between a cluster and a LIPS. A further issue is the extent to which the Southern Cape cluster has failed to harness the benefits of collective efficiency. And lastly, the role of large firms in the wider forestry/timber/furniture sector are interrogated. They appear to be the absent players in efforts to develop clusters in the Southern Cape.

This chapter adopts an evaluation instrument designed by the author based upon six criteria that emerged from the literature reviews on clusters. The six criteria to be applied to evaluate the two actual cluster projects and two cluster policy proposals discussed above are as follows:

1. The extent to which the cluster or proposal utilises and strengthens the resources of the LIPS;
2. Social embeddedness and the role of lead firms;
3. Governance in the form of either centrally-imposed bureaucracy or independent intermediation;
4. Harnessing external economies;
5. Engaging in joint action; and
6. Obtaining government and other external support.

Table 7.1 provides a summary of the core cluster and collective efficiency evidence presented in this chapter against the six assessment criteria listed above. The template provides a synopsis of the success (and failure) of each of the initiatives discussed against the key theoretical issues raised in the cluster and LIPS literatures – such as the localisation of clusters within the LIPS, harnessing externalities and taking joint action. What emerges overall from this summary is a strong sense of failure across all the initiatives, with few

lessons having been learnt by the state along the way. In addition, the same narrow approach to clusters adopted over a period of two decades appears to be continuing.

The extent to which the cluster utilises and strengthens the resources of the LIPS

Chapter Two highlighted the relatively contested relationship between innovation theorists in the national innovation systems camp and those working on clusters in GVCs. The tensions relate to criticisms made by innovation studies theorists who do not believe that clusters on their own resolve the weak technological capabilities of SMME suppliers, especially in developing economies. Innovation theorists argue that a local innovation system or LIPS is a more fully encompassing concept to describe the local economic 'system' and all the actors and role-players that exist in such a spatial agglomeration. Conceived and implemented narrowly, new cluster developments may not lead to any innovative activity occurring even though the GVC may have incorporated local suppliers who undertake the low value-added and relatively routine activities of the chain (Fagerberg et al. 2018). This outcome is because the narrowly based cluster idea has not relied upon developing the wider local system of innovation underpinning economic activity in the region, with all of its potential social relationships and interactions, resources, firm-based technological capabilities, anchor tenants and regional assets (Breschi & Malerba 2005).

The evidence provided in Table 7.1 and in the descriptions made throughout this chapter reflect a cluster approach that does not recognise the necessity of working with the full 'system' of inter-linked organisations and actors that comprise the LIPS in the Southern Cape. The main focus of the two cluster initiatives and the two proposals has been on expanding economies of scale through the creation of collective efficiencies (externalities and joint action) and increased exports – and little attention has been given to other issues, such as changing the pejorative attitudes of large firms towards cooperation with SMMEs, the development of local R&D, the role that could be played by local ET organisations in building local SMME capabilities, and the contributions of the local authorities and other state actors. Indeed, key aspects of an embedded LIPS are slowly eroding over time in the Southern Cape – for example, the availability of high-quality timber and a skilled labour force – with the linkages between ET organisations and firms being almost non-existent. The historical image of Knysna and George as furniture towns is slowly dissipating.

The importance of embeddedness

A key feature of a LIPS is the concept of 'embeddedness'. Evolutionary economists believe that all market and non-market organisations are held together in a single system through the concept of social and economic 'embeddedness'. It is the 'glue' in the long term that holds together and integrates the contributions of a wide array of actors (Nelson et al. 2018: 24). Embeddedness creates links between firms and local authorities, VET organisations, skilled and semi-skilled workers and specific sectoral requirements. This connectivity occurs because embeddedness impacts both socially and culturally, for

Table 7.1: Assessment of cluster and intermediation efforts in the Southern Cape

Name of initiative	Embeddedness – use of local innovation and production system (LIPS)	Embeddedness and the role of the lead firm	Cluster governance – centrally imposed bureaucracy or independent intermediation	The harnessing of external economies	The taking of joint action	Extent of government and other support
<i>The cluster proposals of two local 'boundary spanner' entrepreneurs</i>	The initiatives recognised problems with skilling a new labour force and proposed increasing apprenticeship and training in the LIPS	Steinhoff has played a negative role as lead manufacturer and retailer, buying out competitors and suppliers, focusing on mergers, acquisitions and firm closures rather than the growth of the industry in the region	Private individuals and their private companies performed the role of lead firm and lead actor in these cluster initiatives. Their role of orchestration was similar to that of intermediation	The proposals sought to exploit all of the historical externalities that had emerged in the region – timber supplies available locally, a skilled workforce, suppliers and customers close by	The proposals sought joint action around training and shared marketing and logistics	Support from business and the IDC
<i>School Desks and Conservation Initiative (SDCI)</i>	Local innovation system did not benefit from the poor cross-departmental coordination between key national government offices	Project sought embeddedness by using local labour, training organisations, and contractors	Governance of the SDCI is in the hands of SANParks, a national government agency belonging to the Department of Forestry. It provides top-down, impositional and bureaucratic governance	A negative externality – alien wood species – was to be utilised to make school furniture. Region chosen because of its skilled labour force and plentiful suppliers	The cooperative is a form of joint action with environmental, social as well as economic goals. The national SDCI project sought to develop shared training, marketing and logistics	Government: SANParks, Jobs Fund and Department of Basic Education
<i>CSIR (2016 proposal)</i>	Proposal seeks to strengthen organisations in the LIPS such as the Furntech incubators	Does not deal in great detail with role of large firms	This proposal suggests that an independent legal entity or NGO with a suitably qualified and experienced management team run the hub as an intermediary	Proposed hub location in Rodepoort aims to benefit from the externalities of an established industry in that region: good logistics, skilled labour, suppliers and customers	Proposal speaks to several arenas of joint action: joint training and shared marketing and logistics	Government (DTI)
<i>2020 Master Plan</i>	Proposal concerned with the poor state of apprenticeship and the limited design education available to industry	Has strong proposals for lead firms to develop black and female supplier capabilities, and to assist in exports to SADC markets	The report does not specify the governance model for the furniture industry interventions proposed	Makes some general reference to the benefits of agglomeration and clustering, but limited detail	Some reference to shared services in training, marketing and logistics	Government (DTIC)

example, facilitating the development of loyalty and trust between actors who emerged together in the long struggle to establish the local sector. Occupational identities and professional ties between employees in the locality play a critical role in generating key externalities for the industry, such as a skilled local workforce, the growth of specialised local firms, joint actions between cooperating firms including shared training, and loyal local customers. Yet this systemic alignment and integration of all market and non-market forces in local economies is not easy to achieve in developing economies – especially because of the actions of most large firms (Filho et al. 2006).

The role of lead firms

In some instances, large firms are portrayed as playing a dynamic and enabling role in the cluster, for example, as in the metalworking cluster of Espirito Santo in Brazil – as described in Chapter Three. This LIPS case study focuses upon the interactions between a group of large firms competitively inserted into GVCs operating in world markets, and a cluster of SMMEs that subcontract to these large firms. It is a study of how large firms can enhance the technological capabilities of small suppliers with the support of a local intermediary – in this instance the Centre for the Development of the Capixaba Metalworking Industry (Filho et al. 2006).

The most critical relationship being shaped in this process of embeddedness is that between large and small firms within a locality. Many writers on clusters and GVCs in developing country contexts argue that large firms – both emergent medium-to-large local firms, as well as established indigenous and foreign large firms – need to be convinced to participate in building the capabilities necessary to support an effective cluster initiative (Schmitz 1999).

Kaplinsky and Morris (2014) comment that in the contemporary period firms are beginning to cooperate more with suppliers because of two recent developments – social justice and environmental campaigns regarding actions large firms can implement to improve employees' working conditions and the environmental consequences of their production. Large firms have taken up the challenge of these criticisms and have established corporate social responsibility offices and campaigns to promote issues such as increasing local employment, fostering a more competitive business environment by helping suppliers to improve the quality and quantity of local products, and establishing partnerships with local stakeholders to enhance local community services (White 2018).

However, little evidence of corporate social responsibility is visible in the Southern Cape furniture LIPS. As Chapter Five indicated, various unscrupulous large forestry firms and sawmillers are acting against the interests of the LIPS. For example, some of the beneficiaries of the privatisation process are cutting down pine trees long before the required gestation period of 25-30 years, and others are exporting raw timber logs (even though there is a timber shortage in South Africa) without any local value addition. Steinhoff, the lead retailer as highlighted in Chapter Five, has acted in a highly self-interested manner with no regard for the forestry, timber and furniture industries long-term wellbeing.

In short, none of the large firms operating within the above three industries have sought to develop local supplier capabilities. This situation is in part an outcome of government industrial policy that has been hostile to the idea of a significant development role for large firms. Both Chang's 1998 review of South Africa's industrial policies and the OECD's 2007 review of South Africa's innovation policies note the almost total neglect of the role that large firms can and do play in innovation and growth. Chang (1998) recommends that the South African government go beyond anti-trust legislation in conceptualising the role of large firms increasing their potential dynamism and expanding the benefits that would spill over into the supplier networks led by these large firms.

The OECD review of South Africa's innovation system makes the powerful point that historically, most private sector funded research and development (R&D) has emanated from large firms and multinationals based within the resource-intensive sectors and related upstream and downstream activities (OECD 2007). The review notes that large firms in South Africa appear to have played, and continue to play, the same role large firms elsewhere in the globe perform, that being to:

act as leading accumulators of knowledge resources, diffusing significant fractions of those resources more widely into the economy, especially to smaller firms, and contributing to the long-term evolution of the structure of the economy. (OECD 2007: 90)

Yet the OECD review notes that it was 'not possible to find many examples of such initiatives in South Africa and the impression was gained that such activities would not be supported by government or by the Industrial Development Corporation' (OECD 2007: 106). This view is supported by the fact that large firms operating within the Southern Cape have abstained from involvement in clusters.

Harnessing external economies and joint action

The evidence provided in Table 7.1 reflects a very serious crisis for cluster initiatives in South Africa – it suggests a widespread failure to exploit the collective efficiencies in the industry – its necessary life blood as suggested by Crouch et al. (2009), Maskell and Lorenzen (2004a), and Schmitz (1999). All these writers stress the difficulties faced by the furniture industry in terms of the limitations on economies of scale and scope, and the constant demand for product variety. These issues require the industry to develop flexibility to produce a diverse range of goods with speed and quality. The Southern Cape furniture manufacturers have failed to achieve this essential characteristic because of their opposition to most forms of cooperation and joint action. There are no joint training programmes shared between firms, no shared logistics services, no collective marketing platforms for firms in the region to utilise, no specialisation between differing suppliers, and no local technology transfer agency. The new digital technologies and design approaches have not diffused widely in the industry. Hellstrom and Hirschsohn confirm this fundamental limitation of the industry. They observe an 'old world' mindset amongst furniture firm owners and managers in

the Southern Cape LIPS and a ‘conservative’ approach to collective competition strategies such as training, with firm owners ‘not being prepared to invest beyond their immediate operational needs’ (Hellstrom & Hirschsohn 2007: 24, 31).

CONCLUSION: THE CONTRIBUTION OF INTERMEDIATION?

This chapter began by emphasising the key role played by intermediation in governing cluster structures. During the Apartheid era, the natural cluster that historically evolved in the region between 1890 and the present period, was backed by a ‘developmental state under white rule’ (Freund 2013). As outlined in Chapter Four of this study, various developmental state structures and policies provided a highly advantageous context for the manufacture of furniture in the Southern Cape region – albeit for whites only. With the advent of democracy after 1994 and the rise of trade liberalisation and an overarching neoliberal economic policy regime, these advantageous conditions fell away.

In the nearly three decades that have passed since the advent of democracy, intermediaries have not come to the rescue of the industry and the Southern Cape furniture LIPS. In assessing the evidence of intermediation in this chapter, the results are disappointing:

- In the case of the private boundary spanners, basic to mid-range intermediation was exercised by individuals who owned private companies that served as intermediaries. They succeeded briefly but were undone by adverse conditions in the sector.
- Governance of the SDCI was provided by SANParks, a government department that imposed a top-down, bureaucratic form of regulation even though its funding required it to cede governance to an appropriate Section 21 company. This requirement was never executed.
- The 2016 CSIR cluster proposals did suggest that an independent legal entity or NGO, with a suitably qualified and experienced management team, run the hub as an intermediary. However, the policy proposal has been stalled for more than eight years and is unlikely to be implemented.
- The DTIC’s Master Plan for the furniture industry makes no reference to the governance structure of its proposed interventions in the furniture industry. It therefore articulates no position on intermediation.

The problematic management of the SDCI and the limitations in the economic policy formulation process of the state (that does not recognise intermediation as part of its industrial policy armoury) provide an extremely unhelpful foundation upon which to assess the role of intermediaries in the Southern Cape cluster. In truth, intermediaries have not yet been given a proper opportunity to demonstrate their effectiveness regarding the provision of assistance in economic recovery and transformation. The jury on their potential performance is still out.

CHAPTER EIGHT

Building education-industry linkages in the Southern Cape LIPS: The role of intermediary organisations

This final evidence chapter deals with intermediation and the building of education-industry linkages. Indeed, the ability to build such linkages – especially if such connections do not currently exist – has become a top priority in the Southern Cape region. This situation has evolved because of the emergence of a contradictory set of circumstances, namely: (1) if the furniture industry is to recover, it needs to prioritise the development of cabinet-making (artisanal) skills as well as design, digital and middle/senior management capabilities; and yet (2), no training programmes are available in these occupational fields for furniture industry employees within the Southern Cape. This problem exists even though the region has a 130-year history under colonialism and Apartheid during which linkages between furniture producers and ET organisations were effectively built over time for white apprentices and other white employees (see Chapter Four). The dramatic collapse of these linkages over the past two decades has negative implications for initiatives such as clusters, but more significantly, for the LIPS. In the past, a structured transition from ET into work was well established by internal and external mechanisms in the LIPS. These links have all but eroded for young entrants into the local labour market, most of whom are African. Employers today are opposed to any involvement with the public training system accessible via colleges, universities of technology and SETAs, and prefer to conduct in-house training, promoting internal learning (NSA 2018). This non-utilisation of the external sources of knowledge is reflected in the historical trajectories of four key educational institutions:

1. *The Saasveld Campus of Nelson Mandela University*: Established in 1932, the Saasveld Forestry College in George became part of Port Elizabeth Technikon in 1986 and finally becoming a satellite campus of NMU in 2005. Today, Saasveld is a satellite campus of the larger Nelson Mandela University focusing on the provision of BCom and BAdmin degrees. Its former prioritisation of the forestry-timber-furniture ecosystem has been abandoned.

2. *Cape Peninsula University of Technology (CPUT)*: CPUT has historically had a strong link with the furniture LIPS through artisan training in furniture making. This ended in 2014. No programmes relating to the design and production of furniture currently exist.
3. *South Cape College*: This TVET college has not offered furniture training for decades. This task was left to the former Furniture Industry Training Board (FITB). The FITB was closed in 2000 and a furniture SETA was established as its replacement in terms of new government policy. Today, the courses on offer currently at the South Cape College are attuned to George's new status as a financial and business services hub for the region, and not as a furniture and timber hub.
4. *SETA training*: There was no evidence offered by furniture firms of any utilisation of SETA resources to train furniture workers, especially in the critical para-professions such as cabinet-making, CNC technicians, digitalisation, e-commerce and small firm business studies.

The extant innovation literature does not address this problem of delinking. In particular, the literature pays insufficient attention to how these linkages become established, embedded in the LIPS, and ultimately weakened as new production and political conditions emerge:

The innovation literature has made a good deal of headway in analysing the R&D system and the science base and its role in building competence at national and sectoral levels. However, relatively little attention has been paid to the wider institutional frameworks required for building competence and generating knowledge such as education and training systems, labour markets and organisational practices. The ways that these subsystems fit together, generate knowledge and interact within the national innovation system have been relatively little explored. (Tomlinson 2001: 2)

Much of the extant innovation literature sees the absences of 'linkages' as signs of weak national innovation systems – as 'gaps' in the system that require fixing. These gaps are particularly acute in developing countries. The solutions proposed by theorists and practitioners alike is to deploy intermediaries to help fix these gaps (see Chapter Three).

This chapter will examine the extent of intermediation in the furniture LIPS between ET organisations and firms and whether such intermediaries resolve these 'linkage' gaps. Three intermediary case studies will be presented. The first case study involves the Furntech incubator in George. The second focuses on the SAFI – the official industry association representing the national furniture sector. The third intermediary examined is the collective of 21 SETAs set up nationally across all economic sectors in 2000.

A fourth and concluding section provides an assessment of the dynamic interactive capabilities possessed by leading actors in the LIPS which enable them to build linkages – or not. The analysis evaluates the three intermediary case studies of this chapter, along

with seven other actors in the LIPS discussed in Chapters Six and Seven. In doing so, the remaining part of this chapter provides an overview of the evidence on intermediation and linkage formation across the entire book. These additional seven actors include boundary spanners, the School Desks Cooperative Initiative, the state, firms, Saasfeld Forestry College, CPUT, and the South Cape College. The assessment is developed against a conceptual framework on 'dynamic interactive capabilities' developed by Leih and Teece (2016) and Petersen and Kruss (2020) as discussed in Chapter Two. Their model emphasises four dynamic capabilities: sensing, seizing, integrating and coordinating. The last two capabilities are not relevant to this study as no actor has matured sufficiently to exercise integrating and coordinating capabilities. Hence, the evaluation framework will examine only the first two start-up dynamic interactive capabilities: sensing and seizing. The conclusion suggests that all these actors are unable to play a relational role with each other in terms of dialogic intermediation and bridge building. Only a few have developed basic sensing and seizing capabilities. None have acquired the more advanced capabilities of integrating and coordinating.

INTERMEDIARY CASE STUDY ONE: THE FURNTECH INCUBATOR

Yusuf (2008) defines the incubator as an organic intermediary – most often a public agency that offers shared resources, assists with knowledge transfer, and provides a variety of other services to small firms and start-ups (e.g., joint training, bulk buying, marketing and shared logistics). Yusuf notes the significance of assisting with the sharing of tacit knowledge in specific industry contexts, within which such knowledge is 'sticky' and difficult to transfer to new contexts. It requires cooperation and trust between firms and other actors for such transfers to take place. Incubators, serving as intermediaries, can facilitate such trust and cooperation.

The innovation literature on incubators, drawn largely from the sub-school of researchers writing on entrepreneurial ecosystems, sees the primary role of incubators as that of network system builders. Hernández-Chea et al. (2021) argue that incubators have evolved as intermediaries in the past three decades from the traditional and basic role of knowledge transfer to the far more complex and advanced role of 'network system builder' (Hernández-Chea et al. 2021: 3). This latter practice entails playing a central role in facilitating, orchestrating and coordinating activities within a network of actors (Van Rijnsoever 2020: 4). Papia (2006), writing from an innovation perspective, agrees with this description. In short, incubators perform a dual function (internal and external) – the first being the traditional role of providing basic resources to start-ups, the second entailing the building of ecosystems that successful start-ups join once they graduate from the incubation process (Antunes et al. 2020: 51). To consolidate this second function, incubators often maintain after-care services such as mentoring, coaching and the provision of alumni associations that include other firms who were former incubatees (Van Rijnsoever 2020). Such after-care activities continue the process of interactive learning long after graduation.

The Furntech incubator in George in the Southern Cape

Furntech was launched in 2000 with its first campus started in George in 2002 at the old Saasveld Forestry College site. Seven other centres were established during the following decade in Cape Town, Nyanga, Durban, White River, Umzimkhulu, Mthatha and Johannesburg. The Furntech campus in George – the focus of this case study – received financial and training support from Sweden's SIDA, that resulted in the building of a state-of-the-art furniture incubator that opened in 2002 (Chisenga 2012; Hellström & Hirschsohn 2007). Training support also came from the Tibro furniture cluster in Sweden – one of the leading furniture clusters globally.

Furntech offers a two-year incubation process that can be extended to three years in specific instances. Within this period the performance of the incubatees is monitored and evaluated. The contract that the incubatee signs binds the start-up to pay 10% of its monthly turnover to Furntech (Chisenga 2012: 38). The main activity of Furntech in George has been the provision of courses on cabinet-making, wood polishing, supervision, business and technology services as well as training in CAD and CNC machining (Hellström & Hirschsohn 2007).

The published reviews of the economic impact of the Furntech model over the past two decades have not been very complimentary. Furntech's performance nationally during this period has been mixed. In its annual report of 2020 (Furntech 2020), Furntech reports that 422 small firm incubatees had graduated through the scheme nationally between 2006 and 2020. This disaggregates into 31 SMMEs supported per year across seven Furntech incubator campuses nationally – not a very high output. Also, new job creation has been low – at only 71 direct jobs being generated among the graduated SMMEs between 2006 and 2011. Lastly, income from the operating activities of Furntech's tenants has only been able to cover 17% of its total costs. These are all indicators of relatively poor performance (Chisenga 2012: 36-42). Masutha (2012: 97) provides some reasons for these poor outcomes. First, approximately 20% of Furntech's incubatees drop out before graduating. Second, there are external and internal factors that contribute to the failure rate, including lack of commitment, discipline and non-compliance.

After having run for more than a decade, the George incubator was closed by the DTI in 2014. In 2016 the DTI commissioned the CSIR to review the remaining seven Furntech incubators. This evaluation indicated that Furntech was not meeting its objectives to assist SMMEs in the sector to overcome the key constraints on trade. The report argued that many stakeholders in the sector indicated that 'Furntech graduates and incubatees were unable to independently source adequate work and income-generating opportunities' (CSIR 2016: 2). The perception is that 'incubatees depend too heavily on Furntech for marketing their products and businesses, and graduates function sub-optimally once they graduate from the incubation programme' (CSIR 2016: 2).

Furntech has received significant criticism from employers in the Southern Cape, particularly around its prioritisation of the training of unemployed people as semi-skilled workers, rather than on the production of the skilled artisans who are in short

supply. This decision is a specific instance in which the Mbeki-era's call to prioritise the training of unemployed youth at the Growth and Development Summit of 2003 impacted negatively on several organisations, including Furntech, that were originally geared to upskilling experienced workers who were ready to launch their own start-up firms. The task of assisting unemployed people, although a major issue in South African society, is a very different challenge requiring unique policy interventions. Jeanne le Roux, owner of bespoke firm Creative Designs, is highly critical of Furntech's mission to incubate start-up firms alongside the training of unskilled workers:

It's a completely confusing model, you can't do training of the unskilled and business incubation in one organisation. That's why Furntech died. I think Furntech completely missed the point, which is that we are always looking for skilled artisans. Here was a fantastic opportunity to supply the industry and for the industry to give feedback on the system so that our existing staff could be upskilled – and then they went and focused on unemployed youth – which is a completely different goal. (Interview with Jeanne le Roux, owner of Creative Design, 6 May 2016)

Similar sentiments were expressed by Nature's Gift, whose co-owners form part of the few successful graduates emerging from the Furntech incubation scheme:

For me it feels like they focused on getting people off the street and then training them on how to work a machine. They would do the training for a week and then you'd get a certificate for working the machine. So that was actually good – the worker gets a certificate, and he can go somewhere and say I am a panel saw operator and he might be able to get a job there. So for that reason I think Furntech worked, but that kind of training you can do in-house as well – you don't need an incubation scheme to do it. (Interview with Mr Henk Rossouw, co-owner of Nature's Gift, 4 May 2016)

Paul Cloete, a lecturer at Nelson Mandela University's wood technology programme (formerly the Saasveld Forestry College) is critical of the lack of support Furntech received from the established firms in the George-Knysna furniture hub:

I think given that George and Kynsna became such a strong furniture manufacturing area in the 1980s and earlier, it came to be dominated by certain existing companies that were very successful. Some of these same family businesses are still dominant and there isn't much scope for the entry of new firms. I believe Furntech and its graduates didn't get all the backup they needed from these companies. Countrycraft was supportive because its founder, Luke Martin, is on the Furntech Board – but not so much from other firms. So it was a difficult task for Furntech to get up and running in the area. And that's why it was eventually closed. (Interview with Paul Cloete, forestry lecturer at Nelson Mandela University, 6 May 2016)

Why Furntech failed in George

The literature on incubators is replete with advice on factors that contribute to success or failure of incubation processes. Altenburg (2008) warns that industrial policies promoted in less developed countries by governments and international agencies often do not take context sufficiently into account. He warns that innovation systems in developing countries are different from those in mature advanced economies in a number of ways: their institutional frameworks tend to be much less formalised, rules are less enforceable; and key actors have under-developed capabilities. The choice of policy interventions should depend upon initial socio-economic conditions. Imported models of intervention may prove to be highly inappropriate (Altenburg 2008).

Due to the above problem, certain policy instruments favoured by innovation policy makers and researchers – such as science parks and incubators – often ‘have limited outreach, benefitting relatively small groups of firms’ (Altenburg 2008: 14). This situation seems to apply to the Furntech incubators, that have limited their contribution to that of a traditional incubator – knowledge transfer and information sharing – delivered mainly through an extensive training and incubation programme. The Furntech model (reflected in its online publications, brochures and an interview with the CEO) gave no indication that they built networks of start-up firms both internally and, more importantly, externally. There is no after-care programme for graduated incubatees, and most of them struggle to survive on their own. Furntech chose to be the sole player in the incubation process, seeking no alliances with other actors, such as TVET colleges and universities of technology or lead firms. Furthermore, Furntech has no conception of a collective ecosystem structure that the incubatee start-up firms are inextricably linked to. It treated each incubatee as an individual client who must learn how to run his/her own business. Hence it did not engage in any external work to build linkages with the Southern Cape furniture LIPS. It certainly could not be described as an orchestrator of key interactive dynamics in the LIPS. Most neglected of all inter-dependencies within the LIPS was advice and training on the acquisition of funding to consolidate and grow the start-up enterprise, knowledge and contacts for accessing markets as well as linkages to formal knowledge producers, such as colleges and universities of technology who teach design and digitalisation. Although Furntech in George was located at the NMU campus (the former Saasveld Forestry College campus), cooperation between the two organisations appears to have been episodic.

Another problem identified by Papia is the dependency that comes with tenants receiving government support – low rent, access to modern technology, assisted access to markets and training. Without these supports tenants face difficulty in continuing their operations after incubation (Papia 2006). Furthermore, incubators struggle financially if tenants are unable to pay their share of costs. Incubator dependence upon donor support is also a problem, because these sources of funding are often unilaterally cut or the terms of funding changed (Comins & Kraemer-Mbula 2016). In the case of Furntech in George, the entire campus was permanently closed in 2014 because of a myriad of problems.

Furntech is clearly an incubator with limited impact in terms of launching successful start-up firms. The organisation has also not undertaken any significant intermediation. The discussion now shifts to the second intermediation case study.

INTERMEDIARY CASE STUDY TWO: SAFI

SAFI began in 2010 as a Western Cape entity, but in 2014 the Western Cape Provincial Government advised the then Western Cape Furniture Initiative that it was no longer able to fund the organisation. At the time furniture was identified in DTI's *Industrial Policy Action Plan* as a critical sector for employment. Marianne Marks, a senior official at SAFI, maintains that the impetus for a national furniture forum in fact came from government, who maintained it had no single sector platform to speak to about industrial policy. After a long consultative process in 2015, the Western Cape Furniture Initiative decided to become a national body, and SAFI was born. SAFI has its head office in Cape Town and a branch office in Pretoria (Information provided during an interview with Marianne Marks, SAFI, 9 June 2017).

SAFI is positive about the furniture sector. However, the organisation recognises the massive cost to the industry paid as a result of the far too rapid implementation of trade liberalisation policies and the consequent mass importation of cheap Chinese and other Southeast Asian furniture products. Many furniture businesses have been forced to close because of this competition. The sector is significantly smaller today than two decades ago, for example, national employment has dropped from approximately 80 000 people in 1995 to less than 27 000 people today. Similarly, the number of manufacturing facilities nationally has dropped from 3 500 plants to just over 2 200 plants (SAFI 2019). SAFI was launched during this sectoral crisis as a joint initiative between industry, labour and government for the benefit of all the stakeholders to:

- Provide market and industry information;
- Facilitate training, mentoring and support services;
- Position the industry to penetrate domestic and international markets;
- Facilitate the development of strategic relationships throughout the furniture value chain; and
- Promote effective manufacturing and design with the common interest of advancing employment growth, value addition and transformation across the furniture value chain (SAFI 2019).

SAFI works broadly with government and quasi-government bodies, such as the DTI, Proudly South African, Productivity SA and the IDC to formulate measures to grow the furniture sector. It has three important intermediation thrusts: first, it has been involved in promoting local procurement regulations for furniture bought by government departments and related institutions such as hospitals, schools and prisons. Government has designated three areas for local content: 100% for school furniture; 65% for government office

furniture; and 85% for government purchased mattresses. SAFI has also promoted local procurement amongst the private sector and has received commitments to this effect from large retailers such as Lewis stores, part of the Steinhoff Group (Information provided during an interview with Marianne Marks, SAFI, 9 June 2017).

A second area of intermediation has been to promote and facilitate investment in new technology and to drive innovation and productivity in the sector. SAFI was also involved in the drafting of the new 'Master Plan' for the industry (as discussed in Chapter Seven), working in cooperation with DTI and its core stakeholders (SAFI Annual Report 2018/2019).

SAFI is currently offering a level 2-4 learnership (a training programme similar to modern apprenticeships) in furniture manufacturing that is run through several TVET Colleges in SA. The Level One learnership introduces the student to issues pertaining to the world of work and furniture making. Level Two introduces wood machining and cabinet-making. Levels Three and Four entail specialisation areas. The students, thereafter, complete a trade test and become cabinetmakers. Oddly, it is not offered at the Southern Cape College in George.

SAFI is also seeking to provide training in the furniture sector on administration, marketing, finances and supervision – all non-technical areas that have been neglected in the industry, especially with regard to small firms. The most important SAFI learning intervention, however, are the preparations to launch a four-year bachelor's degree programme on furniture design. Organisations interested in offering the programme include CPUT, the University of Cape Town (it has a generic design programme), NMU and Stellenbosch University's division of wood sciences. Two private providers, Greenside and Design Times, are also interested in participating. The programme has yet to be finalised and implemented.

Playing an intermediation role

Marks believes SAFI performs an intermediation role in its work with stakeholders. In addition to the intermediation activities mentioned above, SAFI facilitates furniture firms obtaining access to government incentives and funding options. Second, they communicate with government industrial policy departments and agencies and brief them on members' experiences in terms of the incentives offered and the ease with which they can be accessed. They emphasise sharing of information and dialogue in their work – 'we try and complement the work DTI is doing in the sector' (Interview with Marianne Marks, SAFI, 9 June 2017).

Given the above profile of work undertaken, some of the interviewees in this study were positive about SAFI:

We had quite a heated debate the other week in George at one of the employer association meetings. There were several accusations from members that the government is doing nothing for us, and I stood up and said guys, I would like

to disagree with this statement. There are support programmes out there for the furniture industry. SAFI is our major channel to communicate to government and get across our message and industry requirements ... So that's why I've got a real belief in SAFI because for the first time in many years there is now a forum with all the role players in one room – here's the industry, here are the guys with government money and now we can talk to each other and say, this is what we really need. I really believe that there's a role for SAFI in this interaction with government agencies. SAFI is not perfect, but at least there is a mechanism to interact with DTI. (Interview with Nico Prinsloo, CEO of Coastal Furnishings, 2 June 2017)

However, many furniture manufacturers interviewed in this study do not believe SAFI can perform a powerful intermediation role that has the potential to shift economic activity in the sector. Its main function to-date has been to share information and to improve communication in the sector – basic intermediation functions.

INTERMEDIARY CASE STUDY THREE: THE SETAS

The third example of intermediation reviewed in this study is that of the 21 SETAs that operate in all sectors of the economy, including furniture. It was not possible for various reasons to focus only on the Fibre Processing and Manufacturing SETA that operates in the furniture sector. The main problem is that the SETA has almost no presence with firms in the Southern Cape furniture industry. An alternate route was chosen, that being to interview four leaders in the national skills systems and to obtain their generic views on intermediation. The results are discussed in the next section.

The South African training system

The South African training system is comprised of 21 SETAs, with each authority established in a key sector of the economy. The training policy model adopted in the late 1990s was strongly influenced by similar changes in the UK, Australia and New Zealand, all countries where wide-ranging sector skills councils were adopted to replace the narrow and craft-focused industry training boards established in the 1960s. The core functions of SETAs, as defined by the *Skills Development Act* of 1998, are to:

- Develop an annual Sector Skills Plan;
- Promote and register learnerships – a modern form of apprenticeship;
- Collect and disburse the skills development levies in the sector;
- Report to the Director General of the Department of Higher Education and Training (DHET) on income, expenditure and the implementation of the Sector Skills Plan; and
- Improve information flow about employment opportunities in the labour market (RSA 1998).

SETAs have additional responsibilities in their sectors. They need to assist and encourage employers to prepare workplace skills plans and pay a mandatory grant to employers who prepare such a plan. SETAs are also involved in the implementation of the key targets of the state-led *National Skills Development Strategy* in their sector. But most importantly, SETAs need to establish ‘awareness raising strategies to enable links with employers, trade unions, providers and other groupings to be established’ (DoL 1999: 24). These networks can take the shape of both formal and informal partnerships across a wide array of public and private institutions. These networks should serve as the institutional vehicles for learnership programmes and other shared training activities in the sector.

Dominance of a ‘compliance’ mode of regulation

Many of the goals and objectives of the *Skills Development Act* of 1998 have not been attained. The main organisational problem (beyond the scourge of corruption and maladministration that has become endemic across the public sector in South Africa [see Chapter Four]) is the tight financial controls imposed by the *Public Finances Management Act* (PFMA). Ironically, the PFMA – government’s main vehicle in ensuring diligence in the spending of state financial resources – has not been able to stop rampant corruption and theft within public sector organisations, yet it has crippled innovative and effective delivery of public services through the imposition of a highly bureaucratic and rigid financial mode of regulation – what many call a ‘tick-box compliance culture’. A recent policy review by the National Skills Authority (NSA) of the South African training system is very critical of this ‘compliance’ mode:

It creates a straitjacket of financial regulation, where the emphasis in provision is often quantitative performance targets set out by government programmes. Such compliance is an overly-legalistic reading of what a state must do – crudely interpreted by providers as the need to please the state auditors – whilst the complexities of ramping-up delivery and improving performance are not dealt with in any depth by more flexible and creative methods of regulation. (NSA 2018: 188)

The NSA report argues that the exacting quantitative and overly bureaucratic demands of the PFMA as applied in the training system act to exclude small businesses, cooperatives and non-governmental organisations who all choose to opt out of participation because of these bureaucratic demands (NSA 2018: 148).

Views of key stakeholders in the training system

Little research work has been undertaken on intermediation in South Africa, and almost none written specifically on the ET system – except for the work of Petersen and Kruss (2020) and McGrath (2023). To overcome this paucity of information, four senior officials in the South African skills development system were interviewed on their views of intermediation practices initiated by the SETAs. The interviews sought to

determine whether senior officials in the skills system thought ‘intermediation’ a useful organisational tool to deploy in the skills system, and second, whether they recognise any intermediation practices as having taken place.

The limits of intermediation

Much of the interview discussion was about the limits of intermediation. For example, Nasima Parbhoo from BANKSETA indicated that SETAs do not see employers as social partners with a common vision on human capital development. Rather, they see employers contractually as levy paying organisations seeking to access the skills levy through mandatory and discretionary grants (NSA 2018). The concept of ‘partnership’ in this SETA environment was defined by two rather restrictive documents – the Service Level Agreement (SLA) and the Memorandum of Agreement (MoA) – in her view a rather narrow and legalistic interpretation of the potential of partnership:

The relationship that most SETAs have with employers would be around the distribution of discretionary grants either through funding windows or engagements for them to undertake experiential learning. But engaging with employers in terms of broader skills related issues facing the sector does not happen in a coordinated manner but rather in isolated instances. (Interview with Nasima Parbhoo, BANKSETA, 7 March 2018)

According to Parbhoo, stakeholder dialogue in a SETA environment is very closed. It is literally a linear type of engagement:

SETAs tend to be guided by issues raised in the *National Skills Development Strategy* and the *White Paper on Post-School Education and Training*. If these strategy documents indicate, for example, that capacity building of public higher education institutions is a priority, SETAs respond via discretionary grants and various interventions to support these strategies. SETAs do not fulfil the intermediation role of bringing social partners together to broker a broader mandate in a well-planned, structured manner on a frequent basis. (Interview with Nasima Parbhoo, BANKSETA, 7 March 2018)

Shinaaz Patel from DHET agrees with Parbhoo’s statements. According to her, SETAs use the ‘carrot and stick’ of financial incentives to get employers to deliver on projects without using types of mediation such as ‘brokerage’ and ‘visioning’. Employer dissatisfaction and their lack of skill system ‘buy-in’ present further problems. For DHET officials, this stance is difficult to work with. According to Patel, whilst on the one hand:

employers disown participation in the skills system in one breath, on the other hand, employers are part and parcel of the SETA Board. But they don’t use this facility strategically. In disowning participation in the system, employers say that

they don't share the same vision, their enterprise needs are different, they're competitive with other players in the sector and can't cooperate. It makes working together as a collective very difficult. (Interview with Shinaaz Patel, DHET, 26 March 2018)

Parbhoo further indicates that SETAs have not placed much emphasis on developing stakeholder engagement strategies and this fact has restricted their ability to broker more expansive ET agreements. She maintains that there has been a great deal of confusion in the SETAs between: (1) what constitutes a partnership; and (2) contractual agreements that are entered into with role-players in the sectors:

In developing the Sector Skills Plan, an entire chapter is dedicated to partnerships. It is here that SETAs can clearly demonstrate the role they play as intermediaries. However, a partnership must not be confused with a contractual agreement where clearly defined deliverables are matched with a payment. Alternatively, in a partnership, several social partners engage and contribute to finding a solution to a skills development challenge. (Interview with Nasima Parbhoo, BANKSETA, 7 March 2018)

Asking too much of SETAs

Patel argues that expecting the SETAs to go beyond their current *modus operandi* focused largely on the funding of training is asking too much of them because at this stage there is little capacity in the system for any further action:

We've had to go back to basics and say to the SETAs, first get better labour market information, and then determine the next step. This is our approach now – let's go back to the basics and fix that before we start moving in a more complex direction. (Interview with Shinaaz Patel, DHET, 26 March 2018)

Lynn Anderson, a senior DHET official in skills development, agrees that the role of intermediaries is a very valuable way of looking at improved SETA performance. However, she also believes the concept runs the risk of asking too much of the SETAs, given the lack of sufficient capacity. For example, the idea of SETAs being able to provide business support services that act to improve productivity and work organisation, offered to individual firms or a collectivity of firms in a cluster, is beyond their present capabilities. At best, intermediation could entail partnerships between the SETAs and industry associations, but such partnerships would not provide dedicated services that other organisations offer, such as the SEDA and Productivity South Africa (PSA). Anderson's suggestion, however, still faces the problems arising from the fact that agencies such as SETAs, the DTIC, SEDA and PSA operate in silos, and do not easily collaborate with each other in offering a collective basket of enterprise services.

Dynamic interactive capabilities

A further problem inhibiting intermediation has been the lack of sector training for SETA personnel that will enable them to develop dynamic interactive capabilities (see the discussion of dynamic interactive capabilities developed in Chapter Nine). At the launch of the SETAs, many former school and adult education teachers were recruited as personnel, giving the SETAs educational ‘know-how’, but not embedded knowledge of the industries they were to serve. People with sectoral expertise did not enter the SETAs when they were formed. Anderson agrees that this situation was not ideal and was an unplanned and unexpected outcome:

We always wanted that embedded, intimate knowledge of the sector, and we really didn’t get it. We always hoped that by setting up a board of social partners that they would ensure that the staff came from the sector. I fully agree with the point that they should come with real expertise from the sector, and it didn’t really happen. I’m not sure whether we understand fully why the general pattern emerged that we got people who were generalists rather than sectoral experts, which I always believed was central. (Interview with Lynn Anderson, DHET, 6 March 2018)

Patel acknowledges that there has been no formal training programmes offered during the time she has been employed by the DHET or while she worked at a SETA prior to 2009. Nor has there been any requirement that SETA personnel have a specific form of sectoral expertise prior to appointment (or indeed post-appointment). Patel indicates that SETAs are formally independent bodies and so it has been difficult for the DHET to prescribe to these institutions the nature of the staff training that should be conducted.

Ideally, all mid- to senior-level SETA staff should have a sound knowledge base of their economic sector. Patel suggests, for example, that staff need to comprehend employer dynamics and labour market processes, because without an understanding of these phenomena, it would be difficult for these SETA officials to effectively undertake skills planning and its translation into supply side policy. In her current job at DHET:

it very rarely occurred that a SETA official would articulate these employer needs and demand conditions back to me in any kind of detail. This was disconcerting because I would have this problem over and over again ... And the low levels of trust currently in the system also restrict the flow of expertise to the SETAs – especially from employers. (Interview with Shinaaz Patel, DHET, 26 March 2018)

Some SETAs, however, do have sector-based expertise in the form of personnel who came to the SETA from industry. For example, every client liaison officer and quality assurance officer in the manufacturing SETA (merSETA) is a qualified artisan. They have worked in the manufacturing industry. The BANKSETA also has many senior leaders

who were formally employed in the banking sector. However, the challenge for SETAs is to combine sector expertise – as is the case with the two examples described above – with the curriculum and pedagogic expertise needed to understand how the ET system works. The combination of these two capabilities should be a major end-goal for the SETAs but it is not easily achieved.

Compliance and a tick-box culture

A final constraint on intermediation has already been mentioned earlier – the straitjacket of performativity and financial compliance. Such a model of administration in the skills system has resulted in the emergence of a highly compliance-oriented service provision model in which the main objective of SETA management is to avoid incurring qualified audits from the Auditor-General. This problem has also introduced a pervasive short-termism – most often resulting in contracts of only one or two years, an emphasis on the production of quantitative indicators (even if most training situations do not lend themselves easily to quantitative measures), and a strong orientation towards avoiding risk and experimentation. Intermediation does not easily emerge from this environment because it requires openness to new ways of operating, taking the inputs of other players seriously, building consensus and adopting medium- to longer-term solutions. The interviewees confirmed these problems in the following comments:

Much of the work of SETA staff is in response to head office driving them on numbers. It's all about numbers ... In fact, the service level agreement adopted by DHET is all numbers based, it's not qualitative. How many partnerships do you have? How many learners registered are undertaking artisan training? How many of them qualify? How many skills programmes were entered into and completed? How many bursaries? There is nothing qualitative about it. So DHET is driving this behaviour. (Interview with Sue Bryant, merSETA, 8 March 2018)

When you look at SETA delivery, a lot of it entails tick box exercises. Really meaningful data is difficult to get – for example, measuring the socio-economic impact of the SETA. Because you don't have valid and verifiable data, what you end up with is a focus on meeting DHET service level agreement deliverables. Compliance with the Public Finances Management Act, national treasury guidelines and any other compliance that they have to meet to get an unqualified audit from the Auditor General seems to be the focus of the SETA. (Interview with Nasima Parbhoo, BANKSETA, 7 March 2018)

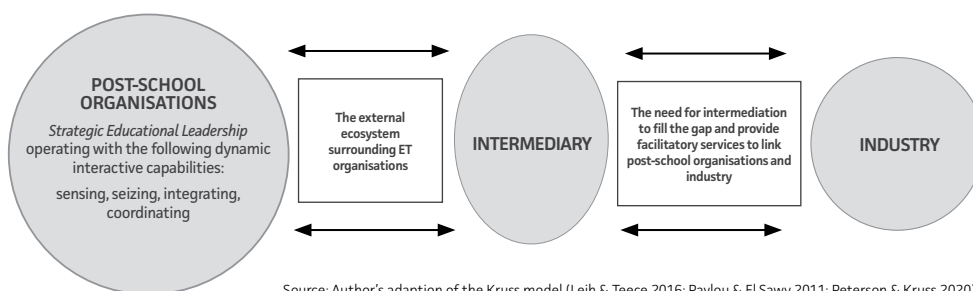
The final section of this chapter will now assess and summarise the extent to which the 10 leading actors in the furniture LIPS display the elements of strategic leadership and dynamic capabilities needed to build linkages between education and industry

organisations. It will also assess the level to which these 10 organisations possessed the potential for intermediation but failed to build the necessary linkages.

ASSESSING THE FORMATION OF LINKAGES AND THE POSSIBILITIES FOR INTERMEDIATION IN THE LIPS

Chapter Two outlined a conceptual schema developed by Peterson and Kruss (2020) that sought to outline the steps, capabilities and mechanisms required to initiate linkages between industry and ET organisations in contexts where such linkages did not exist. As outlined in Figure 4 below, Petersen and Kruss's (2020) model for implementing linkage formation between industry and post-school organisations is comprised of three pillars. These are: (1) educational leaders who have the required dynamic interactive capabilities; (2) internal and external mechanisms that assist in the bridge-building and boundary-crossing processes required to establish such linkages; and, finally, (3) intermediaries where and when needed.

Figure 4: The Petersen and Kruss model of building linkages between post-school organisations and industry



Source: Author's adaption of the Kruss model (Leih & Teece 2016; Pavlou & El Sawy 2011; Peterson & Kruss 2020).

The dynamic capabilities needed by leading actors to build linkages highlighted by Leih and Teece (2016) and Petersen and Kruss (2020) include the first two critical steps:

- *Sensing*: Spotting, interpreting and pursuing opportunities for the university in the wider economy and society; and
- *Seizing*: Acting on the 'sensing' insights by revamping existing operational capabilities with new knowledge.

This framework will now be applied to the ten critical actors in the Southern Cape furniture LIPS. Table 8.1 measures the extent to which any linkage activity was initiated with the help of intermediaries.

Initiatives that display elements of strategic leadership and dynamic capabilities in building linkages

As indicated earlier in the text, none of the ten actors in the study attained the more advanced capabilities of integrating and coordinating. Only two of the ten actors listed in Table 8.1 below succeeded in performing basic intermediation functions – SAFI and the two individual boundary spanners operating in the LIPS. They display elements of strategic leadership and possess at least sensing capabilities – the ability to see new opportunities and new requirements and to propose action plans to exploit those opportunities.

SAFI has been the only player seeking to introduce design education in the furniture industry nationally. It has engaged in discussions with several universities nationally (including the two universities active in the Southern Cape: CPUT and NMU), seeking an agreement to offer a newly registered degree programme in furniture design. Implementation of the programme has not started after many years of discussion, a fact that may indicate an inability to go beyond the sensing phase of linkage formation. Nonetheless, the advocacy and planning involved represents an important step in SAFI's attempts to modernise the furniture industry. This advocacy is a case of competent intermediation at the 'basic level' as defined in Chapter Three.

Table 8.1: The variation in ability to form education-industry linkages between furniture LIPS actors in the Southern Cape

No.	Actor type	Presence of strategic leaders who possess dynamic interactive capabilities	Internal mechanisms to assist in forming education-industry linkages	External mechanisms to assist in forming education-industry linkages	The presence of intermediation assistance
<i>Organisations which succeeded in performing basic intermediation functions</i>					
1	Industry association (SAFI)	To some extent (Sensing) Promoted localisation, investment in design and digitalisation, and intervened in conflicts between labour and employers in the industry.	To some extent SAFI has programmes promoting improved learning through the acquisition of CNC, design, digitalisation skills.	To some extent Performed advocacy for a new bachelor's degree in Design (though not yet implemented).	Basic intermediation The industry association performs basic intermediation functions as defined in Chapter Three.
2	Individual boundary spanners (Chapter Seven)	Yes (Sensing and seizing) The two entrepreneurial boundary spanners discussed in Chapter Six possessed dynamic interactive capabilities in seeing the potential of business opportunities based on collective action in clusters. They, however, failed to convince others to participate in their project.	Not applicable	Not applicable	Basic and mid-range intermediation As boundary spanners, the two entrepreneurial individuals served as intermediaries and brokers of solid ideas that could have led to renewal.

CHAPTER EIGHT

BUILDING EDUCATION-INDUSTRY LINKAGES IN THE SOUTHERN CAPE LIPS: THE ROLE OF INTERMEDIARY ORGANISATIONS

No.	Actor type	Presence of strategic leaders who possess dynamic interactive capabilities	Internal mechanisms to assist in forming education-industry linkages	External mechanisms to assist in forming education-industry linkages	The presence of intermediation assistance
<i>Organisations with a strong potential to be intermediaries but that failed to build linkages</i>					
3	School Desks Cooperative Initiative (SDCI) (Chapter Seven)	To some extent (Sensing and seizing) A visionary and bold initiative to resolve multiple problems – environmental, economic and social. However, it was badly executed by the SANParks which had limited capacity to lead such an expansive initiative.	Limited Training of unemployed workers was central to the programme, and this required links with mainly private providers.	Limited The SDCI developed strong links with the Department of Basic Education that ordered 250 000 school desks from the cooperative. It also had strong network links with the environmental and sustainability community, given the utilisation of alien timber in the production of desks.	None The SDCI failed largely because the state did not appoint an intermediary structure to run the cooperative. It was run within the state, putting enormous strain on already overworked SANParks environmental staff.
4	The SETAs	None The SETA leadership imposed a compliance model of governance that focused entirely on their fiduciary responsibilities. The SETAs offered firms an at-arm's-length and bureaucratic model of support services. Employer buy-in has been very limited.	Limited SETA partnerships are purely transactional – for example, paying private firms to host interns, learnerships and apprentices. These internal mechanisms are largely financial, short term, at arm's length, and not collective and relational.	Limited Some external mechanisms – for example, SETA Boards comprise membership for all the major sectors of society – unions, employers and the state. However, these mechanisms are transactional, focusing explicitly on the fiduciary responsibilities of the board.	No SETAs have failed to take advantage of a golden opportunity for intermediation by adopting the bureaucratic compliance route. They also failed in developing interactive or networking capabilities with firms.
5	Furntech Incubator	Now closed The incubator had the potential to impact the training of cabinet makers, CNC digital technicians and designers, and help launch start-ups. However, it led an incoherent programme of training semi- and unskilled workers alongside a failed incubation programme that eventually closed in 2014.	Now closed Furntech had programmes to: Train unskilled youth and semi-skilled workers. Incubate start-up furniture firms for a period of two and a half years.	Now closed Eight Furntech incubators were established in 2002 with a national reach. It also established strong links with the Tibro furniture cluster in Sweden, entailing staff exchanges and joint study groups.	Now closed Furntech in the Southern Cape failed as an intermediary, remaining a traditional training organisation and incubator.
<i>Organisations that failed to build linkages</i>					
6	The state	None Chapter Five concluded that the national state has limited cross-departmental capabilities, introducing several contradictory policies across the forestry-timber-furniture value chains. DTIC launched a Master Plan in 2020 for the furniture industry but, in common with former proposals, it is unlikely the recommendations will be implemented by the DTIC.	Limited The DHET and Department of Science and Technology (DST) provide internal incentives for universities to form university-industry linkages (UILs) through a variety of research funds and grants – for example, the financing of Research Chairs and the ranking of top scholars. However, these programmes tend to privilege a hierarchically ranked higher education system based on institutional reputation. In addition, these UILs tend to be dominated by high-tech and high-science issues, thereby ignoring the problems faced by the majority economy that is low-tech and low-skill.	Limited The DTIC introduced opportunities for furniture firms to exhibit products at global and local trade exhibitions. The DTIC also launched eight Furntech incubators in 2002.	None The state's management of the SDCI (see Ch 7) had strong potential for localisation of furniture production, but it was ultimately defeated by the reluctance of the state to let the initiative be managed by an independent intermediary.

LINKING EDUCATION AND THE LOCAL ECONOMY
INTERMEDIARIES IN A FURNITURE ECOSYSTEM

No.	Actor type	Presence of strategic leaders who possess dynamic interactive capabilities	Internal mechanisms to assist in forming education-industry linkages	External mechanisms to assist in forming education-industry linkages	The presence of intermediation assistance
7	Firms	None Lack of cooperation between firms and between firms and the state. No real leadership in the sector outside of SAFI. Local boundary spanners did not get local firm support.	Limited Some use of DTIC incentives to exhibit at international trade exhibitions and upgrade technology. However, organisational change remains limited – no qualified designers appointed by any of the firms sampled, artisans not being formally trained and accredited.	None Membership of networks is limited to SAFI and even then, participation is low. Participation with the Furntech incubator and apprenticeship training programmes offered by the SETA is close to zero.	None No intermediary has worked with Southern Cape firms to facilitate cooperation, clustering and upgrading.
8	Saasveld Forestry College on NMU campus	None The senior leadership of NMU has turned its back on the Saasveld campus's history of forestry and timber expertise. It is converting the campus to serve as a satellite branch of the main university to offer mainly BCom and BAdmin degrees.	Limited The Saasveld campus offers diploma courses in saw-milling. It also used to host a state-of-the-art Furntech incubator (closed in 2014).	Limited Through its links to NMU, the Saasveld campus can offer a wide range of ET programmes, but not furniture manufacture and design. Diminishing links with industry as a consequence of declining staff placements and student internships.	None No intermediary role identified.
9	CPUT	None CPUT has abandoned its furniture programme because of low student numbers, high costs of workshops and the scarcity of lecturing staff. It has been driven largely by new public management principles of closing down poorly performing business units.	None CPUT has lost its furniture programme after the death of its solitary lecturer. Aspirant furniture designers can study a cognate field – industrial design.	Limited Students participate in annual industry competitions for the best furniture designs, some funded by the DTIC.	None No intermediary role identified.
10	TVET College	None The South Cape College does not offer timber or furniture courses – an odd reality given it is located in the middle of a century-old furniture hub.	None No furniture programme.	None No furniture programme.	None No intermediary role identified.

The second actor examined in Table 8.1 are the two boundary spanners operating in the Southern Cape furniture industry – Ernie Fritz of the former firm City Wood and Stefan Buys of the former firm Rustic Furnishings. They have exercised both sensing and seizing dynamic capabilities as outlined in Chapter Two by operating as intermediaries in the region, seeking to create a furniture cluster over the past two decades. As indicated in Chapter Six, these two actors have interactional expertise that was aimed at ‘winning-over’ wavering actors (Collins et al. 2010: 53). Fritz undertook several steps in the process of forming a cluster with the setting up of the firm City Wood in George that sought to achieve high volume manufacturing levels aimed at export markets. Fritz cooperated and coordinated the efforts of the collective that began to make up the cluster. He won significant financial support from the IDC and local suppliers. However, the initiative

lasted four years (1999–2003) and then was decimated by a sequence of negative events, including declining exchange rates. Buys's initiative was less developed, starting and remaining at the sensing stage of building linkages. He convened a collective town hall meeting in July 2011 to promote a cluster model appropriate to George and based upon his extensive research on international furniture hubs. Buys proposed his own import-export business as the intermediary for the cluster. As an already existing structure, Buys believed his firm could readily morph into the administration and coordination unit of the future cluster. The effort failed. The delegates from local and provincial government, industry and industry associations did not buy into his argument. In both cases, Fritz and Buys traversed part of the road to forming effective linkages, with Fritz undertaking a more complex process of intermediation (middle-range intermediation as defined in Chapter Three) and with Buys undertaking only basic forms of intermediation.

Organisations that failed their intermediary potential

There are three organisations that displayed intermediation potential but failed to deliver. These are the SDCI, the Furntech incubator and the SETAs. The SDCI, essentially a cooperative, scores highly in terms of strategic thinking and leadership (sensing), intervening to impact upon several government priorities (seizing) in one project: conservation and the clearing of alien trees, training of unemployed workers and the localisation of production (the manufacture of desks and chairs for South African schools). The project failed because of the reluctance and inefficiency of government in not establishing an effective external intermediary to lead and manage the project. Instead, the already overstretched SANParks agency within the DEFF was burdened with the management of SDCI. SANParks performed poorly, with the unit costs of their school desks being significantly higher than that of similar desks sold on the private market. The state's role within the SDCI comprised bureaucratic regulation of the process, not intermediation.

Similarly, the SETAs operated with a 'compliance, tick-box' form of governance, focused primarily upon financial management and state auditing requirements. The Furntech incubator operated as a training organisation and did not transition to the intermediation (networking) roles performed by successful incubators globally. In common with the SDCI, the strong potential for intermediation was lost.

Organisations that failed to build linkages

The remaining five actors – the state, private firms, CPUT, NMU and the South Cape College – did not display strategic leadership underpinned by dynamic capabilities, nor did they use the assistance of intermediaries. The two universities – CPUT and NMU – were created by mergers in the early 2000s, with CPUT emerging through a merger of two technikons and NMU being the result of a merger between a technikon and a university. Technikons were important applied technology organisations focused on the training of a technical labour force at a para-professional level in fields such as engineering, health

sciences, biotechnology, nature conservation, auditing, design, film and video (Garraway & Winberg 2019). Qualifications awarded were at a pre-degree, diploma level. Technikons were very similar to the British polytechnics that operated from the 1960s to the 1980s. In the 1990s technikons were granted permission to offer BTech degrees. A central element of their distinctiveness was that almost all qualifications were to be obtained with classroom instruction and an extensive period of experiential learning in industry termed cooperative education. Training a technical workforce, managing a cooperative education programme, and allowing industry experts to help shape national curricula, meant that these organisations worked closely with industry.

With the mergers taking place in the early 2000s, technikons became known as universities of technology, largely because of the reputational clout of the ‘university’ title rather than any other reason (Garraway & Winberg 2019). A second change was the introduction of work-integrated learning as a replacement for the older cooperative education concept. Alongside other changes in the external environment – such as the democratisation and massification of access to university for previously excluded black students and the growing phenomenon of graduate unemployment – the universities of technology (and comprehensive universities such as NMU) began to weaken the ties they had with industry between the 1960s and 1980s. This decline was largely due to their attempts to mimic universities – what the higher education literature terms academic drift (Garraway & Winberg 2019; Kraak 2006; Kruss & Visser 2017). Close ties with industry were replaced with ambitions to expand research, doctoral training and the recruitment of top scholars.

Neither CPUT nor NMU have prioritised furniture design as a distinctive field separate from industrial design. Therefore, limited interaction has occurred between the universities and the furniture industry in the Southern Cape. Another change in the external environment has been financial pressure on universities to close unprofitable business units. This directive was a major factor in the closure of CPUT’s furniture design course, together with other adverse facts – its only lecturer died, timber workshop costs were high, and student numbers were dropping. Against this background of non-provision of furniture design courses, it is not unexpected that no attempts to build stronger linkages have emerged between the universities and the furniture industry over the past two decades.

The South Cape TVET College in George does not train either artisan cabinetmakers or semi-skilled woodworkers so its contribution to the furniture LIPS has been non-existent even though it is located in a forestry-timber-furniture hub.

In short, South Africa faces a major intermediation problem given that it has created a huge number of quangos. Beyond the SETAs studied here, other examples of quangos include bodies such as SEDA and all its satellite branches, the Technology Innovation Agency (TIA), and the several craft hubs run by provincial governments that have mandates to support informal furniture makers. There are few examples of quangos functioning with an explicit understanding of performing intermediary roles. Most of these bodies replicate the ‘tick-box compliance’ model of the SETAs as described above. Effective intermediation roles have not been established in these quangos as yet.

CONCLUSION

Where does the above discussion on intermediation take us? Evidence provided in Chapters Six to Eight suggests that there is no understanding nor support for collective, interactive processes in industry and government within the furniture sector but most probably also across the broader economy. The dominance of neoliberal positions regarding the economy amongst private sector leaders and the economists who advise government, means that innovation approaches are ignored. This lack of understanding of innovation as an alternative economic policy framework for government is problematic because it ignores one of the strengths of the innovation systems approach – that of its emphasis on ecosystems and the inter-dependence of variables shaping the economy. This neglect has led to the predominance of single factor policy instruments being formulated and implemented by government in terms of its public policies. As indicated earlier in this book, establishing an incubator merely as a training unit and not as a body for interacting dynamically with its neighbouring industrial districts and all their component parts (the ecosystem) leads to the failure of the incubation programme. Second, government's top-down, short-termist and underfunded approach to many of its industrial policy initiatives, such as clusters and incubators, has rendered most of these initiatives unsuccessful, with little private sector buy-in. Lastly, the rugged individualism of industry players as characterised in Chapters Six and Seven provides major obstacles to the process of building cooperation, trust and collective production of goods. In such an environment, intermediation cannot easily emerge and flourish.

CHAPTER NINE

Reimagining the LIPS: Intermediation and ecosystem strategies for the renewal of the Southern Cape furniture industry

Intermediation has not really occurred on a significant scale in South Africa. It is not part of government's arsenal of socio-economic and industrial policy instruments. Hence, research into intermediation is difficult to execute – the few cases that exist are often partial attempts, particularly with state quangos, that have consistently failed to break with government bureaucratic and top-down traditions.

Those who proceed with intermediation studies end with a counter-factual dialogue, one which seeks to describe what has not happened (what is borne out by the facts) but what could be if a different pathway were traversed. Chapter Nine offers a solution to some of the limitations of a counter-factual analysis, by deploying a form of dialogue which reimagines what intermediation would look like in the Southern Cape furniture LIPS if it were implemented correctly and effectively.

Reimagining here is about correcting the errors of past attempts at intermediation. Therefore, the structure of this final chapter is as follows. The first part summarises the complex web of problems afflicting the South African economy in general and the furniture industry in the Southern Cape in particular. It presents a schematic outline of the main problems emerging from the study at the meta, macro, meso and micro levels.

The second section considers policy solutions to some of these problems. More specifically, the discussion seeks to reimagine the LIPS as a more effective local economy or ecosystem governed by extensive levels of intermediation. These interventions would be introduced by the key policy actors in the LIPS who would comprise: (1) an independent NGO appointed as intermediary to orchestrate effective governance in the LIPS; (2) the state and its various quangos in the region; (3) the collective of furniture firms, including the lead firm and the industry association; and finally, (4) the education and training organisations embedded in the region.

REIMAGINING

Barnett (2013) provides a useful conception of the process of policy 'reimagining'. A leading scholar in higher education studies, Barnett attempts to imagine a new conception of the university which is freed from the stranglehold of neoliberal ideas about the benefits of the entrepreneurial university and the obsession with measuring research performativity as imposed by new public management forms of administration (see Boughey & McKenna 2021). In trying to achieve this, Barnett notes that there is a dearth of new higher education ideas. He views it as a 'poverty of the imagination' (Barnett 2013: 6). In contrast, Barnett seeks new ideas which are simultaneously 'critical in tone, positive in spirit, and most importantly, realistic with an awareness of the deep and global structures that undergird universities' (Barnett 2013: 6). What is needed, according to Barnett, is not more critique and 'utopian ideas, but rather, feasible utopias' (Barnett 2013: 6).

In a similar vein, this concluding chapter seeks to posit an argument that is informed by both the critique offered in the book, but which is also informed by a reimagining of how intermediation policy interventions could have been different and more successful in the furniture LIPS of the Southern Cape if they had been implemented effectively.

Past attempts at intermediation in the LIPS have largely come from state-funded quangos such as the SETAs, the Furntech incubator and SANPark school furniture cooperative. However, these state institutions have not operated with a mandate of intermediation, but rather, as Chapters Six to Eight illustrate, they have imposed a top-down, bureaucratic, bean-counting mode of governance which has alienated employer participation in most of these initiatives.

The core proposition of this book is that intermediation and effective ecosystem governance provide potential solutions to the above problems, yet they have not been extensively utilised. Therefore, there has been minimal research and advocacy on the subject. This lack of evidence about intermediation and ecosystem governance is not because they have been shown to fail and have no value in developing economy contexts. Rather, it is because of the lack of knowledge of their benefits.

As part of this reimagining, the discussion will cite comparative policy vignettes from across the globe. Comparative insights are a useful although complex mechanism to begin the process of re-imagining. Useful, because they illustrate best-practice models of managing network and interactive relations between actors in various local economies across the globe. Complex, because such comparative analyses need to be treated with some caution as the political economies underpinning ecosystems and LIPS case studies elsewhere in the world are very different from the structural arrangements which underpin the Southern Cape LIPS.

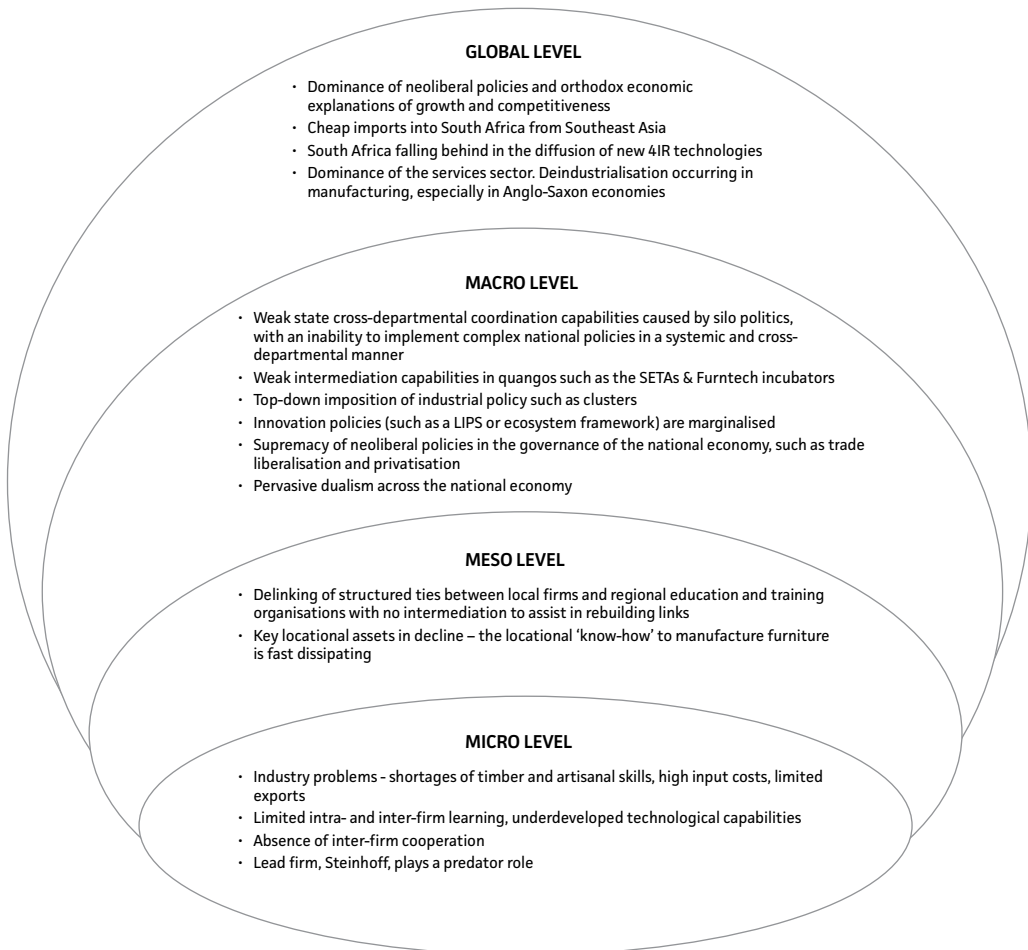
Nonetheless, reimagining requires taking some analytical risks in the process of developing more effective and realistic policies for the future. What follows in this chapter attempts to minimise these risks. Reimagining new policy ideas and making use of comparative policy vignettes are used here primarily as a means of highlighting how intermediation ecosystem strategies could work in a local economy such as the

Southern Cape furniture LIPS if they were more extensively adopted and appropriately implemented. It is about providing ‘insight’ into how intermediation would work and impact on the local economy. Currently, such insight is absent in the South African context.

Overcoming the problems of a weak LIPS

This book has outlined a complex web of constraints on growth and employment in South Africa operating at multiple levels – meta, macro, meso and micro. These constraints have been extensively covered in previous chapters and so will not be repeated in any detail here. However, Figure 5 below provides a multi-level schematic overview of the most important of these constraints as discussed in the previous chapters:

Figure 5. Lock-in of key forces acting upon the Southern Cape furniture LIPS at the global, macro, meso and micro levels



Source: Adapted from Cassiolato et al. (2018).

The extent of political and socio-economic decline described in Figure 5 is massive. The scale of problems affecting the Southern Cape furniture LIPS appear overwhelming and intractable. Most government industrial policy instruments introduced over the past thirty years (such as clusters and state-funded quangos) appear unable to trigger the necessary countervailing measures to halt the decline. What are the alternative policy options which could assist the turnaround and renewal of the furniture LIPS? The remainder of this chapter seeks to answer this through the process of reimagining the future trajectory of the LIPS.

This chapter will 'reimagine' four intermediation interventions occurring in four subcomponents of the LIPS. These interventions were first introduced in Figure 1 (Chapter One). They are:

1. A reimagined cluster with an independent NGO serving as orchestrator of the LIPS;
2. A reimagined role for state quangos, and in particular, the 21 SETAs;
3. The consolidation of the 'collectivity' of firms in the LIPS and their more effective governance; and finally,
4. Reimagining intermediation capabilities located in post-school institutions.

This reimagining chapter concludes by making the case for intermediation and ecosystem strategies to be central to a new political and economic dispensation – when it comes, if ever. The discussion suggests that intermediation strategies have many advantages as compared with traditional state governance methods. The latter are bureaucratically cumbersome, costly, and usually equipped with personnel who do not have the expertise to drive complex policy implementation processes.

INTERVENTION ONE: REIMAGINING CLUSTER POLICIES

The conception of clustering in the Southern Cape presented here is based on five core principles of ecosystem effectiveness: first, that all players need to understand the centrality of achieving collective efficiencies (e.g., joint actions and shared resources) as the primary basis for profitability in the sector; second and relatedly, that there is a need for active forms of networking and interaction between all actors and the consequent sharing of knowledge and other resources; third, that all flawed existing policies and approaches in the industry (like the failure to replant pine trees due to bad privatisation policies) need to be dismantled and replaced with more appropriate and achievable policy goals; fourth, that the dissipation of a skilled furniture workforce in the LIPS needs urgent attention; and finally, a lead firm is needed to build small firm capabilities and provide access to both local and global markets (Schmitz 1999; Maskell & Lorenzen 2004a, b).

Chapter Five and Six have outlined how the historical cluster which emerged naturally from the late 1890s onwards began to decline (deindustrialise) from the early 1990s onwards. The Southern Cape local economy now serves the interests of new economic sectors in the region, including finance, real estate and tourism. Furniture production, and manufacturing more generally, are not significant players in the region anymore.

Therefore, the furniture sector in this region is now not considered a national industrial priority, and the state has reneged on promises to use industrial policy as a lever to resurrect the industry in the Southern Cape. It was left to two entrepreneurial individuals – boundary spanners – to champion the cause of renewal in the region. Unfortunately, they did not receive sufficient support from the state and other firms in the sector. Interestingly, Stefan Buys, a former furniture manufacturer and one of the boundary spanners, had done significant research prior to his cluster advocacy beginning in 1999. Buys proposed various strategies informed by his research on highly successful furniture cluster models in Brazil and Sweden.

Learning from the Brazilian furniture industry

Buys spoke of the impressive rise of furniture production in the state of Espirito Santo – a region with natural and commercial forests. This is the same location that Peterson (2015) described in Chapter Three – a region which recovered from the decline in coffee production globally in the 1970s by reinventing itself as a furniture hub using local timber. A number of factors triggered this rise of a new industry in the 1970s onwards – the arrival of several Italian immigrants with cabinet-making and furniture production experience, and the presence of excellent native hardwoods and sawmills. Also, the lead firm, Movelar, played a key role in diffusing knowledge about the industry and its market requirements to local firms. As part of its ecosystem leadership, the lead firm also initiated several innovations in the cluster – for example, introducing fibreboard into the mass production of furniture and the purchase of a cardboard packaging firm to assist with the new demand for flatpacks, which in association with containerisation has helped the cluster enter global export markets more competitively.

When Movelar closed because of the financial crisis of 2008, many former employees of the firm regrouped and created a solid network of small suppliers and subcontractors, venturing into the furniture business for themselves. This restructuring away from one large lead firm to many smaller firms was facilitated by collaborative action among local entrepreneurs and the public sector to improve the productive capabilities of local firms (Peterson 2015). But most importantly, the lead trade association for the industry in the region, Sindimol, played the role of an intermediary and represented local firms in negotiations with employers and the state on matters ranging from worker safety, environmental licensing and land use. Sindimol is led by the interests of local firms who have representation on its board. This intermediary assists entrepreneurs in obtaining business services from other societal actors such as private networks and government agencies (Peterson 2015).

Learning from the Swedish furniture industry

Buys was also interested in the Swedish furniture industry. There had already been some contact between Swedish furniture sector agencies and the Southern Cape furniture LIPS – for example, the now-closed Furntech incubator in George was funded by SIDA.

Interestingly, debates in the literature about the Swedish furniture industry are extremely helpful in envisaging a new pathway for South African furniture production. Crouch et al. (2009) offer up Tibro (the home of IKEA) and a neighbouring village, Virserum, as case studies to illustrate the critical point of differing developmental pathways in local furniture production. They start off by noting that Sweden is a capitalist economy reliant on large firms, even in the furniture industry, unlike Italy and Germany whose furniture industries are based on village clusters comprised of high-tech, family-owned small firms. The Swedish furniture sector historically has been mass production oriented, dominated by a few large firms – IKEA being the leading example. Yet Tibro flourishes with a production mode based on family-owned small firms who possess sophisticated craft, design and digital skills. In contrast, Virserum, another historical small firm cluster village located close to Tibro, has failed and furniture production has been all but shut down. Crouch et al. argue that the demise of Virserum and the success of Tibro has largely to do with the collective efficiencies successfully generated in Tibro but not in Virserum. Firms in Tibro cooperate with each other, train their workers in a training centre run by an intermediary, and share joint logistical arrangements. The Tibro village also has an active industry association and support from the local municipality. Tibro introduced the new digital technologies in the 1990s and 2000s, and its members take design seriously. Virserum failed on each of these collective efficiency counts, and as a consequence, furniture production shut down (Crouch et al. 2009).

The absence of comparative learning in South Africa

The contrast between these two furniture-making villages is a useful heuristic device to reflect on the Southern Cape furniture industry. South African cluster villages like George and Knysna have gone the Virserum route, even as the industrial policy spin from the DTIC and others preach the virtues of cluster formations such as Tibro. None of the reform initiatives introduced in Tibro or Espirito Santo have been implemented in the Southern Cape. In some cases, joint actions such as shared technological resources (the Furntech incubator) did materialise with Swedish assistance, but it obtained little local employer support and therefore failed. It was closed in 2014. Stefan Buys tried to popularise these innovative pathways to economic renewal in Brazil and Sweden, but he was met with resistance or uninterest from other small firms.

Reversing the current decline in the furniture LIPS is now an urgent necessity. Key players would have to be encouraged by state incentives to assist – for example, the large retailers and furniture manufacturers nationally (companies such as Coricraft, Wetherleys, the Bravo Group and the surviving subsidiaries of the collapsed Steinhoff Group such as Joshua Doore). DEFF and SANParks also have a major role in the management of the pine forests and the school furniture cooperative in the region. In short, interactive capabilities between government, firms and other actors such as the incubator, the TVET college and the school furniture cooperative need to be strengthened. Through this process, all these actors need to be drawn into a formal industrial policy initiative funded by DTIC, but led by local actors, ideally via an independent intermediary.

The state's bureaucratic tendencies need to be kept in check, and this can only be done by adopting an NGO or business mode of working. National government through the DTIC and DHET will also need to harness the participation of both the provincial and local governments (which have played no role in past efforts to turn around the fortunes of the industry). The work experience of boundary spanners in the region – in the form of retired former furniture factory owners – need to be brought in to add local embedded expertise. Such an initiative will require a dedicated support programme for 5–10 years, with adequate funding. Thereafter, the LIPS and its independent NGO intermediary may be in a position to function on their own without further state support.

The national government will need to abandon many of its former policy prejudices – for example, toward working with large corporate entities in the forestry, retail and manufacturing arenas, if it is to achieve the goals described above. It will need to activate appropriate cross-departmental governance capabilities across departments such as the DTIC, DHET and DEFF to stop the privatisation, plunder and decline of pine forests in the region. Cross-departmental efforts will also be needed to provide imaginative incentives for young people in the region to study and become furniture manufacturing employees – as cabinetmakers, designers, CNC technicians, digital experts capable of using 3D printing technology (especially in the field of rapid prototyping of new designs). Government will also need to provide leadership in the industry regarding the demise of mass production – something which will be difficult to rectify if cheap imports from Southeast Asia continue to grow. Relatedly, it will need to provide leadership on the question of promoting design-intensive bespoke manufacturing and its potential for increasing exports to global markets keen on the African design motifs built into some of this bespoke furniture. DHET in particular will need to set up a new degree programme in furniture design and digitalisation – in cooperation with a university of technology. Failing this, the LIPS leadership will need to approach a private provider to offer this degree programme.

The need for an intermediary to govern the reimagined cluster

In the absence of certainty that a lead firm or a publicly funded quango could play an effective role in orchestrating the renewal of the Southern Cape furniture LIPS, the only remaining option is for the lead actors to agree to the appointment of an independent intermediary to perform this vital role. There was in fact an NGO in the region over the past decade attempting to voice the need for intermediation to assist in the turnaround of the Southern Cape regional economy. This was the Southern Cape Economic Development Forum, now rebranded as the Garden Route Economic Development Forum (GREDF). The GREDF is in turn associated with its mother body, the Western Cape Economic Development Forum. The WCED is a 'public benefit collaborative intermediary organisation' that is inspired theoretically by the work of regional innovation studies internationally. The WCED was set up in 2012 by the Western Cape Premier, Alan

3 <https://wcedp.co.za/introduction>

Winde, and Cape Town Partnership head, Andrew Boraine. Boraine went on to be the intermediary's first CEO. The motivation for the establishment of the WCED was that the existing quangos funded by the provincial government were not being sufficiently effective, largely because they were not consulting employers and other regional actors on an on-going and meaningful basis. What was needed were more structured long-term partnerships. The WCED now spearheads these partnering processes. One of the goals of the WCEDF is to convene 'bridging platforms that balance diverse interests in contested, low-trust environments, creating safe spaces for action-oriented learning and experimentation'.⁴

More specifically, the WCED has played a role in supporting the GREDF tackle its interventions in the forestry, timber and furniture industries in the Southern Cape. Justin Brown, coordinator of the GREDF, has been involved for many years in promoting debates on clustering in the Southern Cape furniture LIPS. Brown argues that a cluster initiative can only be viable if managed by an effective intermediary organisation. He believes the Southern Cape should be known as the 'wood capital' of the country as is the case with Zhu Zhiang (the Pearl River Delta) in Guangdong province, China, which produces 30% of China's furniture exports and is referred to as the furniture capital of that country. Brown doesn't believe government should lead the process as intermediary – 'we tend to wait for and rely on government structures too much as an industry' (Interview with Justin Brown, senior official of the Southern Cape Economic Development Forum, 5 June 2017). Hence, his preference is for a private sector-driven vehicle or independent intermediary. Government needs to enable and support the process – for example, imposing tariffs on imported furniture from places like China and Vietnam, which would enable local manufacturers to take up the gap as has been the case with reviving the clothing industry (Morris & Levy 2016). Firms organised into clusters would also develop a stronger and more united voice over time to negotiate with government for stronger forms of support. Even though the contribution of WCEDF intermediation was minimal – furniture manufacturing was not identified by the Western Cape Provincial Government nor the WCEDF as a priority sector – the very existence of the WCEDF as a good example of intermediation and the fact that it works across the province suggests that an NGO such as the WCEDF could be appointed as the intermediary in the reimagined Southern Cape furniture LIPS.

INTERVENTION TWO: THE REIMAGINED ROLE OF THE SETAS

The second component of a reimagined LIPS would comprise a major reconfiguration of the state management of its quangos – in this case, the 21 SETAs – so that a reconfigured new skills council can function more effectively as an intermediary. Space constraints in this chapter do not allow for the reimagining of the reform of other state quangos such as the former Furntech incubator and SANPark cooperative. The reimagining of the SETAs undertaken here comprises general reform principles which aim to enable organisational

4 <https://wcedp.co.za/introduction>

effectiveness through intermediation. Such principles would apply across other state quangos suffering similar organisational ineffectiveness and poor relational dynamics with external players like the SETAs.

In the next section, several reforms are proposed to restructure the entire SETA landscape and levy fund. The single most important priority of the reform process would be to retain the 1% levy fund as legislated in the *Skills Development Levy Act* of 1999. This fund – which has grown larger than 15 billion rands annually – is a national treasure which should continue assisting the process of overcoming Apartheid's damage of the education, training and employment prospects of black citizens of this country. There will be many vocal neoliberal economists who will suggest that the levy fund is a wasted tax and should be terminated. This would be a mistake as major efforts are still required to upskill the current working population and their children – the future workers of South Africa. This will require far greater income than that offered up by the skills levy, but it is a start. The levy fund should be reconstituted as a Human Development Endowment Fund (as is the case in Singapore, one of the 'Asian Tiger' developmental states) dedicated to building the education, training and employment futures of all people, young and old.

The current hostility towards the levy fund is not about it being an unnecessary tax, but about it being a wasted and badly utilised financial resource. The task is therefore to make the SETA system work more effectively through intermediation and to initiate an end to their past *modus operandi* based on bureaucracy, imposition and compliance. A more streamlined SETA system can be achieved through the following six reforms:

1. A single entity should be created to replace the vast bureaucracy of the 21 SETAs. This single entity would exist primarily to administer the existing levy more effectively and strategically, based on sectoral expertise and intermediation capabilities. For the sake of convenience, this new entity will be referred to as the Skills Development Agency (SDA).
2. The SDA should have a professional staff of no more than 150 people nationally split across two departments: first, the central administration, housing the finance, human resources and monitoring and evaluation departments; and second, a Centre for Sector Studies, which would house the bulk of professional staff who have expertise in: (1) the key sectors of the economy; (2) labour market dynamics; (3) local economic development; (4) youth unemployment; and (5) the skills requirements of key sectors in the national economy.
3. The SDA would be governed by a board of ten eminent persons who would perform all necessary oversight functions, including the approval of projects identified for support by the professional staff, as well as the task of ensuring on-going quality control. Critically, the success of these large-scale investments in education and training would need to be determined through sound monitoring and evaluation techniques, with progress and problems brought to the board's attention.
4. The levy fund should become an endowment fund like Singapore's Lifelong Learning Endowment Fund, which is a state-created fund topped up periodically

with surplus state financial resources (e.g., higher than expected annual tax returns). The Singapore Endowment Fund was launched in March 2001 with an initial capitalisation of US\$500 million. Following further contributions from the government, the fund has now reached US\$5 billion. Annual interest earned on the Endowment Fund is used to finance and expand training infrastructure (Sung et al. 2011: 25–26). Similarly, in South Africa, the SDA would have an income exceeding ZAR23 billion rands annually.

5. The SDA would solicit proposals for support directly from actors in the economy and post-school sectors. The scope for support should be open and wide – enabling the development of any post-school education and training asset that is required by society. This could be: a new medical faculty at Nelson Mandela University; the upgrading of four TVET colleges in the leading metros – as Advanced Tertiary Colleges; or a nationwide apprenticeship scheme to promote green and digital skills.
6. The SDA would be a funding body, not a training body, and its natural partners in training would be the universities of technology (UoT), the public TVET colleges, and the private training agencies. However, to do this effectively the government would have to overcome its hostility towards private provision. In future, all high-quality private training institutions need to be fully used to help resurrect the national economy and all its ailing sectors. Similarly, the public TVET colleges need a dramatic transformation, first, to halt their slow demise, but more specifically, to stop the colleges supporting easy fix supply-side training programmes – which train young people without any guarantee of future employment. Colleges would need to relearn how to build linkages with the private sector and win over employers by meeting their demand-side needs – something discussed in the next section. In this ‘feasible utopia’, the SDA, the restructured Endowment Fund, the colleges, private training agencies and universities of technology will comprise the new skills dispensation. It is with this renewed furniture ecosystem that economic growth could once again become possible, based on proper demand-led relationships between actors.

Complementary changes would also need to be made in industrial policy, first by piloting, experimenting with, and adopting intermediation strategies as part of DTIC’s arsenal of policy instruments, and second, assisting in the development of industry associations in taking on the role the 21 sectoral SETAs supposedly performed in articulating to government the vocational training needs of key economic sectors.

Such a trimmed-down structure would go a long way in resolving some of the problems faced by the existing system of 21 SETAs – that of bureaucracy and its tick-box culture of compliance, and the problematic promotion of supply-side education and training projects that have no link to demand-side conditions or the successful employment of graduates.

Building dynamic interactive capabilities in the SDA

Organisational restructuring (such as reducing 21 SETAs into a single entity) would not be sufficient if it remained an isolated reform. Developing the dynamic interactive capabilities of the employed staff in the SDA would also be important. Over the past 20 years since the launch of the SETAs, there has been no internal attempt to build dynamic interactive capabilities amongst core leadership teams – to equip such senior leadership to better understand the sector they work in, and how to gather strategic economic intelligence on that sector to guide leadership decisions. Much of the strategic intelligence collected by the skills system has been produced by private consultants – and some of it is of extremely poor quality and value. In so doing, these SETAs have failed to attain buy-in from employers to participate in the SETA-led skills dispensation. Culpepper (2003) and Sung (2010) stress that employers need to have a meaningful say in any government reform or it will fail. As owners of firms, these employers need real input into policies that supposedly will benefit them – or they will abstain from participation.

The next section will unpack four inter-related core functions that would be required of staff working in the SDA, post-school organisations and all associated intermediaries. The staff of these critical economic bodies would need to possess the following intermediation capabilities:

1. Provide a mobilising vision for the sector or LIPS;
2. Possess the ability to continuously produce labour market intelligence through evidence-based research;
3. Possess embedded expertise of the sector/region/locality; and
4. Develop leadership that can accomplish boundary spanning, undertake brokerage and partnership through exercising their dialogic capacity.

Provide a mobilising 'vision'

Lead intermediary agencies such as the proposed SDA would need to provide entrepreneurial vision which can act as the 'focal points' around which private sector decisions can be made and coordinated. This sensing function is perhaps the most challenging and would need to be done cross-departmentally across government, including the DTIC, DHET and the DST. It would also need input from government departments in charge of specific sectors in the economy – for example, energy, forestry and agriculture. Unfortunately, the current government has been extremely poor at this sort of whole-of-government coordination. But greater capacity in cross-departmental coordination must be developed for future projects. It is an unavoidable necessity for future progress.

This 'visioning' includes activities such as indicative planning, detailed industry studies, the encouragement of private actors to form collective associations such as value chains or regional clusters, and the continuation of dialogue amongst private actors themselves to forge a common vision (Crouch et al. 1999: 174; Chang 2004: 170). Operationally, visioning would extend to the formulation of a Sector Skill Strategy, and then its marketing and branding in the sector to win employer and state buy-in. These

would go a long way in fulfilling Petersen and Kruss's (2020) emphasis on developing seizing, sensing, integrating and coordinating capabilities. This strategy should be a 'living' document that informs the actions and 'dialogic voice' of the SDA staff involved. It must reflect the real demand-side needs of employers and have state support.

Produce labour market intelligence

A key requirement for effective sector skills councils globally are labour market and sector-focused research skills (Ashton 2006). A dedicated unit within the SDA – the Centre for Sector Studies – would have to have the appropriate capabilities to produce and interpret strategic national and sectoral labour market information. This research centre would need to provide labour market and sectoral information to the SDA annually and feed this strategic intelligence back into the national skills system.

It is important to note that the economic intelligence required by the SDA would not all have to be produced internally. The national statistical services of the state and expert research centres at universities would provide a significant chunk of this information annually. However, this expertise would also be required within the SDA to enable strategic planning at sectoral, regional and local level. Such gathered information would then be circulated within the existing SDA networks of cooperation on skills development and employment. As indicated throughout the book, networks are an important conduit for information sharing, enabling all participants to increase their knowledge about operating in the sector.

Possess embedded expertise of the sector

In addition to labour market information, SDA professionals would need to have intimate knowledge of the sectors they operate in. More specifically, staff members in the Centre for Sector Studies would have to develop expertise of the economic sector they work in, the problems faced and the solutions needed – both in terms of skills development, but more broadly, in terms of moving up the sectoral value chain. This would require personnel in the SDA who have both theoretical knowledge of the sector, but also practical working experience in the sector.

Writing from a vocational education and training perspective, Crouch et al. (1999) argue that these intermediary agencies (such as the SDA) need to possess an authority based on 'constantly updated knowledge so that firm competencies can be ratcheted up and so that educational institutions and relevant government departments can be kept in touch with what is required' (Crouch et al. 1999: 232). Similarly, Payne and Keep (2011: 18) in a critique of the British skills system, argue that sector skills councils need to be able to give firms 'expert advice and support that is tailored to their circumstances and needs'. This is especially important in the case of small and micro enterprises. Unfortunately, in South Africa research skills and sectoral expertise are absent in the current set of SETAs. Most staff employed by the SETAs have no industry experience – most come with prior experience of working in the school system and the adult education system. Unfortunately, knowledge of formal schooling is an insufficient preparation for understanding the dynamics of a complex economic sector.

Boundary spanning, brokerage, partnership and 'dialogic capacity'

Another key intermediation function of staff in the SDA, particularly senior staff, would be that of boundary spanning. First and foremost, it requires leadership with a determination to overcome the silos of the past:

Leaders must define the common purpose of the partnership and educate partners on the importance of cutting across the various boundaries that may separate their efforts. The benefit of turning disconnected specialised organisations into cross-functional teams is to create a system that serves workers and businesses holistically, cost-effectively, and creatively. It adds value that exceeds the capacity of each partner working alone. (OECD 2008: 81–82)

Moss et al. (2009: 17) see the role of boundary spanners as serving to establish networks 'as mutually trusted lynchpins between social groups'. In short, they 'help overcome informational asymmetries, establish a common set of expectations, and facilitate goal adjustment' (Williams 2002: 108). Boundary spanners have the capacity to bring together unlikely partners, break through red tape, and see problems in new ways which defy conventional wisdom. Brokerage is related to boundary spanning. Williams (2002: 117) defines the act of brokerage as follows:

Brokering ... depends on the employment of a range of competencies and skills – an acute understanding of interdependencies between problems, solutions and organisations; an interpersonal style that is facilitating, respectful and trusting; and a drive to devise solutions that make a difference to solving problems on the ground.

Brokerage is often used as a substitute term for intermediation, but here it is viewed as a capability. Brokerage is often needed in contexts where public policy requires a defined set of social partners to work together and collaborate – but something which is at odds with their normal governance routines. In some cases, certain stakeholders are difficult to bring on board, for example, small enterprises. They tend (at least initially) to stay away from collective activities of employer associations because they have few resources to allocate to activities outside of their own production demands. However, through the efforts of brokerage, small enterprises can become an integral part of the public policy process, for example, through inclusion in the supply chains of larger corporations (OECD 2012).

Undertaking effective brokerage requires 'dialogic capacity'. Dialogic capacity is the ability to promote problem-solving discussions among members. Discussion allows groups to overcome informational gaps because it allows them collectively to brainstorm and to devise solutions no member would have imagined individually. If an organisation has this capacity, 'its ability to broker deals among conflicting members gives these decisions a certain legitimacy with all members, even those who are not favoured by a given bargain' (Culpepper 2002: 777). Hausmann et al. (2008: 4) see this dialogic capacity as central to industrial policy:

the private sector needs the government to help internalise the various externalities associated with the cost-discovery process and to provide many of the public inputs (standards, infrastructure, certification, property rights) that only the government can. The government in turn requires the cooperation of firms and entrepreneurs because it needs to elicit the relevant information about the obstacles and opportunities they face and because it has to be able to influence their behaviour in the desired direction. Hence the necessity of collaboration between the two sectors in the search for distortions and their solutions. Our understanding of what industrial policy does (or should do) takes this necessity as its starting point. We take “good” industrial policy to consist of those institutional arrangements and practices that organise this collaboration effectively.

The above discussion about the SETAs has proposed two sets of reforms. The first is organisational, entailing the reduction of 21 SETAs into a single centralised entity. The second is about employing and developing staff with intermediation capabilities. Change will only come about in terms of skilling the LIPS if both reforms are implemented simultaneously. Organisational change on its own will not suffice.

INTERVENTION THREE: UPGRADING THE CAPABILITIES OF THE COLLECTIVE OF FIRMS

The third actor in the reimagined LIPS is the collective of firms which has the following composition:

1. The large firms in the forestry, furniture and retailing sectors. These include companies that have been discussed in this book, including MTO (forestry), former Steinhoff subsidiaries such as Joshua Doore and other retailing firms such as Coricraft and Wetherleys;
2. The collective of small furniture firms operating in the LIPS; and
3. The industry association representing all firms in the furniture LIPS. Currently, this body is the South African Furniture Initiative (SAFI).

Each of these firm actors operating within the collective have a distinctive role to play in the LIPS. For example, Walrave et al. (2013) note that the key governance function of ‘orchestration’ in the LIPS is usually performed by a lead firm. These authors define the task of orchestration in an ecosystem as being the responsibility of the lead firm who facilitates the making of key decisions such as: choosing technological standards, establishing the resources and rules to be shared among actors, gaining insights into who could be the appropriate complementary actors to include in the ecosystem, and assuring fair mechanisms for value appropriation. In South Africa, there is little industrial policy on the role of large firms in terms of spillover benefits to small firms, the diffusion of new technology, or the development of small suppliers in value chains. Indeed, the national government has not viewed the role of large firms in a benevolent

light in terms of their contribution to the national economy. The 2007 OECD review of South Africa's innovation policies noted the almost total neglect of the positive role that large firms can play in innovation and growth. In part, this stance is for good reason, given the collaboration of large corporates with the Apartheid regime that existed until the early 1990s. Many large firms currently operating in the forestry-timber furniture value chain do not have a good record of inclusivity when it comes to developing small firm capabilities and deracialising the human resource profiles of the sectors involved. None have been keen to play a lead role in the formation of clusters in the Southern Cape furniture LIPS nor have they supported intermediaries seeking to do this – as was evident with the two boundary spanners in the Southern Cape furniture LIPS.

In short, there is significant evidence that the large firms in the Southern Cape LIPS are mostly driven by self-interest with little commitment to initiatives that would benefit the wider LIPS. From a policy perspective, this will need to change in terms of industrial and innovation policy, and large firms need to be enticed into playing the role of the lead knowledge accumulator in the sector through the diffusion of knowledge resources more widely into the local economy, especially to smaller firms (OECD 2007). This is not a problem specific to South Africa alone. Ferretti and Parmentola (2015: 29) see the main challenge for local innovation systems globally as persuading large firms (indigenous and multinational) to localise through local supplier development.

For small firms in the furniture sector the challenges are different. The priority would be to develop effective policies that rebuild the linkages between these firms and post-school organisations (to be discussed in more detail in the next section). This practice is needed if greater artisanal, design, digital, business and managerial skills are to be developed in the furniture sector. Such an upgrading process would need to consider the diversity of product market segments in furniture manufacturing that have very different production requirements, albeit mass production, bespoke or maker firms. In the past, the DTIC has inappropriately promoted one-size-fits-all policies across the entire furniture value chain.

The role of industry associations in harnessing collective efficiencies

Another priority would be for small firms to achieve a greater understanding of intermediation prior to the introduction of collective efficiency measures such as clusters. Small firms would need a learning and advocacy process to fully understand the potential benefits that could accrue to their industries if they supported collective efficiency interventions such as shared infrastructure and training resources. Currently, state efforts in building clusters are largely top-down, imposed upon firms, with policy instruments inappropriate to local conditions. Small firms often exit from these initiatives because of the lack of prior advocacy work by government or industry associations. The science behind innovation and intermediation policies is unknown to most small firm owners. Currently, innovation policies represent an inaccessible economic paradigm that clashes significantly with orthodox economic logic (which small firms may be more familiar with).

The most appropriate intermediary to assist with this would be SAFI. However, as illustrated in Chapter Seven, SAFI is ill-equipped currently to perform this function. It has struggled to appoint permanent leadership, it has had limited success in working with small furniture firms to change their market behaviour, cooperate more, share resources and move from low-cost standardised goods to a more sustainable position higher up the value chain. In an ideal world, the LIPS would be producing higher quality mass production, mass customisation and bespoke furniture. However, evidence in Chapters Six to Eight suggest that it is unlikely SAFI has impacted significantly on this technological upgrading process – even though they ‘speak’ the language of promoting ‘world-class manufacturing’ (SAFI 2019). In addition, SAFI has also not impacted at all on the decline of artisan production, particularly the key cabinetmakers required in the industry. It has also not succeeded as yet in establishing a new degree programme in furniture design at a South African university of technology, even though this was first adopted as a key organisational goal in 2017. The industry association exhibits the organisational features of a quango linked to the state bureaucracy. It does not reflect the independent and relational attributes needed to be an effective intermediary. Efforts will be required for it to transform so as to adopt some of the intermediation characteristics of the Brazilian industry association Sindimol located in the Espirito Santo furniture region as discussed earlier.

Reimagining the role of lead firm in the furniture LIPS

Industry associations are not the only bodies requiring transformation to be brokers of optimal economic outcomes for the LIPS. So do lead firms. As indicated in Chapter Four, Steinhoff has been the lead firm in the furniture industry for the past two decades prior to its decline in late 2017 because of large-scale corporate corruption and fraud. During those two decades, Steinhoff more accurately acted as a ‘predator’ firm intent on increasing corporate profits at the expense of all other actors in the LIPS, particularly small furniture manufacturing firms and competitor furniture retail corporations. As an example of Steinhoff’s destructive contribution in the value chain, the firm undertook a significant restructuring exercise in 2014. Mr Stephen Fisher, a senior executive of the Joshua Doore Group of companies indicated that because of the dramatic changes in the market posed by cheap Chinese imports and the non-competitiveness of South African furniture products in export markets, the Steinhoff group decided to undertake a largescale restructuring and rightsizing of the furniture retail firms under their control. All in all, Steinhoff closed 250 stores and retrenched 4 110 employees nationwide (Interview with Stephen Fisher, a senior executive of the Joshua Doore Group, Steinhoff, 17 Sept. 2017.; see also Dineo Faku, *Business Report*, 20 February 2016).

This description of rightsizing undertaken by Steinhoff does not comprise the full list of its corporate malfeasance. The firm closures made by Steinhoff as described in Chapter Five show the true nature of the firm – as a local and global leader of what Mazzucato (2013: 23) terms ‘parasitic ecosystems’. One aspect of this was Steinhoff’s determination to dominate the entire global value chain for furniture. As confirmed by

the daughter of Steinhoff's global CEO Bruno Steinhoff, Angela Kruger-Steinhoff, who was on the board of the company, Steinhoff sought and achieved significant vertical and horizontal dominance in the sector:

We have warehouses, we have distribution centres, we have logistics companies, we have retail stores, we have furniture production companies, we have the entire supply chain built up in all of these countries. (Angela Kruger-Steinhoff, quoted in Naude et al. 2018: 7)

A second aspect of this emerging parasitic role has been the prioritising of the short-term interests of shareholder value and financial capital over the longer-term concerns of manufacturing in a natural resource sector. This phenomenon was taken to its extreme by Steinhoff, who made more money from the financing deals behind all its acquisitions than from actual manufacturing value-added. Many of the furniture manufacturing firms incorporated into Steinhoff through its various financial shenanigans – like Divine Pine in this study – were subsequently merged with other entities, restructured, sold or closed, adding fuel to the accusation that Steinhoff acted as predator in a scorched earth policy to eliminate competition and to extract maximum rents from the forestry, timber, furniture making and retailing sectors.

Learning from IKEA and Walmart

How does the Southern Cape furniture LIPS move beyond the damage done by Steinhoff? Predator lead firms are not a uniquely South African problem. Konzelmann et al. (2005) highlight the differing productive systems and firm behaviours underpinning two very different global retail firms – IKEA and Walmart – who both sell home décor and furniture. Walmart represents the worst of global corporations, thriving on low wages, non-unionised workers, rock-bottom payments to suppliers, low-cost goods and largescale offshore manufacture. Its production model is based on exploiting economies of scale, running large-scale operations globally and applying state of the art logistics technology. Walmart has had a damaging effect on the US retail sector, driving other small to large retail players out of business (Konzelmann et al. 2005: 11).

In contrast, IKEA represents some of the best qualities of more enlightened global corporations. Its corporate philosophy is to provide consumers with well-designed high quality furnishing products at affordable prices. It works closely with its suppliers in Sweden and across the globe, in long-term relationships that enable the corporation to upgrade the capabilities of firms through technical assistance regarding improving efficiency, reducing costs and delivering quality. Environmental sustainability is also a major component of its sourcing and use of raw materials. Distribution is another key priority, with 27 distribution centres in 16 countries to ensure that the route from supplier to customer is direct, cost-effective and environmentally friendly (Konzelmann et al. 2005).

It is very clear that these two corporations – emblematic of two very different types of capitalism – exercise their corporate power in different ways. Walmart is a product of

American neoliberal ideology which idealises free and unrestricted markets, and believes the exercise of a blunt managerial prerogative is the best way to manage relationships within and between firms. It seeks out countries with poor labour legislation, social protection and corporate standards to avoid employing unionised workers. In contrast, IKEA, reflects key principles of Swedish social democracy with its emphasis on distributional equity and corporate responsibility, for example, in its banning of the use of illegal logging or child labour amongst any of its suppliers. It commits to the long-term development of its suppliers (Konzelmann et al. 2005).

Learning from Woolworths

A similar contrast between productive systems in the retail sector can be made in South Africa – between Steinhoff and Woolworths. Woolworths is one of South Africa's largest retailers with a strong emphasis on corporate social responsibility. The company is a good South African example of enlightened business, believing that their obligations to shareholders for profit maximisation is best served by involvement with stakeholders who benefit from or who are harmed by the corporate actions of Woolworths. A major component of Woolworth's business strategy has been to assist small food producers in rural settings to improve farming methods through improved soil and plant health – and in so doing, gain access to Woolworth's vast network of food value chains. In 2009, the organisation implemented a move away from conventional farming methods and pioneered a new system of farming fresh produce, which was aimed at improving soil and plant health. This occurred after the company realised that conventional farming methods were not sustainable and were depleting the soil's capacity to produce quality fruit and vegetables as its carbon and biodiversity content shrunk (*News24* 2009). Woolworths committed in 2009 to ensure that all of Woolworths' locally grown fresh produce, sourced from supplier farms around the country, would be produced through this new approach.

Timbali Technology Incubator is one of the intermediary organisations chosen by Woolworths to assist small food producers to meet the GVC standards for inclusion in local and global trade. The programme implemented by Timbali aims to train and mentor small-scale women farmers. The targeted participants all have their own household gardens. They are all black women and 20% of them are youth. For every direct beneficiary of the programme, there is a positive spin-off effect for eight other employees (Timbali 2022). Timbali's CEO, Louise de Klerk maintains:

This intervention will be a practical exercise in stepping up the farmers' existing production with scientific and commercial practices. In addition to the skills development in vegetable production, the beneficiaries will have the advantage of peer group synergy by being included in Timbali's existing small-holder farmer clusters that are already supplying viable markets at the correct time with given quantities at optimal prices. The local market access network will be an incentive to continue with the production in collaboration with the clusters of small-holder farmers. We project

that the new participants will increase their yields by 15% over a 12-month period, not just improving food security in South Africa, but creating sustainable livelihoods through farming in our rural communities. (Timbali 2022: 36)

In a reimagined furniture LIPS, the state would need to engage with large corporations seeking ways in which they can support the development of local firm capabilities, and in so doing, support local economies such as the Southern Cape LIPS. In such deliberations between state and capital, the local case study of Woolworths could be used for learning purposes. Relevant components of the Woolworths and IKEA approach to supplier development could be appropriately adapted and applied to the furniture sector in the Southern Cape. Additional adaptations based on specific on-the-ground conditions may also be necessary. With Woolworths representing what is possible from a lead firm in an adjacent South African economic sector, it is not impossible to imagine that a large furniture retailer can be enticed by state industrial policy and rounds of deliberation between the state, capital and other actors to perform similar functions of supplier development using intermediation strategies in the furniture sector.

INTERVENTION FOUR: REIMAGINING INTERMEDIATION IN POST-SCHOOL ORGANISATIONS

The fourth and final collective actor in the reimagined LIPS (as illustrated in Figure 1) is the collective of post-school organisations that should service the skills needs of the furniture industry. Unfortunately, the collective impact of these education and training organisations on the local economy has shrunk considerably over the past decades. The Furntech incubator has closed, the South Cape TVET college does not provide any training to the benefit of the forestry and furniture sectors, the former forestry training college (Saasveld) has been incorporated into Nelson Mandela University, and its campus in George has been transformed into an undergraduate venue for generic BCom degrees – making forestry and furniture a secondary focus. The embedded sectoral expertise of forestry and furniture that was once located in the LIPS has dissipated considerably.

Petersen and Kruss (2020) – as mentioned in Chapter Eight – have responded to this issue of declining linkages by suggesting a model highlighting the components required by post-school organisations to initiate linkages with firms in various economic sectors. The first requirement is for such organisations to acquire leadership equipped with dynamic interactive capabilities – such as sensing (spotting, interpreting and pursuing external socioeconomic opportunities) and seizing (acting on the sensing insights) (Petersen & Kruss 2020; see also Borrás & Seabrooke 2015). Leih and Teece (2016: 183) suggest that such leadership should build and lead ‘the innovation ecosystem surrounding the university to promote regional and national development’.

The capabilities required for sensing and seizing will not arise automatically and need to be planned for. This type of educational leadership currently does not appear to exist in South Africa, in part because of the lack of appropriate training, but also because the dominant economic policy discourse for nearly thirty years has been that

of neoliberalism with its strong message of limiting state interference in the otherwise effective regulation by the market of the wider economy and society. This deficiency in approach also has to do with the antagonism within educational leadership in both academia and the civil service toward what is termed ‘economic determinism’ in the political economy literature. Economic determinist approaches to education, according to the extant literature, contain the risk that if education leadership were to orient post-school organisations towards more effectively meeting the needs of local, regional and national economies, through changes to the production, organisation and dissemination of knowledge, this would constitute a reductionist surrender of the broader purposes of education to the narrow demands of the market (Vally 2007; Walker & Fongwa 2017; Allais 2014; Boughey & McKenna 2021).

Given the above opposition, the absence of a ‘sensing and seizing’ leadership in post-school organisations will be difficult to overcome. A customised programme for the leadership of post-school organisations may be a helpful start. Such a programme could be run through wide-ranging cooperation between the leadership bodies of vice-chancellors and CEOs of post-school organisations and the state. A cooperative academic programme between expert higher education and economics programmes at some of South Africa’s top universities may be the appropriate place to locate such a programme. However, it is a massive task, requiring a radical shift in the traditional mindsets of existing post-school leadership.

The second component of Petersen and Kruss’s (2020) model are the ‘partnership offices’ discussed in Chapter Two. The economic lens of such offices would be regional and local, because most post-school organisations have mandates that are defined by locality. Again, these organisational capabilities will need to be developed.

Building these dynamic interactive capabilities amongst post-school leadership will be a challenging assignment. In the era of *laissez faire* capitalism which South Africa entered in the late Apartheid period, from the mid-1980s onwards, these capabilities, which were developed effectively for whites only by the Apartheid developmental state, began to dissolve. Post-school leadership in the 1980s onwards has increasingly been influenced by neoliberal notions of leaving questions about the trajectory of the economy to free market forces, prioritising new public management modes of governance – which focus internally on performativity and the cost-effectiveness of academic departments, while ignoring important external considerations such as changing technologies, economic conditions and employment trends.

Writers from educational sociology argue that neoliberalism has gutted the social reproduction functions of the state in the realms of education, healthcare and social welfare. It has entailed the replacement of government service agencies with private market services that promote the values of isolated individualism. In exchange for the thick collective institutional arrangements which existed in the social democratic governance of these social policy spheres (including training systems and the archetypal collective arrangement of apprenticeships) in many countries including ‘white’ South Africa, new market forms of governance have been introduced. The citizen has become an individualised consumer of his/her choice of educational opportunities. Individual

ownership of career pathways became the hallmark of neoliberal policies worldwide, with far less emphasis on the role of the state in regulating these linkages between young adults graduating at post-school organisations and transitioning into the labour market (Giroux 2003: 180; McLaren 2005: 3; Williams 2014: 50).

All in all, rebuilding these post-school dynamic interactive capabilities will be difficult. Yet the need for such capabilities is urgent today as a means of rescuing South Africa from its downward spiral economically and politically.

CONCLUSION

The period South Africa is entering as a nation is perhaps more fragile than the situation faced in 1994. This is because of the multiple and interlinked crises facing the country – most seriously, the continuing high levels of corruption and the collapse of key economic infrastructure. Economic growth is stagnant, youth employment is very high, and the government has lost its ability to keep debt levels low. South Africa recorded a government debt to GDP ratio of 67.4% in 2022. A record low of 27.8% of GDP was achieved in 2008. Servicing debt levels close to 70% of GDP in the current period is very expensive. Such payments drain the fiscus of funds that could otherwise have been used for developmental purposes (Statistics SA 2019).

State fragility also relates to the collapse of stable political processes – unlike during 1990–1994 transition period, when the ANC government-in-waiting held the moral high ground and had the support of most citizens. Critically, the ANC also had support from many of the country's top professionals and technocrats, some of whom joined the government in 1994 to contribute to social change. The picture is very different today, with the ruling party losing significant electoral support and splintering into various smaller parties. The opposition parties such as the Democratic Alliance and the Inkatha Freedom Front are nowhere near possessing the required 51% of support needed to form a new national government. A period of highly insecure governance is therefore likely through the formation of unstable coalition governments at national, provincial and local levels. Gramsci's 1930s quote about the difficulties experienced in the dying days of old regimes is apt at this moment in South Africa:

The crisis consists precisely in the fact that the old is dying and the new cannot be born; in this interregnum, a great variety of morbid symptoms appear. (Gramsci, cited in Hoare & Smith 1971)

This book's core contribution to the emergence of a new political and economic dispensation – when it comes – is that intermediation and ecosystem strategies should be adopted in a more explicit and purposeful manner than in the 1994–2024 period. Intermediation strategies have many advantages as compared with state governance delivered by quangos. The latter are bureaucratically cumbersome, costly, and usually equipped with personnel who do not have the expertise to drive complex policy implementation processes. In the absence of dynamic public sector capabilities, the ANC government has sought to enforce

its policies through old-fashioned bureaucratic imposition. This has not worked as most quangos, SoEs and government departments have demonstrated over the past decade – they display an incapacity to govern and implement official state policy.

The powerful logic of intermediation is that policy success is not entirely reliant on the work of only one actor – that being the collective of civil servants. Intermediation requires the contributions of all social and economic actors in the ecosystem. It certainly requires a more explicit commitment from employers to assist in the leadership of the sectoral ecosystems and value chains they participate in. More importantly, intermediation enables the large NGO sector to make a major contribution in the governance and coordination of the national as well as local/regional economies. This of course would only succeed if the central government was prepared to devolve more governance functions to decentralised locales such as ecosystems and LIPs. The possibility of economic success built on the input and wisdom of multiple players is much stronger than the bureaucratic efforts of a weakly capacitated civil service.

Policy cynics may argue that the above reimagining is yet another exercise in utopian thinking. They might argue that many of the requirements for successful intermediation are simply not present. However, the remarkable feature of the case study of intermediation highlighted in this book is that many of the elements for effective intermediation were present. Failure arose because of the preference by the central state to centralise and bureaucratised, not because of the impossibility of achieving the necessary conditions for effective intermediation. Some of the elements that were present include: significant funds that were made available by the DTI to build the Furntech incubator, including major assistance from Sweden's SIDA; the presence of two experienced furniture boundary spanners in the LIPS; funding from the IDC to support boundary spanner Ernie Fritz's firm City Wood that sought to become the nucleus of a wider cluster producing at scale for export markets; the presence of an independent development NGO in the region (WCEDF) that could have been approached to serve as intermediary but wasn't; the possibilities for learning from large firms like Woolworths who are already using intermediation practices in their supply chains to develop small supplier capabilities; the export orientation training course funded by the Dutch Centre for the Promotion of Imports from Developing Countries; and the indications from furniture exporters that a focus on bespoke manufacturing utilising South Africa's unique African designs may prove advantageous in high-end furniture markets globally.

The reality of the existence of the above on-the-ground conditions suggests that the reimagination entertained in this chapter is not pie-in-the-sky, but a strategy that is possible if many of its elements that already exist are joined together with the energy, imagination and commitment of other economic actors in the LIPS in a systemic and purposive initiative as suggested by the above reimagining in the four core subcomponents of the Southern Cape LIPS. A renewal of the LIPS is feasible, it is not a utopian dream.

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