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The Future of the Irish Manufacturing Industry in Relation to Global Competitiveness

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The Future of the Irish Manufacturing Industry in Relation to Global Competitiveness

Joceley Martine Wilson
The Future of the Irish Manufacturing Industry in Relation to Global Competitiveness

Joceley Martins Wilson BBS

A thesis submitted in fulfillment of the requirements of the degree of:

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Department of Continuing Education
Cork Institute of Technology

Research Supervisor: Dr Angela Wright

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DEDICATION

This thesis is dedicated to my loving husband Jonathan, who has been a great source of motivation, inspiration. Thanks for your endless support throughout this venture.

It is also dedicated to my parents, Noemia and Silvio, who have supported me all the way since the beginning of my studies. They always encouraged me to strive to achieve my goals in life. Thank you both for always believing in me.
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• Thank you to my husband Jonathan that was always so supportive and encouraged me every time I needed.

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This study is an examination of the challenges faced by the manufacturing sector in Ireland. As the speed of globalization intensifies, new demands are constantly being levied on the manufacturing sector. In order to maintain this very important sector in Ireland, the manufacturing industry must promote constant innovation, automation and specialization, specifically in niche areas where there is a requirement for specific specialized skills, and where the labor cost is not a prohibitive or fundamental issue.

Innovation has been a key success factor for the manufactures to date, and will continue to be an area of focus as competitive forces intensify. The need for constant change and the rapid adoption of emerging technology will be pre requisite to survival in such a competitive landscape. In Ireland as in other developed countries, many organisations are moving their manufacturing activities to lower cost economies. For Ireland to compete in a global industry, it is necessary to have a social-political environment that encourages and promotes business investments, education, value added skills and a competent public infrastructure.

This research is therefore, concerned with the sustainability of the Irish manufacturing sector. This study investigates the impact of globalisation on this high profile sector. It analyses the emerging markets, the issues around escalating costs and the economic climate in which the Irish manufactures compete. This study explores the ability of the manufacturing industry to adapt to the new business environment, that has been created by increased globalisation, and if it is still possible to have a successful manufacturing base in Ireland.
CHAPTER 1
INTRODUCTION

1:1 Introduction

This research study is an assessment of the Irish manufacturing industry in relation to the challenges presented by the modern global market. In this study, the manufacturing industry is reviewed in the context of the level of competition between emerging markets and national issues, which can impact the competitive advantage of the Irish manufacturing industry. As the world economy progresses into an open global market with lower level barriers to entry, companies are competing on a world wide scale. In order to sustain competitive advantage, many organisations are now been forced to change and quickly adapt to this new environmental trend of a global economy. For the manufacturing industry, especially in developed markets such as Ireland, the continuous innovation is one of the primary defenses in maintaining an organisation's competitive position.

1:2 The Origin of Manufacturing

According to Ndahi (2006), handicraft production can be traced back to the beginning of civilization when goods were produced to satisfy basic needs. As currency was not in use, goods were exchanged for goods in what was called a 'barter' system (Nadahi, 2006). As each product is unique in many different ways, the introduction of currency changed how products were manufactured, distributed and marketed (Bacheldor, 2004). As the number
of manufacturers grew, so did the opportunities for buyers to make choice. Nadhi (2006) states that quality, durability, ergonomics and cost between others, became criteria for selection of a product by consumers. In the last 400 years, manufacturers have used different systems to perfect their production, satisfy their consumer and make a profit (Ndahi, 2006). The Industrial Revolution from 1760 to 1830, brought about a “modern” economy, in which technological progress did not just happen from time to time in isolated sectors but, became a sustained and continuous process, resulting eventually in unprecedented economic growth and increases in living standards in much of the world, from there on (Mokyr, 2000).

1:3 Manufacturing Going Global

*Standing still means moving backwards, this is particularly true for manufacturing and production*

(Flegel, 2008: 1).

Most of the changes in manufacturing operations are linked to the adopting of international standards, i.e., world class manufacturing, global sourcing of raw material, resources, the use of new technologies, and systems of information. According to Hill and Jones (2001), many manufactures are going global to access a range of opportunities and resources available in different international markets (2001: 107). The manufacturing industry sector is reviewed in this research study in context of how manufactures compete in a complex and uncertain environment with growing global competition, emerging and changing markets, and increasing levels of manufacturing technology.
Emerging markets are seen as an opportunity more than a threat by many manufacturers. Heynitz (2006), notes that in a survey undertaken by the Economist Intelligence Unit – EIU (2005), 65 percent of the respondents highlighted penetrating new markets as a strategic priority over the next three years (2006:8).

“What are your company’s strategic priorities over the next three years?”
(Percentage respondents)

Penetrating new markets
Lower costs and maximizing efficiencies
Accelerating time to market
Improving product quality
Improving customer service
Fostering innovation

Fig. 1.1 — Source: Economist Intelligence Unit, 2005 (Heynitz 2006: 8).

Ross and Lewis (2008) further note that, in a survey undertaken by the EIU (2008), many organisations in the past three years, have developed business operations in new emerging markets, with China being favored by 60 percent of the respondents (2008:7).

“Over the past three years, which of the emerging markets have been priorities in your company’s expansion?

(Fig. 1.2 — Source: Economist Intelligence Unit, April 2008: 7).
This research study analysis how the impact of organisations moving into emerging markets can affect the Irish manufacturing industries and how these companies are finding ways to compete.

1:4 Emerging Markets and the Manufacturing Industry

According to Heynitz (2006), it does matter if developed markets lose out to Asia as locations for manufacturing. The continued importance of manufacturing as source of wealth generation in developed markets should not be underestimated — productivity growth in developed economies, and hence for increases in living standards. Heynitz (2006) argues that manufactures accounts for large shares of export earning, even in economies with large service sectors such as the United States and UnitedK. The future of the manufacturing sector is therefore, of paramount importance to all major economies (2006: 5).

1:5 Research Focus of the Study

The ‘Future of the Manufacturing Industry in Ireland’ presents a research study of the issues affecting this important sector of the Irish economy. This study is concerned with the assessment of those issues from a national and global context. International issues such, as globalisation and the emerging new economies have a direct impact on the Irish manufacturers behavior and competitiveness. This study reviews how organisations handle the emerging markets to their advantage, and how corporate responsibilities and
ethics are important for business and societies world wide. This study examines the challenges faced by this Irish manufacturing industry imposed by high costs such as, the price of utility bills, electricity, wages, and indirect costs and taxes affecting the manufacturing industry. This research presents how organisations are overcoming the challenging issues by becoming more innovative, investing in automation and by up-skilling the work force. After exploring these arguments, the study examines what is required by the Irish government to support the remaining industries in the country and attract new business into Ireland.

This current chapter aims to present an overall view of this research study. The introduction is the part of the research study that provides readers with the background information for the research reported in this research study. Wilkinson (1991), states that the purpose of the introduction chapter, is to establish a framework for the research, so that readers can understand how it is related to other research (1991: 96).

Chapter Two, endeavours to assess and review the previous studies, and relevant literature related to the manufacturing industry and giving the Irish perspective. The topic chosen in this study is constantly evolving, for that reason the literature review presented in chapter two, compares the old with the most up to date literature. The literature review presents what has been seen in the past in relation to the manufacturing industry, and the gaps of the literature are assessed in the chapters Four and Five.

Chapter Three, provides an outline of the research methodology in the context of this study. The purpose of this chapter is to describe in detail the research methodology used in this study. For the purpose of this study, the qualitative research method was used and
in-dept interviews were carried out among ten professionals. This chapter also outlines the limitations of this study as the topic researched is very extensive.

Chapter Four, presents an analysis of the findings of this research study. It provides the main findings from the in-depth and face to face interviews. This study takes as its unique focus, the insight and observations of ten significant authorities, who directly relate to the manufacturing industry and have authority to speak on the subject matter. These include five senior executives, four business consultants and one politician.

Chapter Five, the concluding chapter, is a review of the main findings of the research from chapter Four, compares and contrasts those finding against previous studies in the area. This chapter also presents recommendations for the Irish government and for the Irish manufacturing industry. As previously mentioned there are gaps between researches, and in Chapter Five, this study also recommends further research to enhance subject matter knowledge. The conclusion is based on the past literature, present global circumstances and the future challenges for the manufacturing industry.
CHAPTER 2
LITERATURE REVIEW

2:1 Introduction

The literature review according to Creswell (2003), provides a framework for establishing the importance of the study with other finding (2003:30). This chapter presents the literature review of the challenges faced by the manufacturing industry as the pace of globalisation continues to intensify (Business Enterprise & Regulatory Reform (BERR), 2008).

Webster and Watson (2002) defined an effective literature review as one that "... creates a firm foundation for advancing knowledge. It facilitates theory development, closes areas where a plethora of research exists, and uncovers areas where researches needed" (2003:13). Hart (1999) supported the same view defining the literature review as "the use of ideas in the literature to justify the particular approach to the topic, the selection of methods, and demonstration that this research contributes something new". Hart also noted that for the literature review, "... quality means appropriate breadth and depth, rigor and consistency, clarity and brevity, and effective analysis and synthesis" (Hart, 1999: 1).

The literature review in a research study accomplishes several purposes. It shares with the reader the results of other research studies that are closely related to the study being reported. It relates a study to the larger ongoing discussion in the literature about a topic,
filling in gaps and extending prior studies (Cooper, 1984, Marshall & Rossman, 1999). Shaw (1995) affirmed that the process of the review should “explain how one piece of research builds on another” (1995: 326) and a methodological review of past literature is crucial endeavor for any academic research work (Webster & Watson, 2002: 13).

2:2 Globalisation and Implications

Globalisation is not something we can hold off or turn off . . . it is the economic equivalent of a force of nature . . . like wind or water


There are different ways and perspectives of understanding the phenomena of globalisation, according to Hill (2005), globalisation can be described as the trend toward greater economic, political, social, technological and cultural interdependence among national institutions and economies (2005: 6). On the other hand, globalisation is defined as “the markets and production in different countries becoming interdependent due to dynamic of trade in goods and services and flows of capital and technology”. (Rosamond, 2000: 7). This is supported by Rothenberg (2003), who defines globalisation as “the acceleration and intensification of the interaction and integration among people, companies, and governments of different nations” (2003: 2). Denis et al., (2006) also state that globalisation is an “increasingly integrated world economy which has the potential to generate the largest structural upheaval in economies since the industrial revolution”. In order to assess the globalisation implications, Rothenberg (2003), affirms
that not just wealth but values are also the key for assessing the impact of globalisation on the lives of people around the world (2003: 1).

2:2.1 One Global Market

According to Hill and Jones (2001) national markets are merging into one large global marketplace. These national markets are moving away from an economic system in which national markets are distinct entities isolated from each other by trade barriers and barriers of distance, time, and culture, and toward a unique system. Increasingly, consumers around the world demand and use the same basic product offerings. Consequently, in many industries it is not longer meaningful to talk about specific markets – there is only one global market (2001: 107). Supporting that view, Liveris (2006), describes that the implications of a single market — which is unique in human history – are large and in general, globalisation is good news. It means more trade, better utilization of capital and labour and, ultimately, a higher standard of living for many people whose economic systems have precluded them from the large scale wealth creation that free markets have long ago proven effective at generating, (2006: 6-7).

2:2.2 Globalisation Pace

In a recent research Denis et al., (2006) explain that while the globalisation process itself is not new, its present phase witnessed a significant acceleration over the last 1-2 decades, with the integration of China, India and former USSR countries into the world economy. This acceleration in integration has resulted in a 50 percent increase in the
world’s non agricultural labour force, with a large portion of these additional 700 million workers comparing well in human capital terms with the low skilled workers of the ‘developed’ world (2006: 3).

According to BERR (2008), what is new about the current phase of globalisation is the increasingly global location of production of intermediate goods such as components and parts for manufacturing. This separation has included not only the physical component parts of products, but the accompanying knowledge intensive services, such as research and development (R&D), inventory management, quality control, and other professional and technical services, (BERR, 2008). Ultimately, Hill (2005) affirms that the forces driving globalisation, (lower trade and investment barriers and increased technological innovation), are taking the manufacturing companies into previously isolated markets and increasing competitive pressures worldwide (2005: 33).

2:2.3 Emerging Economies and Manufacturing

According to Trieu et al., (2005), the combination of preferential government policies, foreign direct investment, great infrastructure, and human capital has contributed to the success of the manufacturing sector in emerging economies. The governments have led investment in the manufacturing sector by giving preferential loans to targeted industries. In recent years these governments have promoted growth in the value manufacturing industries such as electronics and automotive components (2005: 5-6).
Manufactures, including increasingly, those in emerging economies, are growing their investment in intangible or knowledge assets, such as software, design and other aspects of product-development, brand-building, training and improvements to business processes, in order to improve their competitiveness and enable their product to meet the changing needs of consumers (BERR, 2008). Supporting the same view, a survey shows that China and other countries in the Asia-Pacific region grow wealthier and more attractive to manufacturing, their relative importance as markets and production centers is likely to increase, sometimes spectacularly so, given low starting points (Heynitz, 2006).

According to recent research, companies are looking at the emerging markets (see fig. 1.2) as their priorities for their company’s expansion, and the key drivers are low labour costs, a large young and hard working population, high economic growth rates, a stable political environment and commitment to the World Trade Organisation (WTO) (Economist Intelligence Unit, 2008).

According to Cowen (2008), a reliance on traditional manufacturing and low-skilled services will not be sufficient to allow developed countries like Ireland to remain at the forefront of economic and technological curves. The world is becoming flatter; basic tasks are now being outsourced as low-tech business services, and contract manufacturing are migrating to low cost areas such as China, India, South America and the newer EU member states of central and eastern Europe as developed countries become more expensive (2008: 34).

Hidman and Smith (1999) stated that emerging economies also come with a price and issues; in a few cases, business corporations originally from developed countries, try to take advantages of other foreign countries failure in protecting workers, and in some
cases their children. These companies have hundreds of factories around the world in areas where extreme poverty exists and it is important to acknowledge those issues (1999: 21-33).

2:2.4 Ethical Standards in the Manufacturing Industry

Globalisation and particularly foreign direct investment brings benefits to many countries through inflow of capital, knowledge, and work, the effects are not so clear-cut and depend on the individual country’s situation (Gregorio & Lee, 1995). While most of the research focuses on economic indicators benefit, there also have been ethical issues that seem to have never been far away from the evolution of multinational enterprises as players in the global economy; “Bribery and corrupt payments, employment and personnel issues, marketing practices, impact on the economy and development of host countries, and effects on natural environment” are some of these issues (Donaldson, 1989: 96).

Recognizing that even though states have the primary responsibility to promote, secure the fulfillment of, respect, ensure respect of, and protect human rights, transnational corporations and other business enterprises, as organs of society, are also responsible for promoting and securing the human rights set forth in the Universal Declaration of Human Rights . . .

According to Meyer (2004), Multinational Enterprises (MNEs) take part of a fundamental role in linking rich and poor economies and conveying capital, knowledge, ideas and value systems across borders. The interaction of MNEs, in specific manufactures, with institutions, organisations and individuals in generating positive and negative spillovers for various groups of stakeholders in both home and host countries (Meyer, 2004). According to Donaldson and Dunfee (1999), on issues such as child labour or slavery, a board international consensus supports certain standards, known as hyperons. Yet on other issues such as CO₂ pollution or employees’ right to annual leave, standards vary greatly between and within countries. Certain ethical principles are considered appropriate for some cultures but not all of them, which create a ‘moral free space’ (1999: 3).

Schere and Smid (2000) discuss how a consensus might be achieved to establish global standards that recognize diversity of cultures. Based on Hartman et al., (2003), international business research should analyse how manufactures manage the variation of moral standards in their countries of operation and provide guidelines for managers facing normative future decisions, (2003: 119-220).

2:2.5 Negative Publicity Linked to Low Cost Manufactures

Meyer (2004), when analysing the instrumental view and more common in Anglo-Saxon countries noted that, its proponents argue that firms should pursue high labour or environmental standards if it is good for profitability. If markets are efficient, and consumers are willing to pay high prices for goods produced with higher standards, then
meeting these standards will be good for profitability, (Meyer, 2004). On the other hand, Schwartz (2006), affirms that the only reason why many profit-driven firms are concerned about negative publicity, is if such publicity decreases their revenues (Schwartz, 2006).

According to Spar (1998), the advantage of lower cost labour or lower cost inputs from more abusive suppliers must be weighted against the crush of negative publicity, the costs of public relations, and the possibility of consumers protests (1998: 7-12). Meyer (2004) affirms that higher standards my shield manufactures against negative publicity. Traditionally, many manufactures took the legalistic view that they cannot be held responsible for the labour practices of their foreign suppliers. The activism however, of non-governmental organisations (NGO’s) and attention of the media put the spotlight on incidences of practices considered unethical by stakeholders (Meyer, 2004).

Van Tulder and Kolk (2001) mention that many MNE’s have over the past decade reacted to negative publicity by introducing corporate codes of conduct (2001: 267-283) and by joining new non-governmental systems of labour standards and monitoring (O'Rourke, 2003). Such systems are expected to combine ethical behavior to profitability: failure to comply with standards that a firm committed to may severely affect the firm’s reputation and thus their sales and their bottom line (Spar, 1998).

Finally, manufactures are concerned how their handling of ethical matters affect financial performance (Meyers, 2004). While individual studies provide opposing results, Orlitzky et al., (2003) affirms that corporate virtues in the form of social responsibilities are likely to pay off (2003: 403-441).
2.2.6 Focus on Labour

Cerney (1994), describes that the labour standards in manufactures affiliates and subcontractors in emerging economies are a major concern in globalisation debates (1994: 595-625). Palley (2002), affirms that some observers fear that the strong bargaining power of multinational firms vis-à-vis their employees, and vis-à-vis potential host countries leads to a lowering of standards and wages (2002: 601-615).

According to Caves (1996), the theoretical arguments concerning impact on social variables resemble those on environmental impact (1996: 228). On the one hand Moran (2002), argues that concern with global standardization and firm’s reputation induces many manufactures affiliates to pay higher wages and to employ high labour standards with respect to working hours, sick leave, child labour, unionization etc (2002: 10-19). MNEs generally wish to retain their qualified staff. They have incentives to keep them satisfied, unless they are employing unskilled labour with few outside job opportunities (Meyer 2004).

According to Orlitzky et al., (2003), labour ethical aspects of business have become major issue in popular debates on manufactures. Higher standards are expected to increase the positive effects of manufactures on their host economies (2003: 403-441). Multinational enterprises (MNEs) doing business abroad are considered powerful entities, which have substantial influence on their host environments, the impact their business has on these ethical issues, and environmental responsibilities in the host countries, merits further investigation (Longworth, 1998).
2:2.7 Environmental Responsibilities

According to Slack et al. (2007), pollution causing disasters which make the headlines, seem to be the result of various causes such as oil tankers running aground, nuclear waste misclassified, chemical leaks into rivers or, gas clouds drifting over industrial towns. They all have something in common. They were all the result of an operational failure (2007: 684). On the other hand Scherer and Smid (2000), argue that it is the lack of labour market regulations and policies that attracts foreign direct investment (FDI) because it makes countries competitive in the international labour market and keeps labour costs low while curbing union activities and environmental protection (2000: 350-351). Many countries try to lure and hold foreign investment by maintaining low standards (Longworth, 1998). “The low standards in many countries are marketed as competitive capability and competitive advantages, and supported indirectly by foreign investment” (Scherer and Smid, 2000: 351).

2:3 Competitive Capabilities in Manufacturing

According to Doll and Vonderembse (2002), dynamic market changes, intense global competition and the worldwide spread of advanced manufacturing technology are creating a complex and uncertain environment. Manufactures need to increase their capabilities to meet customer’s expectancy of rapid introductions of new, high-value, high-quality products (2002: 256).
Schoeder and Lahr (1990), affirm that manufacturing capabilities are not coincidental; they are results from strategic actions which consider customer demands, competitor action, and supplier capabilities as well as the organisation’s internal strengths and weaknesses (1990: 13-14). Doll and Vonderembse (2002), affirmed that those strengths and weaknesses in the manufacturing strategy have determining impact on the development of those competitive capabilities (2002: 257). Teece and Pisano (1994) mentioned that when properly organised, managed and focused on customers, competencies enable an organisation to build a set of dynamic competitive capabilities which are external dimensions of competition (1994: 509-533). Doll and Vonderembse (1991), suggest that external competition for manufacturing dimensions may include rapid and flexible product innovation, value-to-customer quality, fast and reliable delivery (1991: 401-411). In order to generate profit, Teece and Pisano (1994), affirm that manufactures should possess competitive capabilities that have an external-customer orientation and manifest the relative strength of the firm against its competitors (1994: 537-556).

Manufactures are now, according to Hill (2005), taking advantage of the globalisation of products by accessing low-cost labour to make their goods more price-competitive. They also are benefiting by gaining access to technical ‘know-how’ or natural resources that are either nonexistent or too expensive at home (2005: 34). Capabilities emphasize the role of strategic manufactures management in properly adapting, integrating, and configuring skills and resources to match customer expectations, where innovation plays an important role. Superior competitive capabilities should lead to increased manufacturing innovation and performance (Teece et al., 1997).
2:4 Manufacturing Innovation

*Innovation is the successful exploitation of ideas*

(Department of Trade and Industry, 2004: 5)

According to Ramesh (2005), businesses need to continuously focus on change and innovation in order to survive in dynamic environments (2005: 223). Rogers (1995), defines innovation as an idea, practice or object that is perceived as new by an individual or other unit of adoption (1995: 11). On the other hand, Betje (1998), describes innovations as new things applied in the business of producing, distributing and consuming products or services (1998: 1).

Dooley et al., (2000), affirm that in the modern business environment of global markets and intense competition, organisations constantly face the need to re-invent themselves in repose to external forces. Dooley et al., also noted that it has become a necessary part of the organisation's life and activities that management must strive to create a periodic 'sense of urgency' to re-invigorate the organisation's operational methods (2000: 278). To achieve this, many organisations aspire towards one or more management paradigms, such as Business Process Re-engineering (BPR), Lean Manufacturing (LM), and other processes improvements (Kotter, 1990). Dooley et al., (2000) state that each year, organisations expend significant resources developing new products and processes, to avoid manufacturing failures (2000: 270). Despite all those developments, the unsuitability of the current change approaches for managing systems innovation is...
reflected by the fact that anywhere between 50 to 70 percent of change projects fail to achieve their targets (Hammer, 1990; Burnes, 1996).

Based on Ramesh et al., (2005), the ability of an organisation to deploy appropriate business processes and systems that support the management of these processes is continuously maintained and evolved through innovation (2005: 223). Innovation including non-technological innovation, across all elements of the business functions is essential in order to gain a competitive edge through differentiation. Even more mature manufacturing areas can benefit from the application of new knowledge to continuous improvement and the use of technologies (Towards 2016, 2008).

2:5 The Importance of Process Improvement

According to Hill and Jones (2001), quality and efficiency increase as new and improved work rules and procedures are developed to raise the level of standardization (2001: 452). Keegan (1997), describes that processes improvements allow manufactures to standardize and improve their processes (1997:1-2). Thoburn et al., (1999), supports the previous statement and explain that processes improvements give manufactures the ability to respond swiftly and effectively in to environmental changes by producing and delivering new product and services is necessary not only to gain competitive advantage, but merely to survive (1999: 116-126).

Hill and Jones (2001), affirm that the objective is to reach the right match between structure, control and continuous processes improvements, so that manufacturing
develops a distinctive competency, leading to superior efficiency and quality (2001:452). This movement according to Keegan (1997), started the process Heynitz of examinations across a company’s value chain. This process addresses the company-wide quality aspect of a ‘World Class Business’ where the efforts of employees are focused on ‘doing things right the first time’ (1997:5). Business processes are often altered to be in alignment with customer demands, business environment, and organizational objectives (Ramesh et al., 2005: 235). According to Dooley et al., (2000), organisations are being developed by utilizing processes improvements (2000: 284). On the other hand, Ramesh et al., (2005), affirms that such processes improvements are also trigged by the globalisation and internationalisation of markets (2005: 233).

Hammer (1990) affirms that “change effort should strive to break away from old rules... the notion of discontinuous thinking” (1990: 104-107), while Keegan (1997), states that through continuous improvement, organisations will achieve significant improvements in overall performance (1997: 4-5). Hall (1997) supports this view and states that changes are necessary means of avoiding the organisation ‘cooling down’ and loss of momentum with respect to innovation (1997: 11-24). Finally, Ramesh et al., (2005), state that the redesign of manufacturing business process seeking improvements is especially important in dynamic, complex business environment. For manufacturing, the ability to quickly and continuously adapt business process to accommodate the evolving requirements and assumptions is critical for success in such competitive environments particularly in relation to technology (2005: 235).
According to BERR (2008), technological change is shaping manufacturing by creating the capacity to adopt more efficient processes and develop new or better products. In a dynamic global market, the ability of firms of sizes to exploit new technology is key to maintaining a competitive advantage (BERR, 2008). The importance of building technological innovation has been, in part, realized through an enhanced range of supports to encourage businesses to invest more in research and development (R&D), and through increased public investment in research to provide the skilled graduates needed for enterprise research and innovation (Towards 2016, 2008).

It has been argued by many researchers that the adoption of advanced technologies is closely related to productivity gains and other measures of organizations' performance (Baldwin et al., 1995; Papaconstantinou et al., 1996 and Beaumont and Schroder, 1997). According to Baldwin et al., (1996), advanced technology users identified a broad range of benefits such as, improvements in productivity, product quality and working conditions; reductions in production costs associated with factors such as, lower labour requirements and inventory; reduced material and energy consumption; increased equipment utilization and reduced product rejection. Baldwin et al., also noted that at the same time, organizations also reported a host of costs associated with technology acquisition, e.g., education and training, time and cost to develop required software, and increased maintenance expenses (Baldwin et al., 1996). Arundel (1997), stated that in addition to these costs, all firms reported a series of other impediments to their technology adoption. These include institution-related problems associated with tax.
regimes, and government regulations and standards; labour-related problems such as shortage of skills, training difficulties, and labour contracts; organizational or strategic problems associated with difficulties in introducing important changes to the organization, management attitude, and worker resistance; information related problems such as lack of scientific and technical information, technological services, and technical support from vendors. Similar lists of impediments have been used to investigate barriers to innovation (1997: 101-108).

2:7 Manufacturing: An Irish Perspective

The manufacturing sector has played a key role in Ireland's economic success and it currently accounts for 11 percent of total employment and 23 percent of economic output of Gross Value Added (GVA), (Towards 2016, 2008). According to O'Leary (2008), manufacturing has played a strong role in Ireland's economic development over the past decade. Not only does manufacturing contribute to employment, economic output and exports, but it is also a key driver of innovation and technological advances, creating jobs directly and indirectly (2008: 7).

2:8 Process improvements in Irish Manufactures

The domination of Irish manufacturing by foreign-owned high technology sectors has brought increases in productivity through the introduction of world class technologies and work practices (Economist Intelligence Unit, 2003: 29-30). According to Total Quality Management (1999), studies have shown that organisations that have achieved
ISO 9000 standards, and put in place proven process improvement techniques have enhanced considerably their competitive advantage. The organisations with ISO 9000 and proven process improvement techniques, (i.e., lean manufacturing, six sigma, kaizen, balanced score cards, etc.), outperform companies without them, as much as 52 percent (1999: 860-861).

2:9 Foreign Direct Investment in Irish Manufacturing

According to Blomstrom and Kokko (1998), the most important reason behind many countries' efforts to attract more foreign direct investment today, is a desire to acquire modern technology. Foreign direct investment generates important positive externalities that enhance the productivity of indigenous firms in the economy (1998: 247-277).

According to Ruane and Ugur (2004), foreign firms may enhance the productivity of indigenous firms in an economy, through forward or backward linkages. Such externality effects are typically called 'productivity spillovers'. In terms of foreign direct investments, Ireland is one of the most globalised economies in the world, having pursued a strategy of promoting investment by foreign companies and manufacturing industries for over 40 years (2004:53). Furthermore, O'Leary (2008), affirmed that Ireland's management capabilities, high quality outputs, productivity growth, and project management skills have evolved as a result of its success in attracting high quality foreign direct investment in manufacturing, and in stimulating the growth of indigenous firms with focus on exports. As a result, Ireland has increased its competitive performance in the manufacturing sector in the past decade (O'Leary, 2008).
2:10 Competitive Performance of Irish Manufacturing

Ireland's international competitiveness has played a critical role in the Irish economic performance. As economic growth and social process are intrinsically linked, this economic success has brought many benefits to Irish society (Ahern, 2007: 1).

Irish competitiveness is the ability of Irish-based firms to achieve success in international markets, so as to provide Ireland's people with the opportunity to improve their living standards and quality of life, (National Competitiveness Council, 2007a). Unfortunately, the biggest immediate challenge facing the manufacturing sector is the loss of cost competitiveness, (Towards 2016, 2006). Between 2000 and 2006, Ireland experienced a loss of 15 percent in international price competitiveness (Eurostat, 2006). According to Finfacts (2008), the output figures of Irish manufacturing industry in November 2008, hit its lowest figures since 2003. The global economic downturn, has highlighted the importance of cost competitiveness and its criticality for Irish manufacturing industry sustainability. Irish manufacturing Purchasing Managers' Index (PMI) data in November, signaled a further substantial deterioration in operating conditions in the sector, see fig. 1.1. There has been a series of record contractions in output and new orders, while input prices fell markedly. The boost to Irish Gross Domestic Product (GDP) in 2009 will come from falling imports not rising exports (Finfacts, 2008).
2:11 Supporting Cost Competitiveness

According to the National Competitiveness Council (2007a), cost competitiveness is vital to the success of Irish economy. The continuing appreciation of the Euro and relatively high inflation in pay and non-pay costs in Ireland are affecting Irish cost competitiveness (National Competitiveness Council, 2007a). In a recent survey Cohen et al., (2008) analyses 300 international organisations and conclude that managing and reducing costs are the top priority of 28 percent of the organisations interviewed in this survey (2008: 3-28).

(Fig. 2.3 — Drivers of Globalization. Source: PRTM, cited in Cohen et al., 2008: 5)
According to Burgess (2004), evidences on Irish prices and costs, suggest that both, business costs and consumer prices in Ireland, are now out of line with other advanced economies. Irish relative cost position is not justified by economic fundamentals and poses a threat to our continued economic success. Improving Ireland's international costs competitiveness must remain a high priority for government (Burgess, 2004). The National Competitiveness Council (2007 b) affirms that Irish consumer price levels are almost 20 percent higher than in the EU-15 average, and inflation has been growing at a faster rate than the EU-15 average. For enterprise, high property, utility (e.g. energy, waste and water) and domestic services costs are of particular concern (National Competitiveness Council, 2007 b).

The combination of the recent acceleration in Irish consumer price inflation, alongside the growing risk of a sharp decline in the value of the dollar against the Euro, makes the possibility of a further significant deterioration in Ireland’s cost competitiveness, putting at risk living standards and employment performance (Burgess, 2004).

2:12 Irish Industrial Electricity Costs

According to Sustainable Energy Ireland (SEI) (2008) Ireland has the highest electricity prices in Europe for businesses and domestic consumers, due to a dependence on electricity generated from fossil fuels and high taxes. Some industrial customers are paying up to 52% above the EU average, see fig. 2.4 (SEI, 2008). Forfas (2009) agrees and further states that, sustained escalation in electricity costs has acute implications for small and medium sized business under public electricity supply, and for large energy users under the Single Electricity Market. Inefficiencies in distribution and limited
competition in generation and supply directly contribute to our uncompetitive electricity costs (2009: 28).

**Industrial/Commercial Electricity Prices (€) in Eurozone (2nd Semester 2007)**

(Fig. 2.3 — Industrial Commercial Electricity Prices, Source: SEI, 2008: 21).

### 2:13 Employment Performance of Irish Manufacturing

The Irish manufacturing sector accounts for 221,000 direct jobs and an additional 165,000 through secondary employment. Manufacturing firms spent € 25 billion in the Irish economy and contributed € 35 billion to Irish gross value added during 2006 (Towards 2016, 2008).

Employment is one of the indicators that can be used to monitor the performance of organisations in Ireland (Forfas, 2006). According to the Irish National Bank (2008),
Irish manufacturing employment declined for much of the two decades following the entry of Ireland into the Anglo-Irish Free Trade Agreement in 1966, and into the European Economic Community (EEC) in 1973. This occurred as many of the indigenous import substituting firms collapsed in the face of rising import penetration; a collapse that was more severe than had been anticipated (Irish National Bank, 2008).

Labanyi (2008), stated that the PMI, which measures manufacturing activity, dropped to 37.1 in November, lower than previous record low of 39.1 in October. Any reading below 50 marks contraction. November’s performance was the worst since the survey began in May 1998, and November was the 12th consecutive month that manufacturing employment has declined. Most 30 percent of firms surveyed reported a reduction in staff numbers in November 2008 (Labanyi, 2008).

Finally, according to Forfas (2009) internationally traded services have dominated new job creation, while net job losses have been concentrated in more traditional manufacturing sectors, see fig. 2.2, — reflecting on-going restructuring in the economy and competition from lower-cost locations. Forfas further discuss that, although Irish unemployment is still below the European average, it is now rising rapidly. Despite the significant challenges ahead, employment levels in internationally trading firms remain stable (2009: 9-16).
2:14 Wages in Irish Manufacturing

According to Kelly (2008), government ministers point out that Ireland is one of the wealthiest countries in the EU and, indeed, the world. In terms of wealth per capita Ireland ranks 2nd in the EU-15. Even when using the Gross National Product (GNP) figures, Ireland is in the top half of the table. If Ireland is compared with countries with similar levels of wealth, Irish wages rank at the bottom, behind the average of the top ten wealthiest countries in the EU (2008: 6).
OECD Average Wage for Private Sector: Ten Wealthiest EU Countries 2005 (€ 000s)

Danmark: £43
UK: £42.9
Luxembourg: £42.1
Germany: £41.7
Netherlands: £38.7
Top Ten Average: £38.7
Belgium: £38.5
Austria: £35.1
Sweden: £34.1
Finland: £32.7
Ireland: £29

(Fig. 2.5 — Organisation for Economic Cooperation Development (OECD). Average Wages for private Sector, Kelly, 2008: 6).

Kelly (2008), also pointed that the measurement below, (see fig. 1.2), is a pertinent measurement for Ireland since it breaks down labour costs in the manufacturing sector in US dollars. Irish wages in the manufacturing sector are over 17 per cent below the EU-15 average (2008:5-7).

Hourly Compensation Costs for Manufacturing Workers 2005 ($) (Fig. 2.6 — Hourly Compensation Costs for Manufacturing Workers 2005 ($). Government Bureau of Labour Statistics, Kelly, 2008: 7).
2:15 The Future for Irish Manufacturing Industry

*It is clear that we are entering a period of more challenging economic conditions. The challenge is to restore Ireland’s internationally trading firms in manufacturing and services as key drivers of growth* (National Competitiveness Council, 2007: 1).

For various reasons, it is important that manufacturing continues to play a fundamental part of Ireland’s future economic development (McCall, 2008: 7). According to Towards 2016 (2008), the future of manufacturing operations in Ireland is still bright. The year of 2007 was the best year for manufacturing since 2002, with an 8 percent growth in output. Continuous learning, innovation, increased productivity, flexibility and adaptability will become the norm, as firms anticipate change and respond in a way that enables them to take advantage of opportunities and to turn challenges into new market opportunities (Towards 2016, 2008).

Finally, O’Leary (2008), affirms that the success of manufacturing in Ireland will depend on the country’s ability to integrate new technologies rapidly into both products and operations. Advances in technological and process innovation will allow for increased output at lower costs and allow the Irish economy to remain competitive (O’Leary, 2008).
2:16 Summary

This chapter presented a review of the literature findings on the manufacturing industry and current global challenges. Globalisation is impacting Irish manufactures and it has shown that it is about market access and low cost manufacturing (Heynitz, 2006). Irish manufactures need to be aware of how the 'Factory of the Future' is likely to look and how it may impact their operations. Organisations need to keep abreast of how emerging technologies, new materials, processes, and convergence across technologies, sectors and products will impact future operations (Towards 2016, 2008).

Kuivanen (2007), states that an increasing number of competitors in the global manufacturing market is driving down prices. If the price of manufacturing is a key competitive edge, the products will be made in factories which utilise middling manufacturing technologies. Successful companies should be able to distinguish themselves from the competition. This means learning how to differentiate the company with products that stand out (2007: 121).

The Irish manufacturing sector faces a number of serious challenges. Effective and innovative policies and supports are therefore required to ensure that manufacturing continues to play a central role in the Irish economy in the 21st century (National Centre for Partnership Performance, 2007). It is essential that Ireland quickly finalises and implements a widely supported programme to restore competitiveness (Thornhill, 2009).
CHAPTER 3
RESEARCH METHODOLOGY

3:1 Introduction

Critical Researchers begin from the premise that all cultural life is in constant tension between control and resistance (Thomas, 1993).

This chapter presents a systematic assessment of the research methodology used to achieve the objectives of this study. According to Creswell (2003), 'research design' is fundamentally important to provide guidance about all facts of the study, from assessing the general philosophical ideas behind the inquiry, to the detailed data collection and analysis procedure (2003: 3). In the current study, the answers provided to the selected proposed questions are those of ten interviewees with experience in multinational manufacturing industries based in Ireland. The research design selected was qualitative in nature. According to Creswell, (1998), the strategy of enquiry chosen on data collection, analysis, and writing, flow throughout the process of research (e.g., types of problems, ethical issues of importance) (1998: 370-373).

3:2 Research Problem

The purpose of this study is to understand the issues faced by the manufacturing industry and how this sector is constantly evolving to maintain competitiveness in the global environment. This is demonstrated through the changes highlighted during the study,
challenges such as emerging markets, increase pressure to innovate, ethical issues, markets trends and economical issues. The author seeks in this research to understand the future of manufacturing in relation to the business challenges faced by manufacturing, and the erosion of Irish competitiveness.

3:3 The Research Question

*Investigators place signposts in their research to carry the reader through a plan for a study* (Creswell 2003: 105).

Malhotra (1999) states that the research question “is a refined statement of the specific components of the problem that ask what specific information is required with respect to the problem components” (1999: 62). Defining the research question is one of the most important steps to be taken in a research study (Yin, 2003). According to Frankel and Denvers (2000), there is agreement that good qualitative studies answer clearly stated, important research questions. In some cases, developing a good research question at a study's outset may be relatively straightforward. This occurs when there are well-developed theoretical and conceptual frameworks, and much is already known about the topic. The existing research literature itself may point to areas where further research is needed (2000: 113-123).

The purpose of this current study is to investigate:

“The Future of the Irish Manufacturing Industry in Relation to Global Competitiveness”
3:4 The Research Objective

A good qualitative objective contains important elements of qualitative research, uses words drawn from the language of that inquiry (Schwandt, 2001), and employs the procedures of an emerging design based on experiences of individuals in a natural setting (Creswell, 2003: 88). According to Lock et al., (2000), the objective of the study indicates why the researcher wants to do the study, and what the researcher intends to accomplish (2000: 9). The objectives of this research can be outlined as follows:

- Explore the attitude of manufactures towards the global market changes
- Examine how such attitudes and experiences of individuals can indicate a change in organisational behaviors
- Obtain information directly from executives making decisions on a daily basis within manufacturing organisations
- Investigate how organisations are re-inventing themselves in order to reduce costs and to maintain competitiveness
- Analyse how organisations weigh up ethics in the business environment.

3:5 The Research Design and Strategy

The design of this study used qualitative research techniques, creating and providing the best possible learning experience for the author and for participants. This qualitative focus looks for indicators of success or improvement through the experiences and stories of the participants (Merriam, 1998; Glesne, 1999). On the qualitative approach, the
research process is flexible and typically evolves in response to the lives realities encountered in the field setting (LeCompte & Schensul, 1999). Much is sometimes made of the distinction between qualitative and quantitative research design and the development of the enquiry process.

The author has chosen the qualitative method rather than quantitative method as this study has no intention to quantify the findings, which are instead described in the language employed during the research process (Leach 1990). The qualitative approach was more suitable for this research study as this approach is a vehicle for studying the empirical world from the perspective of the subject (Duffy, 1987).

According to Creswell (2003), qualitative procedures stand in total contrast to the methods of quantitative research. Qualitative inquiry employs different knowledge claims, strategies of inquiry, and methods of data collection and analysis. Although the developments are similar, qualitative processes rely on text and image data, have unique steps in data analysis, and draw on diverse strategies of inquiry, (2003: 179).

The quantitative research is also described by terms ‘empiricism (Leah 1990), and ‘positivism’ (Duffy, 1985). It derives from the scientific method used in the physical sciences (Cormack, 1991). Whereas quantitative methodologies test theory deductively from existing knowledge, through developing hypothesized relationships and proposed outcomes for study, qualitative researches are guided by certain ideas, perspectives or hunches regarding the subject to be investigated (Cormack, 1991). Quantitative research respects the logic of experimental or co-relational method in adhering to agreed rules and predetermined sequences, irrespective of emerging data and analysis. The role of
The qualitative methodology was more suitable for this research study than the quantitative methodology as the researcher was able to make an interpretation of the data. This includes developing a description of an individual or setting, analyzing data from themes or categories, and finally making an interpretation or drawing conclusions about its meaning personally and theoretically, stating the lessons learned, and offering further questions to be asked (Wolcott, 1994).
3:6 Data Collection

In quantitative research, the emphasis is on collecting data that lead to dependable answers to important questions, reported in sufficient detail that it has meaning to the reader (Firestone 1987: 17).

Merriam (1998) and Marshall and Rossman (1999) argue that data collection and consequently analysis must be a simultaneous process in qualitative research. Strauss and Corbin (1998) claim that qualitative data analysis primarily entails classifying things, persons and events and the properties which characterize them. During the data analysis, the data will be organised categorically and chronologically, reviewed repeatedly, and continually coded. A list of major ideas that surface will be chronicled, as suggested by Merriam (1998). For the purpose of this study, the author gathered journals, conducted open-ended interviews, audio-taped the interviews and transcribed the interviews, analysed public documents (e.g., official memos, records, archival material).

3:7 Interviews

In the 1980's, qualitative researchers demonstrated sensitivity to the impact of research interviews on participants (Cowles, 1988, Munhall, 1988). In recognizing the potential vulnerability of people participating in such studies, early approaches included the development of an ethics of care (Noddings, 1984). Interviews developed into forums for people sharing their experiences to researchers whose projects were framed as having both personal and political emancipatory potential (Gergen, 2001). Brinkman and Kvale
(2005) noted that intimate and caring exchanges became widely accepted as the appropriate ideal style of interviewing for research. In addition, researchers were framed as the instruments through with this could be realized (Duncombe & Jessop, 2002).

For the purpose of this study, the author approached the interviewees firstly by emails, then followed up with telephone calls confirming the dates and times of the interviews. The interviews conducted varied from 25 to 45 minutes. Qualitative research extracts verbal, visual, tactile, olfactory, and gustatory data in the form of descriptive narratives like field notes, recordings, or other transcriptions from audio and videotapes and other written records and pictures or films (Creswell 2003:186-188). In this current study, all interviews were tape-recorded, ensuring that all transcripts are available for analysis. The questions chosen for this study can be found on Appendix A.

3:7.1 The Interview Pool

The interviewees chosen in this study, are people who have first hand experience of the evolution that has taken place in the Irish manufacturing industry. They have all been part of the Industry during Ireland’s shift from a low to high cost economy. The senior executives interviewed in this study, all have an insight into globalisation and its direct influence on the changes in manufacturing. All of the consultants are at the cutting edge of their respective industries, and are dealing with the changes posed by a more globalised economy on the current market. A local Fianna Fail politician was also interviewed to gain an insight into the governments view. The list of interviewees can be found on Appendix B. All discussions will be presented and analysed in chapter 4.
3:8 Data Analysis

For this study a model of data analysis and interpretation developed by Strauss & Corbin *Grounded Theory* was chosen. These involve generating categories of information (open coding), selecting one of the categories and positioning it within a theoretical model, and then explicating a story from the interconnection of these categories (selective coding). The interviews were transcribed and the data was sorted into different types and codes, depending on the sources of information. A general sense of the information was obtained by reflecting on the overall meaning of the collected data. Coding was also used on the analysis of the data. According to Rossman and Rallis (1998), coding is the process of organizing the material into "chunks" before bringing meaning to those "chunks" (1998: 171). Creswell (2003) affirms that analyzing the data involves taking text data or pictures, segmentation sentences (or paragraphs) or images into categories, and labeling those categories with a term, often a term based in the actual language of the participant (called an *in vivo* term) (2003:192). The codes used to analyse the data were, strategy codes, activity codes, relationship and social structure codes and perspectives held by subjects (Bogdam & Biklen, 1992: 166-172). The final step in the data analysis involved making the interpretation or meaning of the data. “What were the lessons learned” captures the essence of this idea (Lincoln & Guba, 1985).

Merrian (1988), Marshal and Rossman (1989), contend that data collection and analysis must be a simultaneous process in qualitative research. Schatzman and Strauss (1973), argue that qualitative data analysis primarily entails classifying things, persons, events
and the properties which characterize them. The above details, show how the analysis of
data for this particular research study was performed.

3:9 Limitations

In this qualitative study, the findings could be “subject to other interpretations” (Kunes,
1991: 21-22). As described by Creswell (2003), some of the limitations found in this
qualitative research are the it provides indirect information filtered through the views of
interviewees; provides information in a designated place rather than the natural field
setting; people have different views and are not equally articulate and perceptive (2003
186). During this research study, the author found that there are a number of different
topics surrounding the issues in Irish manufacturing industry. The manufacturing industry
is alive, and constantly evolving, hence, during the course of this research study, changes
in the political, international, social, technological and economical (PISTE) factors have
unearthed other areas to be investigated and developed in further studies, which are
outside the scope of this study.
3:10 Conclusion

The strength of the qualitative research lies in validity (closeness to the truth) – that is, good qualitative research, using a selection of data collection methods, really should touch the core of what is going on, rather than just skimming the surface (Mays 1996). But in spite of the apparent flexibility in qualitative research, the researchers must be aware that three types of sampling error can arise in qualitative research. The first relates to distortions caused by insufficient breadth in sampling; the second from distortions introduced by changes over time; and the third from distortions caused by lack of depth in data collection at each site (Patton, 1990). As stated by Miles, the analysis of qualitative data can be a constraint on the study and time consuming (1979:595). The author agrees with Wolcott (1994), that making interpretation or drawing conclusions about its meaning personally and theoretically, states the lessons learned and offer further questions to be asked.
CHAPTER 4

RESEARCH FINDINGS AND ANALYSIS

4:1 Introduction

This chapter presents the main findings from the face-to-face and in-dept interviews developed from this research. The interviews were conducted with five senior executives, four business consultants and one politician, a total of ten people. The senior executives and the consultants interviewed in this study are highly involved with the changes presented by manufacturing in Ireland in recent years, and the politician, Cllr. Sean Martin, was able to give the Irish government's view on the topics discussed. Full transcripts of the interviews are available from the author upon request.

The interview process is a social process constructed by the contribution of the participants (Silverman, 1993). In order to gain deeper understanding and clarity on the studied subject, the interviews were carried out in a flexible and semi-structured way. Questions asked were open-ended and the interviews were conducted as conversations where the author was primarily an open minded listener.
4:2 Global Challenges Affecting Irish Manufacturing

As previously indicated in chapter two, in the past number of years, globalisation has intensified and as a result, Irish manufacturing as well as the global manufacturing industry has changed in order to adapt, survive and compete on the globalised world market. This study has found that changes in the political, international, social, technological and economical (PISTE) factors have affected the way manufactures are structured and how they conduct their businesses today. All interviewees experienced some sort of change in manufacturing as result of the world market globalisation:

Certainly from a manufacturing point of view there have been huge changes as a result of globalisation. Now they call themselves a supply chain organisation which wasn’t there before. In the past, they would have just looked internally and felt that the operations were inside four walls and just get the product out of the door. Now, they are trying to understand, from their perspective what is required from the customer. This is completely different than before

Brian O’Connor,
Director of Global Services Logistics International, EMC, Cork.

This research has found that manufactures have changed their approach in relation to labour and production. With the purpose to become more competitive manufactures are inclined to have less labour content than before. They are shifting from high volume to
low volume manufactures, and having a wider range of products to serve different markets:

Selective companies are having different approaches some companies are moving to a scenario where in the past they would have had high volume manufacturing and they are now moving to low volume manufacturing. They are now moving towards low volume with diverse products and services, rather than high volume with one or two products, low volume with a number of diverse products serving a wider market

Susan Clancy,
Managing Director, Lean Sigma Systems, Cork.

Supporting the same view, another interviewee mentioned that manufactures are changing their strategies to fit different environments. Today, companies decide where to locate their production activities, depending on their perspective markets:

Not everything can be manufactured the same around the world. Organisations will try to find strategies that fit their manufactures and may need to apply those strategies differently

Brian O'Connor,
Director of Global Services Logistics International, EMC, Cork.
4:2.1 Emerging Economies

This research study acknowledges that multinational enterprises (MNEs) play a fundamental role in the development of many emerging economies. As a consequence, more developed nations such as Ireland, experience the impact and the shift of manufactures from their home countries into new emerging markets.

*The competitiveness from the Far East suppliers is something that is changing our position in terms of manufacturing capabilities*

Senior Executive B, Company B.

The shift from manufactures towards the emerging economies was identified by 100 percent of the interviewees. Different points and concerns were highlighted during the interviews in relation to the changes affecting manufacturing:

*The main factors that contributed to the success of manufacturing in those regions are in particular low cost, good quality and cheap labour. They can also source a lot of components for the manufacture in these regions because the products and components are made in those regions as well and can be sourced locally*

Laurence Sexton,

International Logistics Program & Vendor Manager, EMC, Cork.
Another senior executive, responding to this study, highlights how the Far East competes on cheaper labour and pushes Ireland to the side as the cost of living in Ireland continues to increases:

*Labour is cheap in the Far East and the skill set abundant. If you take the cost of labour, and the high percentage of your manufacturing activities it is hard to compete against the far eastern suppliers. The other thing is the skills set, whether you are talking about high manufacture or low end. On the high level, we need to have then third level education, technical skills etc, they are in abundance now in India and China. Previously that would have been a competitive advantage for Ireland*

Senior Executive B, Company B.

An interviewee in this research study stated that the quality of products from emerging markets has improved, and they are as good as products manufactured in any other place:

*In the last 10 to 15 years, if you have look at items that were made up in China per example, it was the first thing to break, where now, the quality of the items produced China are as good as what is manufactured in Ireland*

Laurence Sexton,
International Logistics Program & Vendor Manager, EMC, Cork.
One of the consultants interviewed in this study, analysed the shift of manufacturing moving towards the east and also questioned the possibility of manufacturing jobs eventually setting in the United States:

We went through a tremendous period of growth with foreign investment specifically from the US companies. At that time the US companies started to move into Ireland. They were moving their manufactures out of places such as Porto Rico and other places in North or South America. They were transferring the manufacture and they came to Ireland. Now, if you look at the model, it has moved east towards Ireland, moved east towards Poland, moved east to China. Does it automatically keeps moving east until eventually settles back again into the US?

Veronica Perdisatt
Board Member, Mentor, Business Consultant.

Finally, one out come from this study is that in certain emerging countries, companies are now being required to manufacture their product in those countries in order to serve that particular market. Companies are looking in terms of growth in the emerging economies and they are competing to get into those economies and also to grow their market share in those economies:

Brazil, China and India are driving companies to have manufacturing basis in their countries to actually allow them to compete properly. If it is a state contract, they won’t give you a state contract unless you are manufacturing there. They can penalize your contracts by putting duties
on your products coming into the country. The company B has moved part of its production into Brazil so they can avoid penalties or duties going forward.

Senior Executive B, Company B

4:2.2 Corporate, Ethical and Environmental Issues and Responsibilities

This research acknowledges that in the past, polemic issues were raised by organisations moving into to emerging economies. This study notes that companies are today more inclining to take the ethical, environmental and corporate responsibility more seriously:

Historically, those responsibilities were not focused on but now obviously with telecommunications, internet, etc., companies are very concerned about their brand and their corporate responsibilities.

Jane O'Keefe,
Chair of IIPMM Training Standards Board, Business Consultant.

In many cases, this study has found that companies are adopting the laws of the countries in which they operate:

Companies should implement the laws and policies of the land. As we know, different countries have different approaches to the labour laws and environmental laws.

Veronica Perdisatt,
Board Member, Mentor, Business Consultant.
By complying with the local regulations, this study has found that companies are avoiding bad and negative publicity, and are also using this to their advantage as a cost savings in many cases:

*If the company is working based on the laws of the land I cannot see why the company should be penalized for it*

Executive B, Company B.

This research study acknowledges that many companies today are also taking advantage of rules and regulation of emerging economies. In some cases the laws would not be as strict as they are in more developed countries:

*The rules and regulations in Europe are different to what is applied in other continents and emerging economies*

Sean Martin,  
Fianna Fail Cork City Councillor.

One interviewee in this study discussed the difficulties in guaranteeing that products sourced in different markets are not linked to any sort of exploitation or laws infringements:

*Companies lose the control over what happens further down the tiers.*

*One company would subcontract another, which would subcontract*
somebody else. They probably have control of the top level but further
down there could be unknown ethical issues happening

James Neenan,
Senior Buyer, Flextronics, Cork.

On the other hand, a different interviewee brings back the challenge and responsibility to
organisations to focus and manage their supply chain process:

When companies are managing their supply chain they should know
through the layers of the supply chain who exactly is producing the
product for them. Nike is an example, as they don’t manufacture the
product at all, they outsource partners who outsource the subcontractors
and then again, child labour has been used, when the story got to the
papers, the Nike brand image was affected, their revenues were affected.
Companies will try to protect themselves against those issues to ensure
that it won’t happen again

Jane O’Keefe,
Chair of IIPMM Training Standards Board, Business Consultant.

This study has found that ethical issues are closely related to emerging economies and
outsourcing services to developing economies. Outsourcing will be discussed in-dept
further in this chapter.

This research has found that companies are concerned with their reputation, their image,
and how they are perceived in the market place. They do not want to be associated with
controversial issues that could potentially bring bad publicity. On the other hand,
depending on the industry and on the level of the business, some organisations may be interested in profit prior to ethical and environmental issues by simply ignoring them:

Some of the companies probably are worried about bad publicity, but in other cases, depending on the margin, the turnover and the costs that they are making and if their shareholders happy

James Neenan,
Senior Buyer, Flextronics, Cork.

4:3 Costs Affecting Manufacturing Business in Ireland

Ireland’s cost base is the first problem for businesses

Sean Martin,
Fianna Fail Cork City Councillor

In this research, 100 percent of the interviewees commented on the high cost of doing business in Ireland. The high utility bills, layers of taxes and high wages are some of the main concerns highlighted by the interviewees in this research. This study acknowledges how cost is the major factor driving manufacturing changes in Ireland.

The wheel has changed; we are gone from being a low cost economy to high cost economy where companies are paying more for utilities such as gas, electricity and large wage bills that companies are facing

Jonathan Wilson,
Senior Consultant Engineer, Pharmaceutical Industry
4:3.1 Utility Costs

This study has found that for many manufacturing companies the electricity to run the business is one the main factors when doing cost analysis to enter a market. The senior executive B interviewed compared the high cost of electricity in Ireland against the United States:

Our electricity costs in Ireland are enormous. Ireland was seen as the place where the American jobs were being outsourced to because it was cheaper but, it is amazing to see that you could actually run your plant with electricity at a third of the price in America

Senior Executive B, Company B.

Another interviewee supports this argument and acknowledges the high cost electricity in Ireland and the continuous increases:

The cost of gas, oil, electricity keeps going up, they are not competitive. The increases are irrespective of what is going in the overall context economy

Jonathan Wilson,

Senior Consultant Engineer, Pharmaceutical Industry

This research study acknowledges that the primary responsibility of any organisation is to maximize profit for directors and share holders, and that reducing cost has become one of
the primary business drivers. This study has also found that Ireland has become less competitive due to high utility costs:

At the end of the day, multinationals are not charities, they are here to make money. They are looking at their budget from a cost perspective. The cost of electricity and gas in Ireland are very high, they will be looking at those costs, location, and network. Can they move product in and out easily? The infrastructure and costs are extremely important for businesses, and Ireland is not competitive in terms of utility costs

Jane O'Keefe,
Chair of IIPMM Training Standards Board, Business Consultant.

4:3.2 Wages Costs

This study notes that increasing in wage costs are an issue for manufacturing industries in Ireland especially, when they are labour intensive. It has become apparent that wage costs are one of the major factors for the manufacturing industry to compete. According to an interviewee, the cost is a major driver of low competitiveness in Ireland and high wages contribute to that:

As Ireland becomes more up skilled and more educated, there is a concept even around the work force, that they should be paid more and that they
are entitled to more, nothing wrong with that, but the downside is that Ireland can not compete with the emerging economies going forward

Sean Martin, Fianna Fail Cork City Councillor.

Another interviewee in this study expresses his fear of the increase of wages in the manufacturing industry and how the Celtic Tiger has set an expectation of high wages:

I fear for our cost basis in Ireland. The Celtic Tiger has been very good, but, it has set an expectation that wages and the cost of living are probably at their highest

Senior Executive B, Company B.

4:3.3 Hidden Costs

From the panel interviewed in this study, 70 percent consider that there are a number of different hidden costs associated with doing business in Ireland. Further more, 70 percent of the interviewees acknowledge that the high costs are a problem for Irish competitiveness:

Working with Enterprise Ireland, a lot of the comments that you would get back from industry is about the stealth costs or the indirect costs. Stealth tax or indirect cost, and I think that the big problem is that you look at the
cost of doing business but then there is another layer of cost that people forget about, such as environmental costs, paying tolls for the roads and others

Veronica Perdisatt,
Board Member, Mentor, Business Consultant.

4:4 Innovation and Process Improvements in Manufactures

Innovation is probably a sign of hunger, a sign of being able to be creative and change the way we produce and the way we run our business

Senior Executive B, Company B.

This research study has found that companies are looking at what are the best practices that can be applied in order to generate synergy. The challenge for manufactures in many cases is to understand the model applied in the organisation today and where this organisation intends be in the future. One of the interviewees in this research stated that companies needs to have a global vision of the entire process in order to gain synergy:

Sometimes people don’t understand the different areas of the business and how they operate. The synergy has to come together and people cannot have a tunnel vision, they cannot be silo based. We have to have the vision across of different functions of the business. That is a big challenge for companies because they may not always be thinking globally and they have to be innovative

Brian O’Connor,
Director of Global Services Logistics International, EMC, Cork.
This study reveals that 80 percent of the interviewees acknowledged the importance of process improvements in the manufacturing industry. Such processes are being used with the intention of reduce costs, increase effectiveness and consequently, profit:

Process improvement is certainly something that a lot of manufactures are looking at because ultimately they are trying to reduce their costs. Process improvement is about streamlining processes, taking out the inefficiency, taking out the convolutions, complications and the complexities on the repeat loop that have grown on processes over the years – increasing customer satisfaction and reducing internal costs

Susan Clancy,
Managing Director, Lean Sigma Systems, Cork.

Another consultant interviewed in this study concurs and further discusses how companies are examining all different areas that support manufacturing in an organisation. The use of process improvements goes beyond the manufacturing itself. It is being applied throughout the company in different departments to gain synergy on the overall process:

Restructuring and using Ireland as a base for the final product, importing the raw material to other countries and assembling in Ireland is one of the processes that companies are taking. Companies are looking at their resources, R&D, supply chain, making everything as efficient as possible.
Companies are looking at streamlining their own internal processes to maximize profit. Some companies are very good at this

Jonathan Wilson,
Senior Consultant Engineer, Pharmaceutical Industry.

One of the interviewees gives an example of the above discussion:

In the manufacturing of a previous organisation that I have worked for in Cork, the production cells have been reorganized trying to make the operation place as lean and efficient as possible trying to keep the doors open. It is all about bringing the costs down and keeping the manufacture running.

James Neenan,
Senior Buyer, Flextronics, Cork.

This research study notes that manufactures in Ireland are finding ways to do business smarter. Competing with emerging economies has proved difficult for many global organisations and companies are investing in machinery to automat their processes and increasing efficiency:

From a manufacturing point of view in emerging economies, in a lot of cases, instead of investing in capital equipment and machineries, labour is so cheap that they can only throw labour at it. On the other side, here we
are looking into automating more so we can save labour cost, in that context we are totally different

Senior Executive B, Company B.

4:4.1 Outsourcing in Manufacturing

This research has found that changes in business models to gain competitive advantage has been a driver in the supply chain management evolving into a global function and outsourcing activities. In this study, 90 percent of the interviewees affirmed that companies are moving towards outsourcing as a measuring cost. Outsourcing is giving organisations the ability to manage their fixed and variable costs. This is a way to take advantage of economies of scale in different parts of the globe and manage the process internally. Outsourcing is one of the practices used to add value to organisations supply chains.

An interviewee responding to this study discussed how companies are focusing on areas of the business that can be centralized or decentralized by outsourcing some activities to maximize profitability and customer responsiveness:

Supply chain management is a big factor now because there are now different supplies and different hubs across of the world. Another change as well is that we actually decentralized the hubs so we manufacture here but distribute the product into hubs in Hong Kong, Cork and Amsterdam, so we are decentralizing the hub and outsourcing some of those activities

Senior Executive A, Company A.
Another of the interviewees concurs and further states that it is important to develop the supply chain and the ability of Ireland to compete in low end manufacturing:

_Realistically, we need to work the supply chain as a country because we will not be able to compete at the low end of manufacturing_

Brian O'Connor,
Director of Global Services Logistics International, EMC, Cork.

One of the consultants interviewed states that outsourcing has been used in the past as a tool for competitiveness:

_There was a time in manufacturing when we were very competitive, if you go back 10 to 15 years ago when we started to outsource to remain competitive. We have done a lot to outsourcing over the years to remain competitive_

Jane O'Keefe,
Chair of IIPMM Training Standards Board, Business Consultant.

Another interviewee concurs and further discusses outsourcing as a strategy applied by organisations.

_I believe an outsourcing strategy is the correct strategy for organisations that need to lower their cost base, gain access to new markets or customers, and new and emerging technologies and skills. An_
organisation must fully understand the relationship that they are entering into. This leads into the advantages and disadvantages

Veronica Perdisatt,
Board Member, Mentor, Business Consultant.

4:4.1.1 Advantages and Disadvantages of Outsourcing

When you outsource there are advantages and disadvantages but the idea is that you weigh those before hand and see if the advantages out weigh the disadvantages

Brian O'Connor,
Director of Global Services Logistics International, EMC, Cork.

This research has found that the outsourcing activities form part of process streamlining in many manufactures today. Outsourcing activities have advantages and disadvantages associated with them, some of which have been outlined by the interviewees in this study. Cost reduction is one the advantages of outsourcing:

There are more and more companies outsourcing at the moment. Everything is down to costs. If you see how manufacturing companies operate today, they outsource most of their assembly manufacture to cheaper economies. It is part of the manufacturing business model today

James Neenan,
Senior Buyer, Flextronics, Cork.
This research study has found that organisations use outsourcing as a strategy tool to control fixed or variable costs. This has proved to be a major advantage for planning and budgeting costs:

One of the core advantages of outsourcing in manufacturing is that if you are in a growth phase, a lot of companies don't have to take the brunt of expanding their own permanent labour constantly. Outsourcing becomes a fixed cost rather than a variable cost. If you outsource your manufacture to someone else, they will manage that side of the business.

Senior Executive B, Company B.

Another interviewee agrees and states the costs benefits of outsourcing:

One of the main benefits of outsourcing is that you manage your cost basis very well. You negotiate the costs with your partner up front and that price is locked, where if you try to do that internally is very different.

Jane O'Keefe,
Chair of IIPMM Training Standards Board, Business Consultant.

Another important benefit of outsourcing found in this study, was stated by a senior executive interviewed. By outsourcing some of the manufacturing activities, companies are able to concentrate and focus on other areas of the business. They can focus on their core competencies:

By outsourcing companies can then focus on your core activities. If there was a company for example, that designed and manufactured products in
the past, and now has decided that they just want to design their product, they can outsource the manufacturing because again, it is probably is a lower skills set than the one that they want to focus on. Their focus may be on design. So outsourcing allows you to grow your business and contract it as you need without the brunt of having a fix cost in your business model. On the other side, intellectual property is one of the main disadvantages linked to outsourcing

Senior Executive B, Company B.

Another interviewee agrees and further states the advantages related to outsourcing:

The advantages of outsourcing are lower cost base, availability of skills, potential for new customer base, access to new and emerging technology and also the potential for an organisation to redirect their own resources into new 'value add' activities, example, using the excess manufacturing space for customer service or software development

Veronica Perdisatt,
Board Member, Mentor, Business Consultant.

This study has found that by outsourcing companies can avoid costs associated with developing new technology as the work is being carried outside of the organisation by a third party:

In some cases, the company may need to move up on technology to produce and investing on that can be very expensive, where by with
outsourcing, they don’t need to do that investment there is a saving on investment and on labour

Jane O’Keefe,
Chair of IIPMM Training Standards Board, Business Consultant.

This study has concluded that there are also disadvantages linked to outsourcing manufacturing activities. Some of those disadvantages can be described as: lack of control and flexibility in some cases, dependency on suppliers or partners, quality of material produced and danger of exposing intellectual property:

*If you want to change something rapidly, the supplier can be in the middle of a production cycle for another company and cannot change it because you have changed your planning. If you are relying on products to come from Thailand and there is now some political issues in that country, and the products don’t come in, you are now under threat to meet your targets*

Brian O’Connor,
Director of Global Services Logistics International, EMC, Cork.

Other interviewee further states the disadvantages linked to outsourcing if this strategy is not managed properly by the organisation:

*The disadvantages of outsourcing can be loss of control and core competencies. Cost of developing and managing the relationship.*
Potential to damage customer service and quality if not managed effectively

Veronica Perdisatt,
Board Member, Mentor, Business Consultant.

Finally, another interviewee made an interesting observation, stating that manufactures become out of touch with technology, and also emphasizes the loss of manufacturing expertise by outsourcing activities:

You loose the skills set and you are not in touch with the technology. When you own it you are controlling the technology. By outsourcing the only thing that you control is the end product if it is production and the cost to a certain extent. How something is produced, when you had it in house you were controlling and deciding how something was done, so that is gone and you can’t influence that. A lot of expertise would also go with that.

Jane O’Keefe,
Chair of IIPMM Training Standards Board, Business Consultant.

4:5 The Knowledge Economy and Irish Manufacturing

We need to up skill our work force and educate them to get into a world market

Sean Martin,
Fianna Fail Cork City Councillor.
This research recognises that Ireland has a very well educated work force but, it is also required to continue to up-skill the workers. Competing at the low end manufacturing has proven challenging and there is a need to adapt to current market changes:

*The low end manufacturing is not going to come back into Ireland.*

*Certainly, if you can get R&D in, we were forward thinking and we need to continue doing that. The IDA (Industrial Development Authority) can see that we cannot bring the low end manufacturing into Ireland but we have to target other segments. We will still have some sort of assembly in the country but not raw manufacturing*

Brian O’Connor,  
Director of Global Services Logistics International, EMC, Cork.

One of the interviewed consultants mentions that knowledge itself is not enough to sustain Irish competitiveness, and that only together with other factors, can it become a success for the Irish economy:

*Knowledge itself will develop the products and along with the government incentives, grants, and other initiatives. These products can be manufactured in Ireland, generating employment and growth, that is the key*

Jonathan Wilson,  
Senior Consultant Engineer, Pharmaceutical Industry.
Finally, this study notes that the knowledge economy also needs to be driven in the right direction, the future growth areas have to be identified and targeted. Plans have to be put in place to provide the right people with the right skill set, to ensure Irish competitiveness into the future:

*It is good that the government has ring fenced funds but they need to work closely with industry to provide the right course to create the right graduates to fill the right jobs at the right times and not create gluts of shortages of people in different areas*

Senior Executive A, Company A.

4:5.1 Balancing the Knowledge Skills Set

*It is very important for us to control the low skills set jobs*

Senior Executing B, Company B.

This research has found that as well as developing new skills to compete at the high end of manufacturing, the low skills also play an important role in society:

*It is part of the demographics of any society that you would have a percentage of your population that will only go into low skilled jobs.*

*Maybe that is because their education, where they live, their economic situation. You could apply the PESTI (Political, Economical, Social, Technological and International) factors in there. You will always have a proportion of the society that will just move in to low skilled job. Not*
everybody would be able to compete in the knowledge society – I don’t know the split and yes there has to be a split between low and high skilled jobs in any society

Veronica Perdisatt,
Board Member, Mentor, Business Consultant.

Another interviewee concurs and considers the requirement to have low skills jobs in the country as part of the society requirements:

There should be low skilled jobs in Ireland as there is a need for them. The country needs high skilled jobs but there will be always a requirement for the middle ground

Sean Martin,
Fianna Fail Cork City Councillor.

This study has found that in many aspects of manufacturing, it is important to differentiate the low end from the high end manufactures. High and low end manufactures have similarities and also significant differences in their strategies. Consequently, their views on globalisation and the effects of it can vary. One senior executive used the analogy of the food chain to represent how manufactures grow and develop:

If you take manufacturing, low end manufacturing is probably the lower tier of the food chain. What Ireland is trying to do is move up the food chain. It is a natural progression. We take rigid building here twenty years
ago so we were able to compete on that skill set. Twenty years on is the China, India and so on who is taking that, so we should be moving on the food chain to the higher platforms, higher levels of manufactures, development or services. More services orientated activity. And I think that the Irish government is trying to push that, they know that they can compete with the skills set

Senior Executive B, Company B.

This study recognises the importance of keeping low skilled jobs in Ireland as a way to develop people and up-skill them. It is also important not to underestimate the capacity of people in low skilled jobs, and their ability to grow and develop their skills. Many of today’s business leaders developed in this way:

People who are directly involved with the manufacturing process, are considered the process experts, these are the people who basically work hands-on in the process and know the issues that arise minute to minute, hour by hour, as opposed to management who knows it on a daily or monthly basis

Susan Clancy,
Managing Director, Lean Sigma Systems, Cork.

Finally, a interviewee states the importance of education for the future generations to continue the cycle and ensure that the country is producing the right skills required by the future business which will keep the economy going:
In early stages with kids in schools, look and see what are going to be the options when they are leaving school and going to college. What should they be focusing on? Is it computers, engineering, medical sciences, doing some research, what are the outcomes of it and see what up and coming things can we get our kids involved in, that can keep the country running in 15, 20, 30 years time

James Neenan,
Senior Buyer, Flextronics, Cork.

4.6 What Manufactures are Likely to Stay in Ireland?

This study has found that as a consequence of high costs and the increased demand for skills, some manufactures have already left the country. This study has found that the remaining manufactures in Ireland, the main factors keeping them in this country are, high cost of setting up new plants in other countries, the set of skills required, and the protection of patents and other sensitive information by regulations already in place in Ireland. Despite the recent loss of jobs in the pharmaceutical sector, this sector has being pointed to by 70 percent of the interviewees as one of the sectors in manufacturing most likely to remain in Ireland for a longer period of time:

Pharmaceuticals manufacturing industries in general are slower to move into emerging economy countries, especially for patent which could be replicated. Their laws are not as strict as in Ireland for example

Susan Clancy,
Managing Director, Lean Sigma Systems, Cork.
As well as the pharmaceutical industry, manufacturing processes which require high level of expertise, knowledge, and are highly automated, still continue to attract new business for manufactures in Ireland:

We have always been very good at manufacturing, we have implemented some methodologies there, and we have tons of success stories. Now maintaining that is going to be difficult. I would think that they would be at high level, at high end of products. Pharmaceuticals where you have low labour percentage involved, high automated. Those industries will be here for long term. Where there is labour intensive they will be the first to go. We are seeing they going already, it is too difficult

Jane O'Keefe,
Chair of IIPMM Training Standards Board, Business Consultant.

Finally, senior executive B concurs with the above statements and concludes the discussion affirming that there is a niche market for Ireland to compete on the knowledge basis, high skilled and high technical basis. On the low skill and high labour content Ireland has lost a share of its market to cheaper economies:

I would have to say high end, high skill set content have a future in Ireland. There are skills sets like the technical skill set, specific knowledge base, I do believe that we can compete in that environment that there is a niche there. Even if we may not be serving global economies, there is definitely a niche there to service the European economy. High labour content without a huge amount of skills set it is very hard for Ireland to
compete. Bottom line, labour is so cheap in other places, you don’t even have to go to China or India, you can go to the eastern of Europe, and if is low labour skills set work is a fifth of the cost of labour in Ireland.

Senior Executive B, Company B.

4:7 Requirements by the Irish Government

There is no easy solution . . .

Sean Martin,
Fianna Fail Cork City Councillor.

This study acknowledges that the environment in which the Irish manufacturing industry competes has become more competitive and challenging in recent years. These challenges require further measures from the Irish government to address the changes taken place in the sector. All interviewees expressed that the Irish government can improve to make Ireland more competitive and attractive to businesses industries, and in particular manufacturing:

The government has not done enough to protect the Irish manufacturing industry. They believe that tax is the key, but they still need to fight tax harmonization initiatives coming from Europe. They also need to provide better grants to innovative business, to small business, to key employees and key industries. They also need to provide better road and transport infrastructure in the country and a better and more cost effective
communications and technology resource to business to encourage them to survive and put down roots in Ireland

Senior Executive A, Company A.

This study acknowledges the importance of investing in education. In this study, one of the interviewees describes that Ireland has benefited from education in the past and now, more than ever, the knowledge economy is needed to push the country forward and to attract multinational industry investments:

"The knowledge economy is probably where we benefited from the 60's, 70's and 80's when money was put into education and we came out with a lot of good skills set. We must be conscious too that other people are moving at a faster pace than us. If we are competing to those economies, we must be very conscious that we have a better thing to bring to the table than other economies do"

Executive B, Company B

In this study 50 percent of the panel interviewed agreed that corporate taxes in Ireland are already at a very low rate and that the government would probably find it difficult to lower them any further:

"Obviously, we need to look at corporation tax breaks but we have the lowest corporate taxes in Europe anyway and that would attract multinationals into the country. Grants to start up developments especially in the manufacturing sector encourages indigenous industry and trying to"
make it grow. On the other hand, the government has created centres of excellence, like the IDA, which has developed business parks that have attracted industries in the past and that has been good and they are still doing more but it is the cost base that we cannot compete with emerging economies

Jonathan Wilson,
Senior Consultant Engineer, Pharmaceutical Industry.

The senior executive A concurs on the above point on tax incentives and states the importance of tax incentives to sustain the manufacturing industry in Ireland:

Manufacturing only has a future if the government is cleverer on its tax incentives and continues to innovate in this area. There are huge savings here to companies and that bottom line is that money talks

Senior Executive A, Company A.

Another interviewee reinforces the need for the Irish government to manage high costs in Ireland, dealing with indirect cost, labour cost and taxes:

For Ireland to be more attractive for investors, the Irish government should look at the stealth costs, they should help out those companies by looking at indirect taxes, encouraging the use of the productivity vouchers and really looking at the labour cost

Veronica Perdisatt,
Board Member, Mentor, Business Consultant.
This study acknowledges that corporate tax is a key incentive to attract business into the country, and that the tax in place is already attractive. This model may not be enough to sustain the growth in the Irish manufacturing industry as the country already lost many jobs to different markets. The IDA is also mentioned by the interviewees as having a difficult task to make Ireland more attractive in the current climate:

*The Irish government for the last 40 years has been extremely strong on what they have done. The tax advantage in Ireland is a huge plus. People are always worried if this can be taken away from Ireland because we are part of the EU. The IDA is reinventing itself again, we are bringing again more jobs into the country that we didn’t think that we were going to have. R&D is a huge anchor, bringing R&D in is probably more important than bringing manufacturing.*

Brian O’Connor,
Director of Global Services Logistics International, EMC, Cork.

Another interviewee comments on the challenges facing the IDA in continuing its work:

*Funding is another key element for on-going competitiveness. IDA was doing a great job but continuing that, is going to be more and more difficult*

Senior Executive B, Company B.

Finally, an interesting point from another interviewee is that governments should invest and develop traditionally historical industries. By developing indigenous industries the government would also create an important marketing tool for the countries:
There is a need for the community and social level for all countries to maintain local manufacturing and historical local industries. This applies to Ireland, Germany, England, France and other countries. You need to keep traditional industries in place and work on concepts and ideas that will allow you to keep those industries going forward

Sean Martin,

Fianna Fail Cork City Councillor.
CHAPTER 5
CONCLUSIONS

5:1 Introduction

This research study is an evaluation of the Irish manufacturing industry and the diverse factors that impact its operations. Supporting this study is the analysis of the observations of ten people, whose remit in either public or professional life allows them to speak with authority on this subject matter. These include a politician, five key senior executives and four business consultants. As a result, the study provides an insight into the Irish manufacturing industry which describes and represents the observations of knowledgeable people in this sector. The conclusions pursued are based on the information produced from the author’s field research in conjunction with relevant literature about the manufacturing industry.

5:2 Review of the Main Findings

According to Doll and Vonderembse (2002), flexibility in manufacturing industry enable organisations to build their competitive capabilities (Doll & Vonderembse, 2002). This current study analyses the changes that have taken place on the Irish manufacturing industry in recent years, as a result of global challenges and market competitiveness. This research focuses on how Irish manufactures need to confront new competitors in their home market, and how to face the intense competition from foreign markets. Even though the competition is intense, there are still opportunities to expand both on the
domestic and overseas front. The findings of this research study suggest that, for manufactures in developed markets such as Ireland, government incentives combined with the continuous innovation and cost reduction, are likely to be the main defenses in maintaining competitive position. This is supported by Cohen et al., (2008) who stated that the globalisation is accelerating, leading to large structural shifts for manufactures, and new challenges to successfully manage their supply chain performance (Cohen et al., 2008). It is essential that Irish manufacturing continue to develop its ability to deliver high value, relative to its competitors and continue to innovate (Heynitz, 2006).

5:2.1 Globalisation: Emerging Economies and the Impact in the Irish Manufacturing

This study has found that globalisation is a world wide process of interaction and integration which impacts organisations world wide. The Irish manufacturing industry is no different, and the process of globalisation has affected its development and the way business is conducted. This view is supported by Scheele (2000), who suggested that the nature of the manufacturing industry has changed due to the globalisation of markets. Where once a business would have manufactured physical products for a one-time sale, there is now a shift towards building long term relationships with customers and servicing their needs around a manufactured product for that market (Scheele, 2000). An interesting finding from this study is that, companies have different strategic approaches in relation to product diversity and volume in order to attend different markets and increased in customized demands. “They are now moving towards low volume with diverse products and services, rather than high volume with one or two products, low
volume with a number of diverse products serving a wider market” (Chapter 4: 45). This study has found that by changing the product and services, organisations are targeting different markets and working to fit different strategies thinking global but acting local. “Not everything can be manufactured the same around the world. Organisations will try to find strategies that fit their manufactures and may need to apply those strategies differently” (Chapter 4: 45).

Another interesting finding in this study was that emerging markets today, have gained customers confidence with the quality of their products. In the past, products manufactured in emerging economies were perceived to have poor quality. Today, the manufacturing industries benefit from lower cost inputs with higher standards of quality outputs. Using this strategy, manufactures are sourcing component parts locally, and producing goods for more competitive prices without customer's quality concerns. This study has found that the main factor that contributed to the success of manufacturing in emerging economies, is in particular the low cost competitiveness offered by those regions. The products are being manufactured with lower prices and the piece part components are also being sourced in these regions, making the end product price competitive, “. . . products and components are made in those regions as well and can be sourced locally” (Chapter 4: 46).
5:2.2 Costs Affecting Manufacturing Business in Ireland

This research study has identified that cost reduction is one of the main drivers of globalisation. This is supported by Cohen et al., (2008), who state that internationalizing a company’s operation has been recognized as a key driver for overall supply chain cost reduction (2008: 7). This study has concluded that manufactures today, face unprecedented cost and time-to-market pressures. As the complexity of systems has rapidly increased, component costs and margins have continued to reduce, testing has become a larger contributor to the final cost of manufactured goods. Storper and Scott (1987), concur with this finding and further states that enterprises need to take into account not only of the present and cost of traditional factor endowments, of transport costs, of current demand levels and partners costs; but also of distance related transactions costs (1987 : 505-526). of dynamic externalities, knowledge accumulation and interactive learning costs (Enright, 2000).

This study has found that the government tax incentives in Ireland can be attractive to many organisations, but the indirect costs remain a problem for Irish manufacturing competitiveness. “You look at the cost of doing business but then there is another layer of cost that people forget about, such as environmental costs, paying tolls for the roads and others” (Chapter 4: 56). This study has found that of all the costs affecting Irish manufacturing, the cost of electricity and wages were the main two highlighted by the interviewees in this study.
5:2.2.1 Electricity Costs

This study has found that the cost of electricity in Ireland is impacting manufactures that require high amount of electricity to run their production plants. The manufactures that require a significant amount of testing through their processes, i.e., chemical, pharmaceutical and electronic manufactures, consume a significant amount of electricity in their processes. The findings from this study can affirm that the cost of electricity is considerably important to keep existing companies in the country and also attracting others. At moment the prices of electricity in Ireland are the highest in Europe and higher than a number of states in the U.S. "Our electricity costs in Ireland are enormous . . . it is amazing to see that you could actually run your plant with electricity at a third of the price in America" (Chapter 4: 53). McCárthaigh (2005) supports this view and states that electricity prices have increased 61 percent from 2000 to 2005 — the highest energy price inflation anywhere in Europe. The cost of electricity for industry has also recorded the highest rate of increase since 2000 — up 41% in a move that could threaten the competitiveness of Irish businesses (2005: 2). Forfas (2009) also supports this study findings on electricity costs, and further stated that the Irish industrial electricity costs are the second highest in the EU-25. Irish prices increased by 70 percent between January 2000 and January 2007. Low levels of spare generation capacity, limited interconnection, the poor availability performance and relatively small scale of Irish generation plants, and limited competition in generation and supply directly contribute to our uncompetitive (2009: 11).
Previous study has found that wage increases in Ireland are about average in the EU — lying in the middle of the table. “Irish wages in the private sector are well below the EU-15 average, lying in the bottom half of the table” (Kelly, 2008: 3). Despite the fact that Ireland is below the European Union wage cost average, this study has found that manufactures still continue to struggle with raising wage bills. “We are gone from being a low cost economy to high cost economy where companies are paying more for utilities such as gas, electricity and large wage bills that companies are facing” (Chapter 4: 53).

This study has also found that as people up-skill, they expect this to be reflected in their salary. The implication of rising wage costs is the erosion of competitive advantage against emerging economies. “As Ireland becomes more up skilled and more educated, there is a concept even around the work force that they should be paid more and that they are entitled to more, nothing wrong with that, but the downside is that Ireland can not compete with the emerging economies going forward” (Chapter 4: 55).

A very interesting finding from this study is that as Irish wage levels rise and there is a move away from traditional manufacturing, Ireland needs to increase the proportion of foreign direct investment and small and medium enterprise activity that is comprised of research and development. This view is supported by Cowen (2008) who affirms that it is essential that Ireland is a fiscally attractive place for businesses to engage in R&D (Cowen, 2008: 64).
5:2.3 Innovation and Process Improvements in Manufacturing

The findings from this study indicate that manufactures are becoming more innovative and investing in automation and new technologies. By becoming more automated, manufactures can reduce wage costs, increase output, and due to reduced process variability, improve quality and thus remain competitive. It has been found in this study that costs have a major influence on manufacturing’s competitive advantages. The investment in technology can also make Ireland competitive if compared to emerging economies, where the cost of labour is significantly cheaper. In many cases, in emerging economies there is less investment in capital equipment and machineries as labour is considered cheap. On the other hand, “here we are looking into automating more so we can save labour cost, in that context we are totally different” (Chapter 4: 59). This is supported by Keane (2008) who states that successful manufacturers are using new technological innovations to automate processes and provide new methods of interacting with both customers and suppliers, essentially achieving an increase in productivity. The successful manufacturers use sophisticated technology as a barrier to entry for would be competition (Keane, 2008).

Manufacturing organisations are constantly seeking to improve efficiency, quality, and responsiveness to customers. According to Hill and Jones (2001), as part of the attempt to increase efficiency, companies have also made great use of behavior and output controls to reduce costs by improving their processes and standardizing activities (2001: 452). This research study has found that “process improvement is certainly something that a lot of manufactures are currently looking at because ultimately they are trying to reduce their
costs. Process improvement is about streamlining processes, taking out the inefficiency, taking out the convolutions, complications and the complexities on the repeat loop that have grown on processes over the years — increasing customer satisfaction and reducing internal costs” (Chapter 4: 57).

This study has found that one of the ways the manufactures are working to become more competitive is by lowering their costs while they increase their throughput. This is being done through process improvement throughout the organisation's divisions or departments. "Companies are looking at their resources, R&D, supply chain, making everything as efficient as possible. Companies are looking at streamlining their own internal processes to maximize profit. Some companies are very good at this” (Chapter 4: 58). This is supported by Cowen (2008) who states that manufacturing will continue to play a fundamental part in the Irish economic future, with an increasing focus on securing competitive advantage through innovation, R&D and design (2008: 65).

The Irish manufactures surviving the current market pressures, are proving to be working smarter rather than harder. These organisations are constantly innovating, automating, and streamlining existing processes to complete tasks cheaper, faster and with better quality. They never stand still and that is the key to their continued success.

5:2.4 Outsourcing in Manufacturing

This research study has found that outsourcing is being used by Irish manufactures as a form of gaining competitiveness. Previous research studies have found that the popularity
of outsourcing continues to gain momentum in both the private and public sectors. In the mid-1990's, outsourcing was viewed as a viable solution to achieving cost control and production efficiency (Ulferts & Howard, 2005). Many companies began to incorporate outsourcing as a critical strategy in business planning. Due to historical successes, corporations are turning to outsourcing for a wide range of functions from logistics to human resources to customer relations. The reasons include cost, quality, performance, supplier pressure, access to special technical and application skills, and other factors (Applegate, 2003). This study concurs with the previous research and affirms that "one of the main benefits of outsourcing is that you manage your cost basis very well. You negotiate the costs with your partner up front and that price is locked" (Chapter 4: 63).

This study has also found that outsourcing is used by many organisations to grow or contract their businesses depending on markets demand. "Outsourcing allows you to grow your business and contract it as you need, without the brunt of having a variable cost in your business model" (Chapter 4:63). The added flexibility allows organisations to be more competitive. Outsourcing makes internal resources available, so companies can also focus on their core activities and improve their core competencies and thus adding value to their businesses and consequently strengthening their value chain. This argument is supported by Kalakota (2004), who stated that outsourcing projects to offshore companies improves a company's main focus on the job at hand and not on unneeded tasks (Kalakota, 2004).

The findings of this current study indicate that, there are also disadvantages linked to outsourcing. Those disadvantages can be associated with the poor management of the relationship with partners, poor communication and lack of understanding of the implications of giving sensitive information to a third party. "Intellectual propriety is one
of the main disadvantages linked to outsourcing’ (Chapter 4:63). The danger of having their product copied and sold on the market cheaper is one of the concerns that companies have and may decide to keep some of the activities in house. Organisation can lose control of its product quality and potentially damage its brand reputation. “The disadvantages of outsourcing can be loss of control and core competencies. Cost of developing and managing the relationship. Potential to damage customer service and quality if not managed effectively” (Chapter 4: 65).

5:2.5 The Knowledge Economy and Irish Manufacturing

This study has found that as manufacturing evolves, the work force involved in those manufactures are also required to evolve by gaining knowledge and up-skilling to keep pace with the changes in manufacturing. Previous studies have found that innovation is the key to the future development of manufacturing in advanced economies (National Centre for Partnership and Performance, 2007). The fast pace of technology and the customer demand for new and better products requires that manufactures are able to innovate continually and bring these innovation to the market place quickly (Blackburn, 1991). Due to frequent innovation, products closely match current customers demand and expectations and firms can adopt technological advancements as they become available.

This research study has found that in order to adapt to constant changes, it is extremely important to up-skill the work force in the country to compete in the global market place. Having the right skills available is important for the country’s competitiveness to keep existing businesses and attract new others. There is a need for the Irish government to
continuously work with organisations, colleges and universities throughout matching businesses expectations. “They need to work closely with industry to provide the right course to create the right graduates to fill the right jobs at the right times and not create gluts of shortages of people in different areas” (Chapter 4: 67).

Previous studies have found that successful businesses in the future will be those which develop and maintain strategic alliances with customers based on trust and mutual benefit. This extends beyond sales. It affects research and development, innovation and new product introduction (Scheele, 2000). The findings of this study indicate that the low end manufacturing that has left Ireland will not come back into the country. As well as developing skills to fulfill the high end manufacturing needs, it is equally as important to manage the low end manufactures still left in the country as they are extremely important to the society. “There should be low skilled jobs in Ireland as there is a need for them. The country needs high skilled jobs but there will be always a requirement for the middle ground” (Chapter 4: 69). Another important finding of this study is that, keeping low skilled jobs in the country is an opportunity to develop people and to give them the opportunity to grow. The people involved in low skilled jobs can also help organisations with process innovations as they work directly with the products as oppose to management who has just an overall picture. “People who are directly involved with the manufacturing process, are considered the process experts” (Chapter 4: 70).

Finally, this study has found that in order to sustain and grow a knowledge based economy, the Irish government needs to support innovation by investing in R&D, education, infrastructure, as well as work with existing manufactures, aligning business need with skills availability. This view is supported by Cowen (2008) who affirms that
the Irish government will continue investing in innovation creating a venture fund, known as ‘Innovation Fund — Ireland’, to support early stage R&D-intensive small medium enterprises (Cowen, 2008).

5:2.6 Unemployment Affecting Manufacturing:

This research study has found that the changing nature of the economic landscape is evident in the decreasing number of jobs in the manufacturing sector. Previous studies have shown that traditionally, most of the fall in manufacturing employment globally has occurred in two sectors, textiles and metal products, although high-technology manufacturing is increasingly being affected as well (National Centre for Partnership Performance, 2007). According to Jobs News (2008), the latest figures indicate that Irish unemployment is at its highest in 11 years, recorded at 244,500 in September 2008. Unemployment figures have increased by 79,565 in the last year which is the biggest yearly increase since 1967 (Jobs News, 2008).

The rapid rise in unemployment can be attributed to a combination of factors such as globalisation and the world credit crises. The emergence of cheaper economies has taken low skilled manufacturing out of Ireland, and the unavailability of credit caused by the world financial crises has impacted manufacturing.

An interesting finding from this study is that many manufactures have seen their profit margins and competitiveness been eroded by the emergence of cheaper economies. Eventually, these organisations fund it impossible to compete on a global scale when
based in Ireland. This study has found that the low end manufacturing is not going to come back into Ireland. These labour intensive, low skilled manufacturing based jobs have traditionally provided substantial employment in Ireland. On the other hand, the findings from this study indicate that it is still possible to attract R&D investments into the country to provide future employment. “The IDA can see that we cannot bring the low end manufacturing into Ireland, but we have to target other segments. We will still have some sort of assembly in the country but not raw manufacturing” (Chapter 4: 66).

According to the latest figures released by Forfas (2009), over 34,000 jobs were lost in manufacturing during the 2000-2007 time period. The majority of sectors experienced job losses during this period. However, the chemicals and medical/precision devices sectors expanded, although this growth has slowed over recent years (2009: 71).

5:2.7 Manufactures More Likely to Stay in Ireland

This research study has found that, highly regulated manufactures such as pharmaceutical, medical devices and specialized industries are more likely to stay in Ireland in the coming years. “Pharmaceutical manufacturing industries in general are slower to move into emerging economy countries, especially for patent which could be replicated. Their laws are not as strict as in Ireland for example” (Chapter 4: 71). Those manufactures are more inclined to remain in Ireland due to the fact that traditionally set up costs associated with these industries are very high, and the companies are also well protected by robust Irish government legislation and EU regulations. A common theme among many of the industries more likely to stay in Ireland, is that their products require
a high level of quality, technological skills and specialised manufacturing processes. The labour intensive companies are the companies leaving the Irish market. “Pharmaceuticals where you have low labour percentage involved, high automated, those industries will be here for long term. Where there is labour intensive they will be the first to go” (Chapter 4: 72)

Previous study has found that many of Ireland’s newer manufacturing-related jobs are not found in factories or even in traditional manufacturing firms, but are nevertheless essential to the development, production, marketing and delivery of manufactured products (National Centre for Partnership Performance, 2007). This research study has found that in response to raising costs, these companies have set up R&D facilities in Ireland to innovate and develop high value-add products. Dillon (2008), concurs and further states that the Irish government has provided funding of €90m for the IDA to attract foreign direct investment, and another €48.4m to Enterprise Ireland to stimulate the indigenous sector (Dillon, 2008). Ireland must continue to compete aggressively for overseas investment while supporting the indigenous sector. Enterprise Ireland and the IDA will be well placed in the coming year to ensure that export-led growth continues to underpin economic renewal (Cowen, 2008).

A key factor to the success of such developments, is constant innovation and government support in developing high skilled graduates. Joint governmental and industrial funding in developing highly skilled graduates is the key to the future survival of the manufacturing sector in Ireland.
5:2.8 Requirements by the Irish Government

This research study has found that attracting manufactures and keeping them in this country is an important and difficult task for the Irish government. Previous studies have found that in seeking to attract higher value-added, higher-skilled foreign direct investment (FDI), the quality of Ireland’s workplaces and of its workforce, particularly in terms of capacity to manage change, is proactively marketed by our industrial development bodies as a key asset, and the Irish government is apparently moving towards that direction (National Centre for Partnership Performance, 2007). This study has found that it is crucial for the country’s economy, that the Irish government continues to investment in education and in the up-skilling and re-skilling the Irish workforce. “In early stages with kids in schools, look and see what are going to be the options when they are leaving school and going to college. What should they be focusing on? Is it computers, engineering, medical sciences, doing some research, what are the outcomes of it and see what up and coming things can we get our kids involved in, that can keep the country running in 15, 20, 30 years time”, (Chapter 4: 70). This will be increasingly a competitive requirement, from the low end, to the leading-edge high end manufactures in Ireland.

Previous studies have found that the tax breaks on offer to individuals for investment in manufacturing companies through the Business Expansion Scheme, are an added incentive to investors to provide capital to fund the development of new and enhanced products by Irish manufacturing (Keane, 2008). This study has also found that there is a need for the Irish government to continue to develop strategies around the taxation and
grants incentives to attract and keep manufactures in Ireland. "They also need to provide better grants to innovative business, to small business, to key employees and key industries" (Chapter 4: 73). The government should also be concerned about the indirect costs affecting businesses in the country, "the Irish government should look at the stealth costs, they should help out those companies by looking at indirect taxes, encouraging the use of the productivity vouchers and really looking at the labour cost" (Chapter 4: 75).

This study has found that infrastructure is another important element impacting the competitiveness of Irish economy. It is required that the Irish government invest in infrastructure, "they also need to provide better road and transport infrastructure in the country and a better and more cost effective communications and technology resource to business to encourage them to survive and put down roots in Ireland" (Chapter 4: 73).

Previous studies have found that organisations and their operations functions have responsibility for the general well-being of society beyond short-term economic self-interest (Slack, 2007: 682). This study has found that organisations are concerned about the local economy and are living up to their corporate social responsibilities. This has also been recognised as something that impacts their image, and companies are in general complying with local regulations. "Historically, those responsibilities were not focused on, but now obviously with telecommunications, internet, etc., companies are very concerned about their brand aid and their corporate responsibilities" (Chapter 4: 49).

According to Cowen (2008) traditionally, the environment was seen as an important input to economic progress only insofar as natural resources were raw materials for production. In recent times it has become accepted that a high quality environment is both an
important dimension of quality of life and a key requirement for economic performance in a much more sophisticated way than was widely accepted in the past (2008: 80).

The findings of this current study indicate that the main requirements from the Irish government are to invest in education, up-skilling the work force and future workers. Continue to work with existing industries and attract others by offering tax and grants incentives. And finally, continue to invest in infrastructure in the country, such as broadband, roads, rail, air and sea ports.

5:3 Recommendations for the Future of Irish Manufacturing

This research study has found that manufacturing is critically important to Irish economic strength and sustainability. Therefore, the Irish government should give substantially more weight to the potential short and long term impact on manufacturing of any new policy, and particularly focus on creating a positive climate for the manufacturing industry. The Irish government should actively seek to raise the attractiveness of Ireland as a manufacturing base. The continued investment in knowledge, education, and work force up-skilling will enhance Irish competitiveness. This should be done in conjunction with universities, colleges and industry to align business need with skills availability. The Irish government should encourage processes, bodies, and programs for further development of research results into implementation-ready products, technologies, applications, processes skills and knowledge. There should be an active policy of matching business requirements and opportunities with demonstrated research results and capabilities which would particularly benefit small and medium sized manufactures.
This research study recommends that manufacturing organisations continuously reassess their core competences and capabilities against global competitive standards and benchmarks. Irish manufactures are required to enhance their focus on key, high added-value products and technologies, yet simultaneously expand the total service range within their particular sectors. This research can recommend that companies should actively seek strategic alliances. Strategic alliances can create the means by with manufactures can expand their businesses, by allowing them to concentrate on developing their core strengths. This can provide the organisations with the ability to change and respond quickly to markets variations and opportunities.

Finally, this research study can recommend that manufactures should constantly seek innovative ways to do business more effectively while keep the costs low. Organisations should also lead in environmental standards. The government bodies should collaborate actively to encourage companies to become environmentally regulated and standardized to drive the reduction of waste and demonstrate the sustainability of their operations.

5:4 Recommendations for Future Research

As previously outlined in the limitations in chapter three, the Irish manufacturing industry is an extensive topic with many areas which merit further study.

One area in particular, which merits extensive research is the area of the knowledge economy. As previously outlined in chapter four, it is very interesting to see how Ireland
will move towards a knowledge economy base and up-skill its work force. An assessment of how Ireland will split the jobs between low skilled and high skilled jobs will be interesting for further study. As mentioned in chapter four, every society needs to have a mix across the different levels of expertise in a society, it is important even as a natural professional progression for individuals.

The predominant focus of this research was on issues faced by today's Irish manufacturing industry, and the challenges to survive against extensive market competition. Further research studies need to be done on a continuing basis as this topic is constantly evolving and its literature can become out of date rapidly. Future research could concentrate on how Irish manufacturing has evolved in the past few years. Further research could also explore how Ireland can invest in those manufacturing industries, which are already in this country, to maximize their potential and avoiding more job losses.

Previous studies suggest that business strategy for any business usually has three possible options: Technology leadership, driven by technical innovation and the ability to have leading edge capability; operational excellence, which is a cost-driven strategy; and customer intimacy, which is segmentation driven. All can be effective, but only one can be pursued at any time. According to Britton (2000), trying to mix strategies is usually ineffective and leads to a poor competitive position (Britton, 2000). It would be beneficial for future researches to understand which approach has been the most successful for manufactures and what are the impacts of mixing different strategies on the manufacturing industry.
As previously mentioned in chapter two, ethics related to the manufacturing industry have in the past caused disruption to manufactures. Further research could be allocated for this specific area, pursuing information on how organisations are dealing with corporate responsibilities, and how this can impact on public perception.

Finally, one of the main issues identified by this study, and from all interviewees, was the high cost of doing business in Ireland. Given the current market crisis and the pressure for manufactures to reduce costs, further studies could examine the world financial crisis and the impact on Irish manufacturing industry. A development in this study could also examine how the Irish government bodies are working to retain and attract business into the country. A range of state agencies are involved in promoting Ireland’s manufacturing and other industrial developments. Forfas is a body covering a wide range of industrial development issues, the Investment and Development Agency (IDA) is responsible for attracting FDI, and Enterprise Ireland is committed to the development of indigenous enterprises.
Conclusion

This study has addressed the issues relating to the future of manufacturing competitiveness in Ireland. Sustaining competitiveness in developed economies is proving to be one of the major challenges facing manufacturing worldwide. The emergence of lower cost economies, the rising costs of labour and utilities are contributing to the erosion of competitiveness. This research has found that Ireland as a developed economy is no different, having suffered the loss of many low skilled, labour intensive manufacturing jobs in the recent past. The manufacturing sector in Ireland faces many challenges in its bid to remain competitive.

This study has concluded that low skilled labour intensive jobs will never come back to Ireland but, as a country we have to focus on the remaining industry and steps that can be followed to ensure competitiveness. The Irish government has recognised this and has set aside a significant amount of capital to aid and stimulate growth in the sector.

Despite the current downturn in the economy affecting manufacturing, there are also many positives within the Irish manufacturing sector. In 2006, approximately 221,000 people were directly employed in manufacturing in Ireland, and it accounted for 23% of economic output. Manufacturing is here to stay as an important base of the Irish economy.

The successful manufacturers will be the ones aware of the current environment and will understand how to best utilise the competitive advantages which still exists. It is evident
that manufacturing in Ireland is experiencing a shift towards higher-skilled, higher value-added innovation based activities. The best way of keeping the manufacturing industry in Ireland is to automate and to specialise, mainly in areas where there are needs for specific skills, and where the price of the workforce is not a key factor. By having a clearly defined, and comprehensive measurable strategy, the best manufacturers will move to explore the core areas of their business, to ensure that they are not only competing, but becoming leaders in their fields.

Organisations that strive to innovate and have integrated proven process improvement tools into their operational strategy, continue to be industry leaders in their fields, despite the challenging economical environment in present day Ireland. These companies have a future and continue to grow their operations today. In summary, the future of the Irish manufacturing industry relies on government incentives and the availability of a highly skilled work force to supply the industry requirements.
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Appendix A

Interview Questions
Interview Questions

The same questions were asked to all ten interviewed people. Those questions were segregated in different sections to explore the gaps found in the literature of this study, and to investigate what is — The Future of the Irish Manufacturing Industry in Relation to Global Competitiveness.

Globalisation

1. From a global perspective what changes have you seen in manufacturing in recent years?

Emerging Markets

2. What factors contribute to the success of manufactures in emerging economies?

Ethics & Corporate Responsibilities

3. It has been stated by Meyer (2004) that manufactures play an important role in linking the rich and poor economies and transmitting capital, ideas, value across borders. Why is it important for operations management to take its environmental responsibility seriously?
Competitive Capability & Innovation

4. According to Hill and Jones (2001), innovation, flexibility, value to customer quality and fast and reliable diversity are strategies used by organisations to strength their capabilities. How are manufactures re-inventing themselves to survive the global market competitiveness?

5. How do you see the role of out sourcing in the manufacturing industry? What are the advantages and disadvantages?

Irish Perspective

6. In your opinion how should the Irish government promote growth in the manufacturing industry to compete with emerging markets?

7. Is the ‘knowledge-based economy’ enough to sustain and promote growth in the manufacturing sector in Ireland going forward?

8. In your opinion is it necessary to keep the low skilled jobs in the country as well as develop skills to compete in the ‘knowledge’ basis?

9. What possible changes would help the Irish government to promote or make Ireland more attractive for international organisations to invest in the country?

10. Can you see a future for the manufacturing industry in Ireland?
Appendix B

List of Interviewees
List of Interviewees

1. Brian O’Connor
   Director of Global Services Logistics International, EMC, Cork

2. James Neenan
   Senior Buyer – Flextronix, Cork.

3. Jane O’Keefe
   Chair of IIPMM Training Standards Board, Business Consultant.

4. Jonathan Wilson
   Senior Consultant Engineer, Pharmaceutical Industry.

5. Laurence Sexton
   International Logistics Program & Vendor Manager, EMC, Cork.

6. Sean Martin,
   Fianna Fail Cork City Councillor.

7. Susan Clancy,
   Managing Director, Lean Sigma Systems, Cork.

8. Veronica Perdisatt,
   Board Member, Mentor, Business Consultant.

9. Executive A, Company A.

10. Executive B, Company B.