



# COMPETITIVE CHALLENGES: CHAIN REACTIONS

An Analysis of Supply Chain Management and Competitive Solutions for the Island of Ireland

Supply Chain Management is the strategic management of material, information and financial flows across the total supply chain. The aim is to simultaneously optimize total supply chain costs and investments and deliver appropriate service levels. As such it is an essential ingredient in every organisation's competitive advantage. (NITL)

## What they are saying about supply chain management...

Systems logistics or chain management skills are essential for Irish exporters to reduce the negative impact of location and distance on transport and other logistics costs. While the location can not be changed the skill with which we manage the consequences of the location can be enhanced through systems logistics. In effect, by becoming a centre of excellence in systems logistics we could compensate for the negative impact of location and gain competitive advantage. Forfás, World Class to Serve the World

Over 90% of CEO's recognise supply chain management as either 'very important' or 'critical' to their business with research revealing that financial success is clearly linked to supply chain management performance with companies with excellent SCM showing a market capitalisation CAGR (compound average growth rate) up to 26% higher than the industrial average.

'The Reward of Supply Chain Excellence: A Research Study' December 2003. INSEAD/ Stanford University

Supply chain management lies at the heart of the Dell Direct model and, therefore, at the heart of Dell's business performance. An effective supply chain MUST be as fully integrated as possible, with each link clearly aware of their respective roles – there can be no 'Weakest Link' in a world class supply chain.

Kevin Henry, SerCom Solutions

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## NITL Research and Consultancy

Past and present research and consultancy practice by NITL includes:

- A study of SCM issues faced by Industry in Ireland and the barriers to SCM uptake in Ireland.
- Review and advise provision on the transport operations of the IBTS.
- An examination North / South infrastructure and its compatibility with modern SCM principles.
- Provision of advice on North / West Gateway between Donegal and Derry on behalf of the Northern Ireland Government.
- Application of modern SCM principles to the Airline Industry.
- A study on the viability of a cross border air service, which led to the start of the recent Cork – Belfast – Cork and Dublin – Belfast – Dublin routes.
- Development and review of supply chain strategies for a number of companies including a large dairy cooperative; a furniture manufacturer; a consumer goods supplier; a number of food companies and a high tech company.
- A review of the distribution operations and development of delivery routes for a consumer foods company.
- Provision of appropriate logistics benchmarks for a third party logistics service provider and for various consumer sectors.
- Development and evaluation of quotations for third party distribution for a consumer goods company.
- Regulation of the Bus Industry in Northern Ireland on behalf of the Northern Ireland Government.
- An investigation into Transport Infrastructure, Investment and Location. A global study on behalf of Department of Transport, UK Government.
- NITL's report on logistics capabilities in Irish companies in 2000 (2) highlighted some serious deficiencies in Supply Chain Management (SCM) practices.



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NITL is Ireland's centre of excellence in supply chain management. It is hosted by the Dublin Institute of Technology.



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## Foreword

The erosion of Ireland's competitiveness has become the undeniable 'elephant in the corner' of our economic success story. Rapid economic growth, fuelled principally by inward investment and an abundant skilled labour force, has taken much of the urgency out of public debate on competitiveness. Yet there is a growing realisation that in the medium term, Ireland's ability to hold its position as the location of choice for foreign direct investment in Europe is under threat because of our high cost base.

As Ireland's high cost base hardens into the foundations of our economic and social institutions, there is a growing acceptance that in the face of rising prosperity it is becoming increasingly difficult to reverse this trend – at least in the short term and by conventional measures. Because we are an open, export oriented economy vulnerable to low-cost competition, this reality forces Ireland to pursue an economic strategy that looks to position us higher up the value chain of enterprise activity. The new global race Ireland has joined is the knowledge economy and our future focus must, of necessity, be on advanced education and skills investment as one of the key stamina factors for that race. Publication of 'Global Competitiveness: Chain Reactions' by the National Institute for Transport and Logistics (NITL) is a contribution to that debate from Ireland's centre of excellence on Supply Chain Management.

'Global Competitiveness: Chain Reactions' positions Ireland ahead of the pack in the knowledge economy race within the Euro Zone. However, our status as the location of choice for European and US investment is in real danger of being overtaken by some new EU entrants – Slovenia, Slovakia, the Czech Republic, Lithuania, Latvia and Estonia. They already share some of Ireland's key attributes – a young, well educated labour force, competence in English as the lingua franca, and good quality infrastructure. And as of 2009, all will be full members of the Euro Zone.

Of course, when it comes to market access, the Baltic and Central European Member States already have some natural advantages over Ireland, most notably proximity to all the major European market and land routes to those markets. And, most importantly, they have a significantly lower cost base.

The challenge for Ireland is to make wise policy choices now about the kind of strategic supports we need to put in place to deliver higher skills in the medium term. It is through this critical investment that we can best leverage our position in the knowledge economy and continue to attract inward investment and grow global market share for our enterprise sector.

In one key area of higher strategic skills – supply chain management (SCM) – Irish industry has a rare advantage over its European competitors. With the establishment of NITL in 1998, the Irish Government and Enterprise Ireland recognised the need for SCM best practice to be adopted as a core management skill for the future of Ireland's enterprise sector. In skilling up to meet the challenges and opportunities of the knowledge economy, 'Global competitiveness: Chain Reactions' makes a compelling argument for two things: widespread adoption of excellence in supply chain management as a higher managerial skill – especially among indigenous enterprises both small and large; and the urgent need to invest in SCM best practice through education and awareness programmes for middle and senior managers.

Looking over the horizon, one of the keys to industrial success for any country will be its managerial competence in advanced SCM skills. This is especially true of developed economies such as Ireland where there is an increasing trend to outsource lower function manufacturing processes to lower cost locations but to retain high skill functions – such as research, design, marketing and sales – at the primary base. Given the foresight shown in previous policy decisions, Ireland is already well placed strategically to promote excellence in SCM. The very existence of the National Institute for Transport and Logistics bears testament to that foresight. But as 'Chain Reactions' reveals and measures, the level of penetration of core SCM skills among indigenous Irish companies is far too shallow. The challenge for Ireland is to recognise that in order to stay ahead in the knowledge economy race, we must extend and deepen SCM adoption across the enterprise sector.

Professor Austin Smyth  
Director, NITL  
September 2005

## Section 1

### Introduction and Overview

#### 1.1 The Global Context for Supply Chain Management

Most businesses can be described in terms of the four functions – buy, make, move and sell. Traditionally these functions have been managed in isolation, often working at cross purposes. Supply chain management (SCM) means thinking beyond these established boundaries and strengthening the links between the different functions in order to provide a better service at lower cost and so create competitive advantage.

On the global stage, World Class SCM has replaced World Class Manufacturing as the key strategic goal of leading edge manufacturers and producers of goods and services. The increasing globalisation of trade in goods and services has created both market opportunities and competitive challenges. As a strategic response to globalisation, supply chain management has become a vital tool in the enterprise toolbox. And as a function of competitiveness in particular, the SCM tool is rapidly becoming more sophisticated and more indispensable to those in the geographical locations, like Ireland, most challenged by high costs and distance from market. In short, the adoption of SCM excellence has become a necessary 'chain reaction' to increasing competitive pressure for Irish industry.

*'In industry after industry, from cars and clothing to computers and chemicals, executives have plucked this once dismal discipline (transport) off the loading dock and placed it at the top of the corporate agenda. Hard pressed to knock out competitors on quality and price, companies are trying to gain an edge through supply chain management – the ability to deliver the right stuff in the right amount at the right time'.*

Fortune Magazine

In recognition of the key role of supply chain management in the creation of competitive advantage for companies located in Ireland, the Irish Government established the National Institute for Transport and Logistics (NITL) in 1998 as a centre of excellence with the support from the European Union. This was later reaffirmed by the National Development Plan with the NITL then reporting to Enterprise Ireland managing NITL's SCM programme on behalf of the Irish Government. An overview of the work done to date by the Institute is published at the rear of this report.

A stark analysis of the state of Irish competitiveness was presented recently in the eighth Annual Competitiveness Report (2005) viz 'The NCC believes that the crucial challenge for Ireland is to put the policies in place now that will develop the conditions necessary to drive productivity growth in the coming decades. It is in many of these policy areas – such as the level of investment in R&D, competition policy, and the usage of ICT, where Ireland's performance is relatively weak, and where the NCC believes the focus of government policy should now be put. We also need to sustain investment and policy attention at all levels of education and training.'

An Taoiseach, Bertie Ahern TD, added a reality check in his foreword to the NCC Report: 'Increased competition both in Europe and globally makes it difficult to compete on the same basis as in the past. We need to protect our current strengths and develop new bases for competitive advantage. Ireland is no longer a low cost economy. In order to maintain and enhance competitiveness in the context of a higher cost economy, a greater focus on productivity across all sectors of the economy is essential. Important policy issues in the medium term include developing our innovation potential, the human capital of our country and our economic and technological infrastructure.'

The challenge set by the Taoiseach is to come up with strategic responses to competitiveness. As an export oriented island, Ireland must look to innovation that can offer real long-term sustainable solutions. This report makes the clear and compelling case for the urgent widespread adoption of World Class SCM among the key indigenous sectors of the Irish economy as one of the strategic solutions to competitiveness. As will be seen later in this study, Mr Ahern's words are particularly prescient as empirical evidence collected by NITL reveals a yawning gap in understanding among native Irish firms, both large and small, of what SCM best practice can contribute to the future success of their businesses.

NITL believes that part of its mission is to contribute to the search for solutions to Ireland's competitiveness challenge. This report presents a major piece of investigation, analysis and counsel by NITL, on an island wide basis, on how wider SCM practice can equip Ireland better for the challenges of EU enlargement and ever increasing market globalisation.

Nowhere is the impact of the loss of Ireland's competitiveness position more keenly felt than in regional Ireland, north and south, among small and medium size manufacturing enterprises. Recent high profile announcements of relocation and redundancies in western counties have served to highlight the vulnerability of such industries because of high costs and distance from market compared to more advantageous geographies.

#### 1.2 Irish Manufacturing

Given the very real threat to Irish manufacturing posed by the erosion of competitiveness, the NITL study on the adoption of World Class SCM is timely. It provides us with an informed context in which to challenge our collective view of manufacturing on the island. Indeed, it poses the need for a fundamental rethink of what Irish manufacturing might look like in the future.

The NITL study looks over the horizon to offer a new vision for the future of Irish manufacturing. It is one where, through the operation of sophisticated 'virtual supply chains', all the physical inputs and outputs of a manufacturing process could in fact happen off shore in order to optimise key locational advantages such as lower cost and proximity to market. Through the adoption of World Class SCM, and the use of broadband-based IT technologies controlling the speedy flow of key management information, Ireland would retain higher value functions such as R&D, design, marketing, sales and customer services while conducting the actual manufacturing processes at a remote location. We would also retain the value of those key aspects of the supply chain. Such a bold vision would offer Irish manufacturing an opportunity to reinvent itself and to survive.

While such an approach for any Irish manufacturing firm could, in the first instance, lead to lower numbers being employed, the rewards for excellence in World Class SCM will be greater market share and greatly increased scale – bringing with it the requirement for large numbers of highly skilled workers.

For example, the traditional textile factory – iconic of manufacturing failure in both parts of Ireland – would typically see a reduction from several hundred employees to a handful in the initial stages of re-engineering its supply chain. But with the benefits from SCM best practice yielding greater market share and increased scale of operation, this could lead to replacement of hundreds of outsourced textile factory jobs by many more people involved in higher value inputs into the 'virtual supply chain'.

Adoption of World Class SCM also offers Ireland the opportunity of becoming a global centre for supply chain excellence, creating higher value chain activities that could increase existing enterprise value and bring new services to the country. According to research from industrial analysts, IDC, the Western European market for supply chain management services will double from last year's \$9.5 billion (€9.8 billion) by 2006. However, the growth will be fuelled by small consecutive projects rather than the Big Bang approach as customers look for tighter control over projects and their budgets. Supply chain management includes consulting engagement, outsourcing services, systems integration of projects, and training and support services.<sup>1</sup>

### 1.3 Skilling up for SCM Excellence

In its recent assessment of the Irish economy, the OECD noted that 'the success in upgrading investment will depend on the availability of high-quality human capital'.

'While safeguarding cost competitiveness helps, for a high income country like Ireland to continue to grow there is no escaping a shift in the supply structure towards higher value added'.

Given the strategic solution to competitiveness that World Class SCM offers, the NITL study makes the case for the urgent development and harnessing of SCM skills on a more widespread basis, particularly among indigenous Irish industry – both large and small. The Institute's new vision for Ireland's manufacturing sector must be matched by the necessary human capital investment – the development of SCM skills both by industry itself and by the State. Harnessing of those skills, capturing new markets through ambitious marketing, and establishing international connections both physically and electronically, are vital elements of a newly engineered supply chain that can transform Irish manufacturing and prepare it for success.

Allied to the need for development of SCM skills is the enhancement of Ireland's connectivity – both physical and electronic. In order to face up the challenges and opportunities of a truly globalised marketplace, Ireland must continue to develop key communications infrastructure. In utilising IT technologies to manage the 'virtual supply chain', firms will need far greater and cheaper access to broadband telecommunications. Equally, those involved in higher function roles based in Ireland will require access by rapid, efficient and reliable transport – particularly air transport. And finally, the development of infrastructure and assets that will allow the efficient transport of freight off the Island of Ireland must continue to be a major priority.

### 1.4 Study of Current SCM Practice

As part of a major all Ireland study, NITL conducted a survey of 1073 firms between 2004 and 2005, predominately small and medium size enterprises, with 776 in the Republic of Ireland (ROI) and 297 in Northern Ireland (NI) to gain unique insights of current levels of awareness of SCM in the Island of Ireland and the potential impact SCM could have on the competitiveness of Irish business.

The Institute has prepared this study against the backdrop of the Enterprise Strategy Group's (ESG) report Ahead of the Curve: Ireland's Place in the Global Economy.

The objective of the NITL's SCM Barometer survey was to assess:

- Macro and sectoral challenges faced by Irish firms.
- Critical success factors for Irish firms.
- Current state of SCM practice among Irish firms.
- Competitiveness of Irish firms.

All as reported by Irish companies, North and South.

This report presents the findings of this investigation and analysis. A more detailed technical report, providing fuller information on methodology, instrumentation, data collection, is being published in parallel with the main report and is available on request from NITL.

While the report provides an empirical basis on which key conclusions can be drawn, the wider consequences of the survey led on to important recommendations set out in Section 3 of this publication. Furthermore Section 2 provides a comprehensive survey analysis and important findings.

### 1.5 Main Survey Findings

There are Irish firms operating supply chain management techniques at a truly international standard. The problem, clearly identified by the NITL survey, is that there are so few in that category.

- Less than 1 in 10 companies, usually large and often with foreign owners, are putting SCM techniques into effect in a completely sophisticated way.
- One in four businesses have taken on board SCM but have done so in a piecemeal manner. It is clear they are not fully aware of the scope of SCM and have not been able to integrate it into their everyday practice.
- Much more disturbingly the NITL research reveals that a majority of firms in Ireland, about two thirds, have only a passing understanding of what constitutes SCM. As a consequence they apply it in a haphazard way.

They are aware that they should be focused on customer service but they do not measure their performance in this area in a remotely scientific manner. The gaps in their understanding of SCM are matched by the gaps in their awareness of key costs.

- For example, forty per cent of firms in ROI do not know their transport costs.
- Seventy per cent of firms in NI do not know their transport costs.

Also worrying is the belief by many firms that commonly accepted elements of supply chain management have nothing to do with SCM.

### 1.6 Some Other Key Results

The measurement of anything, including cost is a fundamental element of management – as the old adage says: what gets measured gets managed. However, nearly six out of ten companies do not know their total supply chain costs.

Only one in twelve companies has a specialised SCM or logistics manager to date. Most of the firms pay lip service to the importance of SCM elements and objectives but do not put in place the organisational structure to support the implementation.

Despite the importance of forward planning, it seems that two out of five companies do not use forecasting. By and large where forecasting is used, it is seen as a secondary activity undertaken by sales and amended by accountants.

Respondents own on average 82% of warehousing space and rent 18%. The total warehousing cost is on average 5.1% of turnover. With regard to cost, it emerges that over 80% of companies do not formally measure warehousing at all in terms of key performance indicators.

One in five companies accepts their Information Technology systems are not well integrated across the company.

While generally speaking the approach to Supply Chain Management is similar North and South, there are some important differences worth remarking on. On average NI firms are less aware of some key SCM costs, have been slower to measure their SCM performance in a formal way and are more sceptical of the benefits of introducing the latest IT to enhance efficiency. This is partly explained by two linked factors. The average Northern Ireland company is smaller than its counterpart in the Republic. Secondly Northern Ireland has a smaller proportion of multinational enterprises.

Just as Northern Ireland lags behind the Republic in the application of SCM techniques, so too within the Republic, the Border-Midlands-West (BMW) region falls some way short of the rest of ROI. At least part of the difference in performance is due to differences in the industrial structure. Exports in the BMW region represent a smaller percentage of turnover (32%) than in the rest of the Republic of Ireland (37%).

### 1.7 Broader Conclusions

If there is much in the survey to concern decision-makers, at the same time they can be reassured that, broadly speaking, firms, North and South, know that SCM plays a crucially important role. That implies it should be a relatively straightforward matter to convince them to remedy the gaps in their knowledge and then to devise appropriate training and educational initiatives. NITL is well-placed to deliver the necessary programmes.

The challenge facing companies will vary greatly. For a small number of firms, the task will be to fine-tune what they already do. A third of companies are confronted with a much more wide-ranging review of their activities but at least they probably have some understanding of what's required and can reasonably easily learn what they have to.

There is no point however in underestimating the formidable task facing most companies in Ireland. Poorly informed about key aspects of their own businesses, lacking SCM know-how, they are not well placed to respond to rapid changes in the market. No firm that exports and those others exposed to import penetration can be insulated from the consequences of their own inefficiencies.

It is not too late, however, for firms to take on board the advantages conferred by SCM. They need to act quickly. What those in a position of influence must do is to encourage the adoption of sound SCM principles, which if applied vigorously and imaginatively, can help Irish firms take advantage of globalisation and safeguard them from its threats. Conclusions and recommendations about how to remedy the gaps in SCM adoption are set out comprehensively in Sections 2 and 3.

### 1.8 Important Footnotes

In line with the policies of the Irish and UK governments to encourage increased economic convergence between the two parts of the Island of Ireland, NITL saw the need for an investigation and analysis that mirrored that reality. Accordingly, the study, and the survey underpinning it, has been conducted on an Island of Ireland basis. Where significant difference occurred in the results of analysis between the Republic of Ireland and Northern Ireland, those realities are commented on. Where commonality of experiences or outcomes occurred, analysis is presented without unnecessary differentiation. For ease of reference throughout, the acronyms ROI and NI are used to denote the two jurisdictions.

A more detailed technical report, providing fuller information on methodology, instrumentation, data collection, is being published in parallel with the main report and is available on request from NITL.

<sup>1</sup>

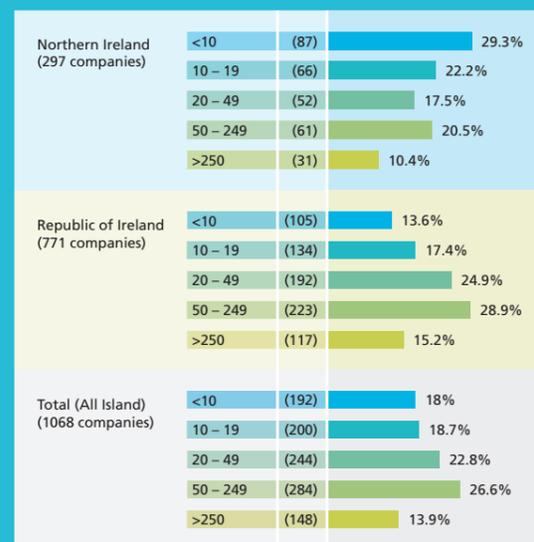
OECD (2003), available at: <http://www.oecd.org/dataoecd/27/62/2955735.pdf>

## Section 2

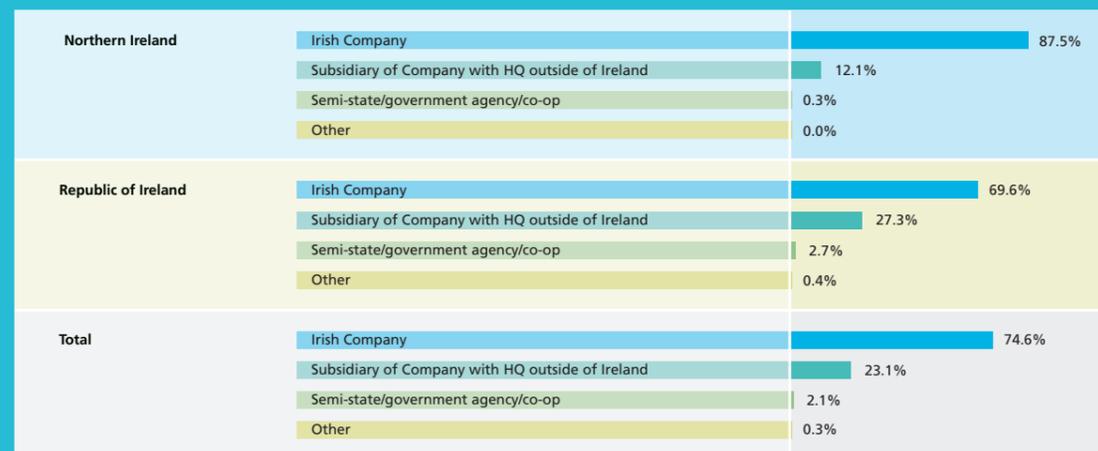
### SCM Barometer Survey

#### 2.1 Survey Background

**Figure 1**  
Company size of NITL SCM Barometer sample  
by number of employees Source: NITL, SCM Barometer 2005



**Figure 2**  
Company ownership of respondents Source: NITL, SCM Barometer 2005



NITL's SCM Barometer sets out a clear analysis of where SCM best practice currently sits in relation to Irish enterprise and makes the case for its further deployment in order to tackle Ireland's increasingly significant competitiveness challenge.

The survey was carried out on behalf of NITL by MORI, the internationally respected survey organisation, to certified market research standards.

A total of 1073 of companies participated in the survey, with 776 responses coming from companies based in the Republic of Ireland (ROI), with approximately 38% of companies located in the greater Dublin area and 22% in the Border-Midlands-West (BMW) region, and 297 responses were obtained from companies located in Northern Ireland (NI).

2

Forfás measures the small business sector by taking three categories of 0–9 employees, 10–19 and 20–49.

3

This group was established by the Minister for Enterprise, Trade and Employment to review national enterprise strategy. The group reported in July 2004 (ESG, 2004).

4

Forfás (1998), 'Annual Competitiveness Report', available at: <http://www.forfas.ie/ncc/reports/ncc/sme.htm>

5

The Central Statistics Office in the Republic of Ireland confirms that 87% of enterprises were Irish-owned and 13% foreign-owned in 2003. See <http://www.cso.ie/publications/IT/ictireland/june2003.pdf>

#### 2.1.1 Competitiveness of Irish Firms –

##### The Need for a SCM Barometer Measurement

Excellence in Supply Chain Management is an essential component in the island of Ireland's enterprise toolbox if recent economic successes are to be repeated and sustained. Excellence in SCM can offset the physical disadvantage posed by Ireland's geographic location by securing savings elsewhere in the wider supply chain.

This need for excellence in logistics and SCM in companies located on the Island of Ireland was the reason NITL undertook a comprehensive survey in the second half of 2004 with the objectives of (i) identifying the logistics and SCM challenges faced by companies operating here, (ii) assessing their capabilities to address these challenges, (iii) identifying any gaps in the capabilities and, (iv) recommending interventions to fill the gaps.

The survey includes an investigation of (i) SCM awareness and integration of SCM activities in Irish firms, (ii) organisational structure and SCM, and (iii) individual SCM activities. For context, it also included information on general company profile and the importance of SCM to companies' strategic development and competitiveness.

This analysis, entitled 'NITL's SCM Barometer', is intended to give policy makers and industry representatives unique insights and a highly focused analysis of the current state of SCM practice in Irish enterprise.

The objective of the NITL's SCM Barometer survey was to assess:

- Macro and sectoral challenges faced by Irish firms
- Critical success factors for Irish firms
- Current state of SCM practice among Irish firms
- Competitiveness of Irish Firms

#### 2.1.2 Company Profile

The sample is broadly representative of the population of Irish companies by firm size, ownership, sector and strategic classification.

#### 2.1.3 Company Size

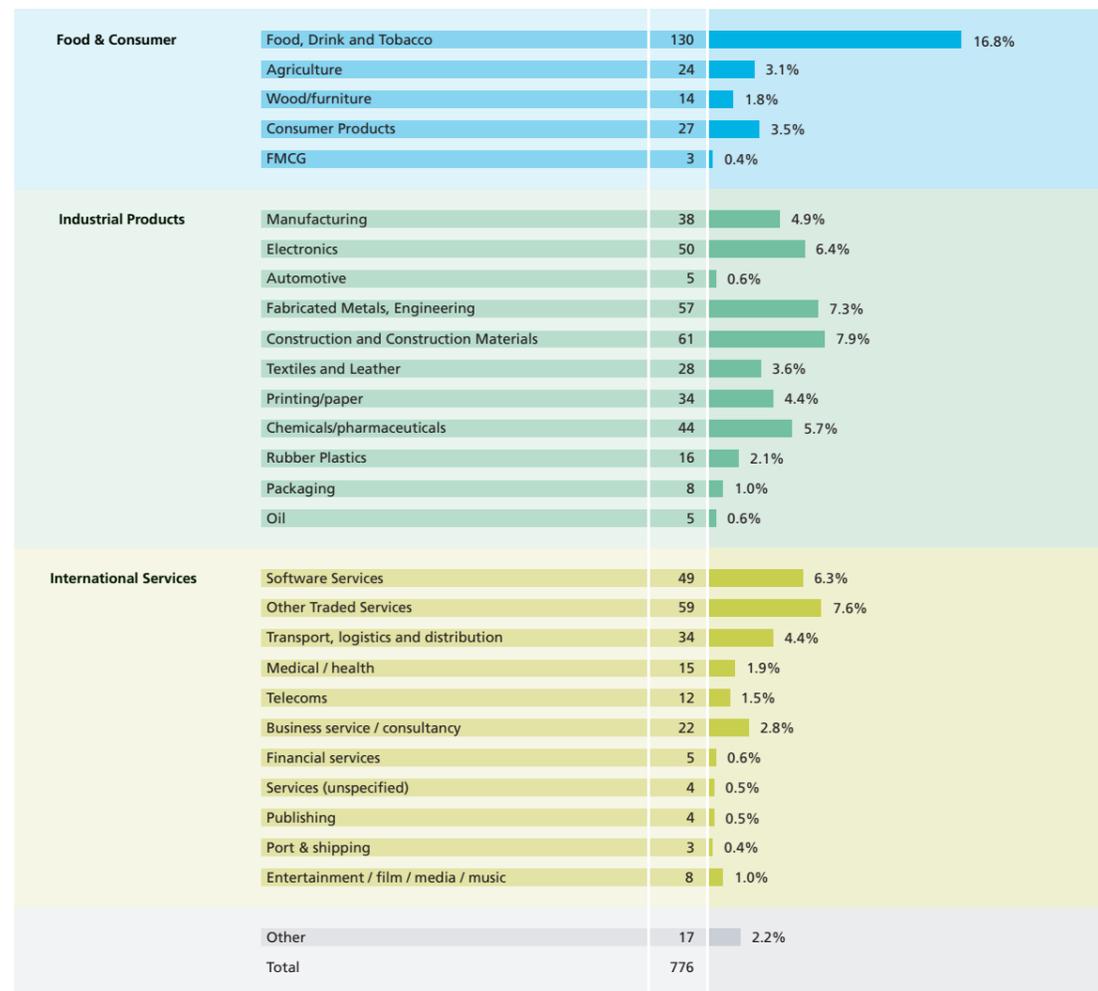
A majority of participants were SMEs (Figure 1)<sup>2</sup>, reflecting the profile of industry in Ireland and Europe generally, as documented in a number of recent reports. For example, the Enterprise Strategy Group's<sup>3</sup> recently published report 'Ahead of the Curve, Ireland's Place in the Global Economy' (ESG, 2004) confirms that the vast majority of businesses in Ireland are small and medium sized enterprises. Also, according to the European Union, 93% of all European enterprises have less than 10 employees. Forfás confirms that the performance of SMEs is of great significance, given the contribution of small business to economic growth and job creation.<sup>4</sup> SMEs make up at least 95% of all trading entities and employ over 80% of the workforce in Ireland. Based on estimates from the Revenue Commissioners, there are approximately 250,000 businesses in the Republic of Ireland. While there are no precise figures available, it is estimated that approximately 100,000 are single-person businesses or partnerships that are run solely by their proprietors and have no employees.

#### 2.1.4 Company Ownership

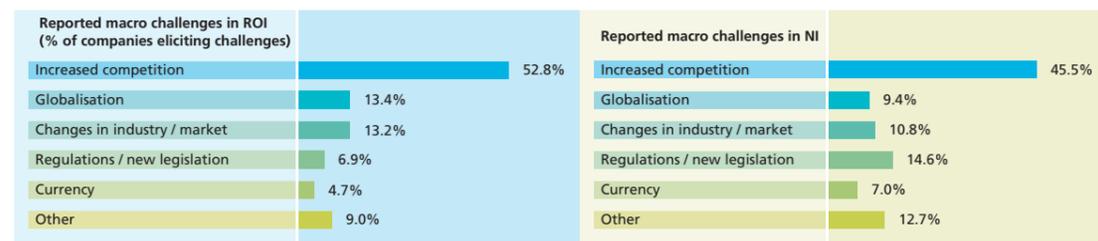
75% of the respondents were indigenous companies (70% ROI; 88% NI) and 23% were subsidiary companies of multinationals with the headquarters outside of the Island of Ireland (27% ROI; 12% NI) (Figure 2).<sup>5</sup>

While the majority of companies on the Island of Ireland may be SMEs, according to 'Ahead of the Curve' (ESG, 2004), foreign-owned companies still play a particularly significant role in the ROI economy, exporting approximately 95% of their output.

**Figure 3**  
Industry Sectors of SCM Barometer sample Source: NITL, SCM Barometer 2005



**Figure 4**  
Reported external and bigger macro supply chain challenges Source: NITL, SCM Barometer 2005



### 2.1.5 Company Sector

A broad range of companies from a variety of industry sectors participated in the survey (Figure 3). The food and consumer sector represents 25% (26% ROI; 25% NI) of the total sample, industrial products represent 47% (45% ROI; 55% NI), and international services 25% (28% ROI; 19% NI).

The importance of the food / agriculture / consumer sector has a long history and tradition in Ireland North and South. However, the Island of Ireland has shifted its dependence more away from manufacturing and towards services. 'Ahead of the Curve' summarised the key factors (ESG, 2004), stating that internationally traded services will be a growing source of high-skilled, knowledge-intensive jobs and competitive advantage over the next decade. In 2002, 'exports' of Irish services (eg. financial, software, contact centres, shared services) grew faster in the Republic of Ireland than in any other of the top 30 exporters in the world, propelling the Republic to the top of the global league table of services 'exporters' in per capita terms, from third place in 2001. In absolute terms, the ROI became the 18th largest exporter of services in 2002 (up from 21st place in 2001), a global ranking that is now higher than its ranking for merchandise goods (19th).

### 2.1.6 International Dimension

The ROI economy with its boost from the Celtic Tiger phenomenon is more export-oriented than is the case among NI firms. The average percentage of turnover from export by NI respondents is 29% in comparison to 34% of ROI firms. As one of the most open economies in the world, this export orientation means that logistics and SCM issues are central to the success of Irish companies. However, the openness of the ROI's economy also suggests that the country's competitiveness performance is highly sensitive to global economic developments.

The majority of supply chain partners for both ROI and NI companies are in Ireland and elsewhere in the EU (over 70% in both cases). According to the survey data, the ROI economy tends to have greater geographical reach and a greater export orientation with bigger markets globally than NI. NI companies are more dependent upon markets in the UK. For example, 21% of ROI firms export to the United States of America in comparison to 13% of NI companies.

'Ahead of the Curve' (ESG, 2004), on the other hand, points out that there was some poor export performance for a majority of indigenous companies, which is partly hidden by the exceptional performance of some individual companies that do demonstrate world-class capability.

This overall background suggests nonetheless that there have been substantial increases in the intensity and extensiveness of international economic inter-dependency and integration. External factors such as globalisation or regulatory issues are, therefore, key drivers of the need for effective and efficient supply chain management.

### 2.1.7 Supply Chain Challenges

The Irish business environment, and the wider economic landscape, is changing at a faster rate than at any time in recent history. As demonstrated in Figure 4, the Island of Ireland is not immune from the pressures created by globalisation and internationalisation of business with the attendant trends towards outsourcing and resulting local job losses in traditional sectors of manufacturing. Thus increased competition, globalisation and changes in industries and markets are perceived as the most important external challenges (Figure 4).

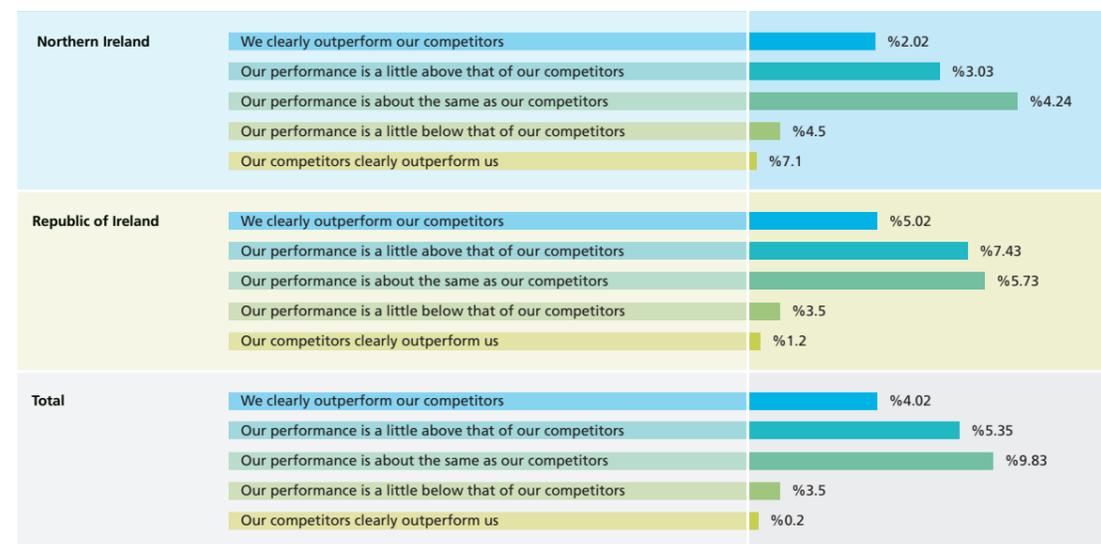
The Island of Ireland faces more intense competition than it did, often from countries which are lower cost rivals that are becoming equally adept at attracting foreign direct investment, investing in education and encouraging indigenous industries. With increasing international competitive pressures, sustaining future levels of growth and prosperity will represent a greater challenge than before. This is particularly the case for smaller firms and indigenous business.

The cost of doing business in Ireland has risen significantly in recent years and is continuing to erode the relative competitiveness of the goods and services sectors, and to reduce the attractiveness for new foreign direct investment (ESG, 2004). These trends, however, also represent a real opportunity for the Island of Ireland to increase wealth if it and its businesses can equip themselves with the necessary skills and tools to meet the competitive threats, as well as realise the opportunities afforded by increasing internationalisation and globalisation of business and the attendant processes which go with it. For example, customer service is regarded as critical by almost two thirds of surveyed companies. It is ranked as the number one critical success factor being regarded as more critical than product quality, product development/innovation or price competitiveness. This highlights the need for improved SCM capability. Companies need to identify the precise areas where they have, or can build, distinctive strengths that will enable them to compete effectively.

One of the necessary skills will be the ability to manage increasingly complex supply chains that will determine the success of Irish business and wealth creation in the country. Significant trends in Supply Chain Management affecting modern business are:

- Globalisation of supply chains
- Core Competencies and Vertical disintegration
- SCM as an enabler in business strategy differentiation

**Figure 5**  
Reported perception of company performance Source: NITL, SCM Barometer 2005.  
(% of companies eliciting company performance)



**2.1.8 Globalisation of Supply Chains**

Global sourcing of raw materials and other inputs will inevitably continue and quicken as the economic and business environment becomes ever more international. This evolution, made possible by the reduction of barriers to the movement of capital, goods, services, people and information internationally, has also made access to lower cost manufacturing world-wide possible. All of this requires responses from business logistics and distribution strategies. In short, economic globalisation has gone hand in hand with the emergence of complex international and global supply chain architectures.

**2.1.9 Core Competencies and Vertical Disintegration (Outsourcing)**

Companies are increasingly focusing on what they regard as their core activities or competencies. The corollary of this is that activities regarded as ‘non-core’ are being outsourced. Key supply chain activities such as transportation, warehousing, manufacturing, and even procurement are increasingly being outsourced to third-party organisations. Outsourcing reflects a move away from the traditional model of ‘control through ownership’ towards business models, which are based on management, and control through effective supply chain relationship management. In short, as the focus has shifted to Core Competencies, and with it, Vertical Disintegration, so supply chain architectures have become more virtual. The traditional, fully vertically integrated business models are being replaced by contemporary, fully virtually integrated approaches.

**2.1.10 SCM – an Enabler in Business Strategy Differentiation**

Irish firms today either pursue a cost leadership strategy (44%) or a differentiation strategy (55%). SCM is an enabler of business strategy differentiation and cost leadership: Because the supply chain accounts for such a significant percentage of total cost, change to efficient SCM can have a major impact through cost leadership. Similarly with product quality a given for customers, and price increasingly subject to competitive downward pressure, companies are using customer service, the output of the SCM process, as a market differentiator.

**2.1.11 Company Performance**

Given the impact SCM can have on differentiation or cost leadership, respondents were further asked to assess their perceived competitive position (Figure 5). Over half of companies on the Island of Ireland have an optimistic view of their competitive position with 54% feeling they outperform their competitors (ROI = 55%; NI = 51%).

Successful companies depend on effective SCM as an integral part of their strategies (as demonstrated in chapter 2). Competitiveness at the macro level can be enhanced by effective implementation of SCM at the firm or micro level.

**2.1.12 Characteristics of SCM Excellence**

Given this background, what are the characteristics in evidence in companies that might be regarded as world class? ‘World Class’ in this context means: companies that have been successful in tough, competitive international markets over a sustained period of time. While there are many characteristics of SCM excellence, NITL’s experience and research suggests they can be summarised under three main headings:

- Integration of supply chain activities and information because many supply chain non-value adding activities are caused by fragmented supply chain configurations
- SCM a senior management function because SCM is a strategic activity
- Establishment and measurement of supply chain key performance indicators (KPIs) because what gets measured gets done!

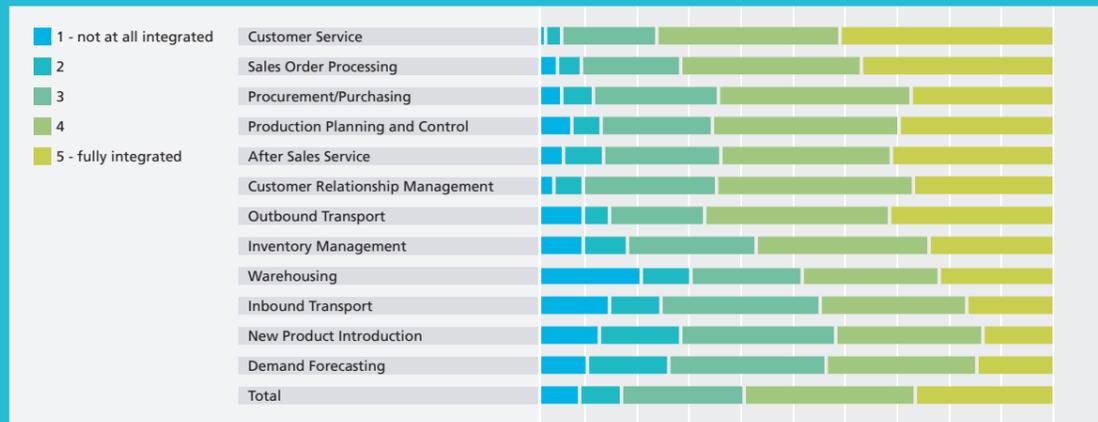
The pyramid of competitiveness highlights how excellence in these three SCM elements at the micro level can improve the performance of Irish firms at the macro level.

**Pyramid of Competitiveness**

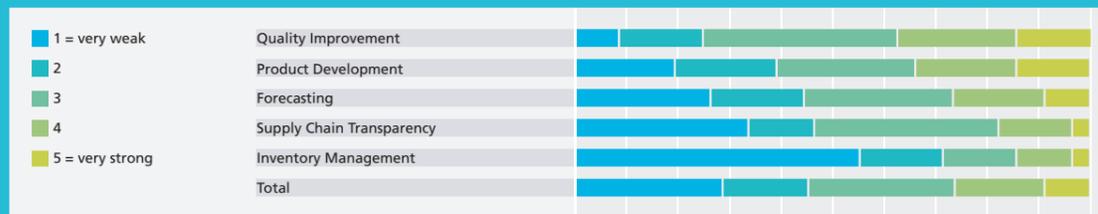


Therefore, the implementation of these three SCM excellence elements among Irish firms and their contribution to the overall competitiveness is assessed below.

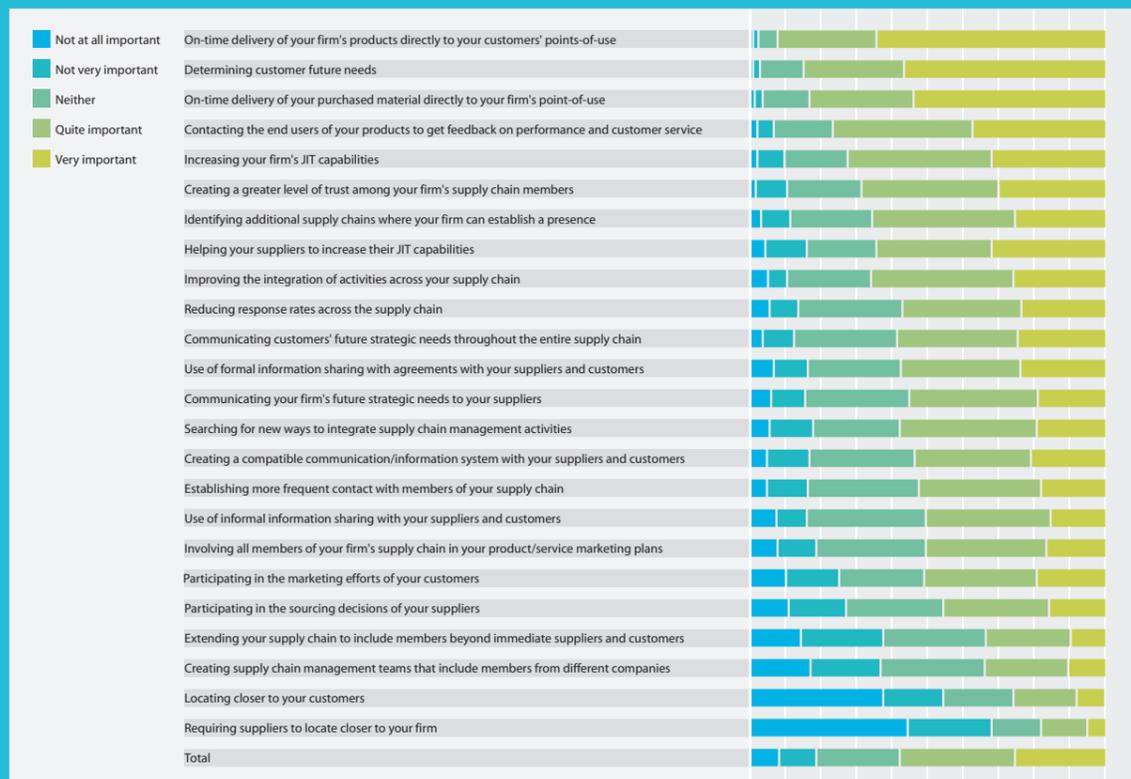
**Figure 6**  
Perceived integration of supply chain activities  
(% of ROI companies reporting integration of SCM elements)



**Figure 7**  
Reported extent of customer involvement in supply chain activities  
(% of ROI companies reporting extent of customer involvement in SCM activities)



**Figure 8**  
Reported agreement with statements regarding the importance of adopting supply chain management practices  
Source: NITL, SCM Barometer 2005  
(% of ROI companies reporting adoption of SCM practices)



## Section 2 SCM Barometer Survey 2.2 SCM Excellence

### 2.2.1. The Pyramid of Competitiveness: The Contribution of SCM Awareness and Integration among Irish Firms

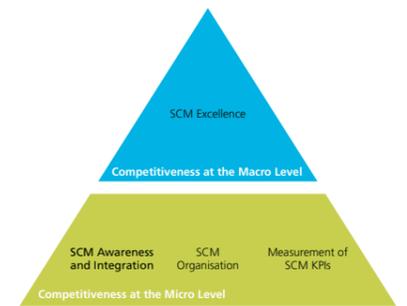
In a bid to gauge just how aware Irish firms are of SCM and how well they integrate its component parts into a coherent whole, respondents were asked to assess the importance of specific SCM factors. High profile or upfront elements such as customer service, customer relationship management, after sales service or sales order processing were ranked most highly by companies both North and South. However, functions such as warehousing or inbound transport scored relatively less well.

Irish firms also report a relatively low level of integration in certain supply chain activities (Figure 6). It is worth noting that these are the activities, which firms regard as being of less importance.

While companies regard their upfront supply chain activities as well integrated, there is scope to link up better warehousing, inbound transport, new product introduction and demand forecasting. Consistent with these findings, the survey shows that firms believe these activities to be not as effective as other elements of their SCM strategy. This result may reflect the large amount of outsourcing of activities such as warehousing and transport, which has taken place in recent years.

The lower level of importance, integration and effectiveness accorded to inventory management and demand forecasting may be explained by the fact that neither customers nor suppliers are involved in these areas and therefore do not spur companies to achieve better practice (Figure 7). A fundamental principle of SCM is that firms should work with suppliers and customers the full length of the supply chain.

Suppliers and customers are less involved in forecasting, supply chain transparency and inventory management, which is consistent among ROI and NI companies. There is clearly room to improve collaboration in planning and control of supply chains. This contention is also supported by the findings which emerged when firms were asked which kind of supply chain management practices should be considered for adoption among Irish firms (Figure 8).



A wide range of issues are deemed to be important by companies both South and North. These include

- Customer service (eg. on time delivery, although this is only one element of customer service)
- Customer relationship management
- Partnerships (eg. creating a greater level of trust among supply chain members)
- Just In Time delivery (JIT)
- Communication (eg. of future strategic needs to suppliers)
- Integration

The ranking of SCM practices indicated by the survey result shown in Figure 8 tells us something of significance.

Conventional or traditional SCM activities such as JIT or on-time deliveries are rated as much more important than more recent additions to the SCM toolbox such as information sharing with suppliers and customers. What is perhaps striking is that very few of these new measures are actually deemed to be definitely unimportant which perhaps suggest that attitudes could be changed by education and training.

Involving suppliers and customers is one way to reduce costs, improve quality, speed up development of new products and gain access to innovative technologies, all of which can help firms capture market share (Handfield et al, 1999).<sup>6</sup>

Advanced supply chain management draws in all the players involved in the lengthy game of satisfying the consumer and encourages collaboration to the mutual benefit of all. This implies a change in mindset for firms with a more traditional approach, which realistically will only come about if education in new techniques and attitudes is made available right across the island.

Who is responsible within the company for SCM tells one a lot about the importance it is accorded within the firm. In the past it has been treated as a function more appropriately handled lower down the hierarchy. Those attitudes are now changing as this former Cinderella type activity receives the recognition it deserves.

<sup>6</sup> Handfield RB, Ragatz GL, Petersen KJ and Monczka RM (1999), 'Involving Suppliers in New Product Development', California Management Review, 42(1), pp. 59–82.

Figure 9

Reported responsibility for supply chain management Source: NITL, SCM Barometer 2005  
(% of companies reporting SCM responsibility)

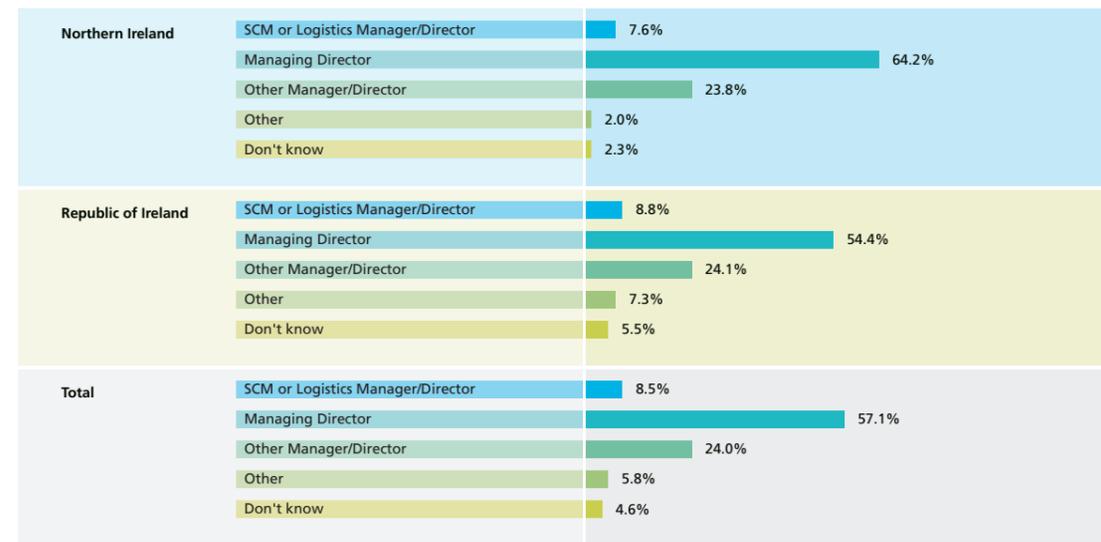


Figure 10: What is included in the supply chain costs? Source: NITL, SCM Barometer 2005  
(% of companies eliciting supply chain cost elements)

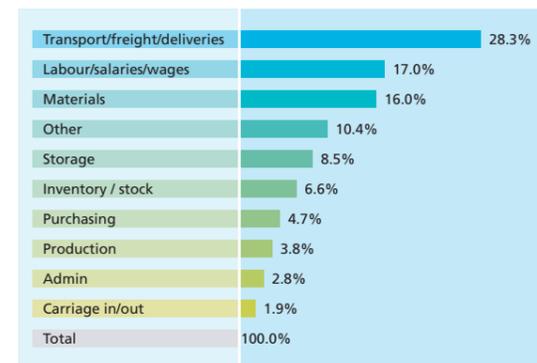


Figure 11: Use of key performance indicators for supply chain management  
Source: NITL, SCM Barometer 2005 (% of ROI companies using supply chain KPIs)

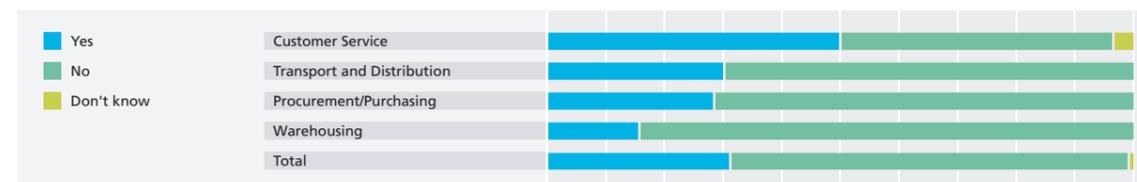
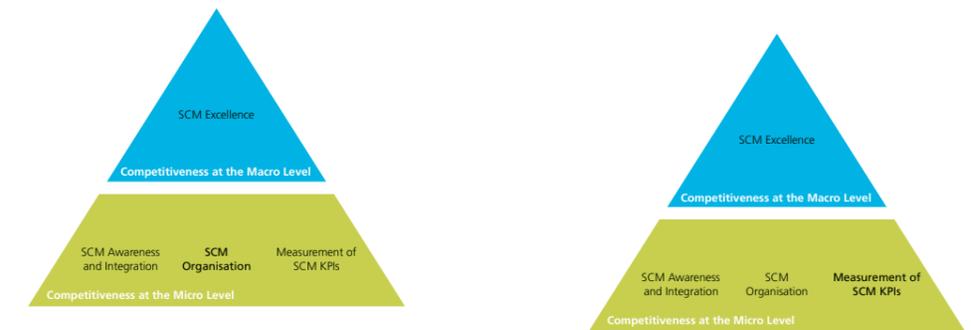


Figure 12: Main indicators used for customer service Source: NITL, SCM Barometer 2005  
(% of companies eliciting indicators for customer service)



### 2.2.2 The Pyramid of Competitiveness: The Contribution of SCM Organisation - A Senior Management Function?

The survey accordingly examined whether SCM is treated as a senior management function. The literature suggests it should be looked after at board level (Quayle, 2003).<sup>7</sup> Top management support can foster the effectiveness and efficiency of SCM activities. Therefore, it was asked – who was responsible for SCM activities in the organisation? Figure 9 illustrates that only 8.5% of companies have a specialised SCM or logistics manager to date. Most of the firms pay lip service to the importance of SCM elements and objectives but do not put in place the organisation structure to support the implementation.

At the overall or strategic level, responsibility for SCM rests typically with the Managing Director. This finding however may not reflect much more than the basic assumption that, for any important activity, the buck stops with the top person. When one drills down further and asks who is in charge of particular SCM functions, responsibility is spread much more widely, falling for example under the wing of sales and administration departments for example. More worryingly in a number of areas, a significant proportion, up to 34%, in the case of warehousing, felt the activity not to be an SCM issue at all. Clearly, there is some scope to spread the word about how SCM extends into many corners of business life.

One of the key lessons that has been learned by close examination of SCM which has been practised at the highest level is that management must not restrict its involvement to the formulation of strategy. There is a clear need for engagement in all key aspects of SCM. In particular top management needs to be directly involved in the process of ensuring that the targets that have been set are being met.

### 2.2.3 The Pyramid of Competitiveness: The Contribution of Establishment and Measurement of SCM Key Performance Indicators for Benchmarking

The measurement of anything, including cost is a fundamental element of management – as the old adage says: what gets measured gets managed. However, 58% of companies do not know their total supply chain costs (ROI = 59%; NI = 57%)!

It is obvious, but clearly not to everyone, that firms must establish their supply chain costs to help them maximise their competitiveness and profitability. Of those that have made the calculation, respondents said supply chain costs were on average 34% of turnover (ROI = 34%; NI = 33%) and 40% of total costs (ROI = 38%; NI = 43%). These stark figures show, in a way that nothing else can, how important effective and efficient supply chain management is.

Given then the importance of SCM costs, effective management of any SCM function (see Figure 10) depends, therefore, on putting in place realistic key performance indicators (KPIs) to enable firms to measure in a consistent way across time how they are performing. It would be expected in best practice companies to have KPIs in place for all of the key SCM elements.

Thus, respondents were asked to assess whether they had clearly established KPIs in place for the SCM elements. Figure 11 reveals that Irish companies do not make great use of KPIs to evaluate the performance of their supply chains.

While most companies realise the importance of SCM, few of them have clearly defined SCM KPIs. Each SCM function is analysed in more detail in the following sections.

### 2.2.4 Contribution of Customer Service to SCM Performance

Customer service sets the specification for the design of an effective supply chain. The report 'Ahead of the Curve' (ESG, 2004) confirms that there has been a gradual shift in the way customers and suppliers relate to one another. In the past, the relationship was often driven by the supply side – the supplier made standard products available at a standard price. In the supply-driven model, commercial success depended on efficient, standardised operational processes for producing and supplying uniform products at the lowest possible cost. Ireland thrived as a cost-effective and efficient base for this type of production. However, it is precisely this kind of operation that can and increasingly is being done more cost-effectively in the lower-cost developing economies. Therefore, the relationship is now increasingly demand-driven – the customer defines the problem and the supplier delivers a solution.

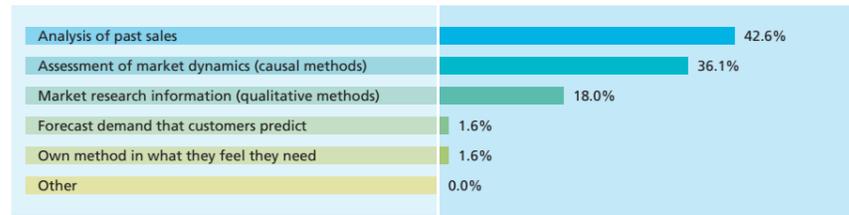
Fifty seven per cent however of companies do not have key performance indicators for customer service to date, with Northern Ireland lagging well behind the Republic (ROI = 46%; NI = 74%). Furthermore, Irish firms measure customer service in a limited way and in any case mostly have a very narrow interpretation of what constitutes such service.

As figure 12 shows, the most popular yardstick is the extent to which deliveries are made on time. Customer satisfaction/complaints comes second with all other measures way down the field in terms of frequency of use. A more sophisticated approach would be to see customer service comprising such elements as on time deliveries, length and consistency of the order cycle time, order fill etc. This more blinkered view of customer service implies a lack of understanding of its key role both as helping to specify logistics systems and its role in the marketing mix.

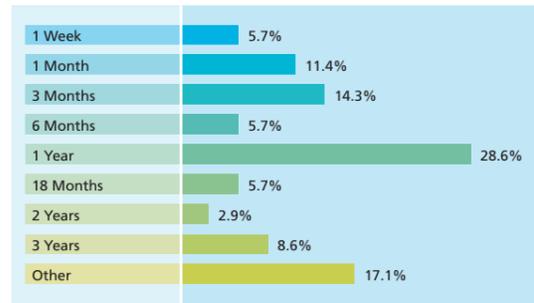
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Quayle, M. (2003), A study of supply chain management practice in UK industrial SMEs. *Journal of Supply Chain Management*, 8(1), pp. 79–86.

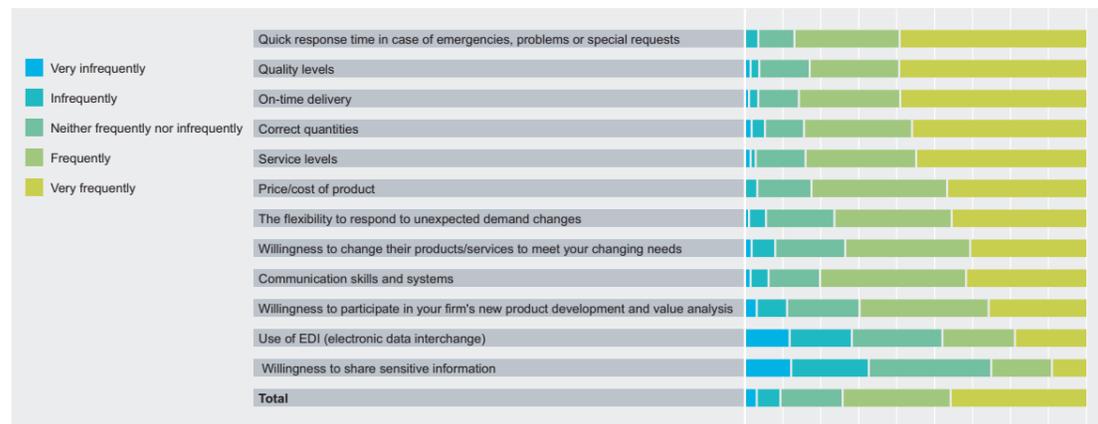
**Figure 13**  
Approaches used for forecasting Source: NITL, SCM Barometer 2005  
(forecasting techniques used by ROI companies)



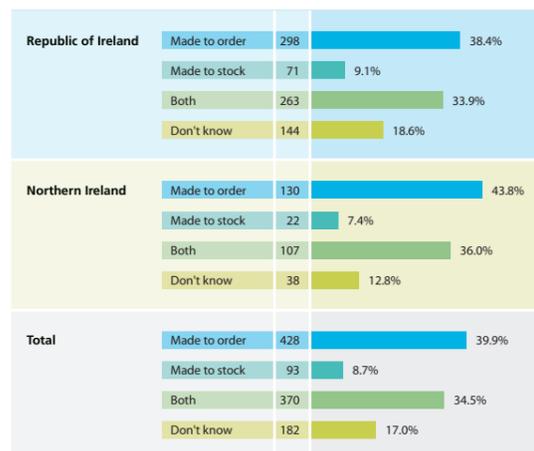
**Figure 14**  
Time horizon of forecasts Source: NITL, SCM Barometer 2005  
(% of ROI companies reporting the time horizon of forecasts)



**Figure 15**  
Reported frequency of measures with which key suppliers are evaluated Source: NITL, SCM Barometer 2005  
(% of ROI companies reporting the frequency of suppliers evaluation measures)



**Figure 16**  
Manufacturing strategy employed Source: NITL, SCM Barometer 2005  
(% of companies reporting manufacturing strategy)



If service is to be improved companies must adopt a much wider mix of indicators by which to measure their performance. However, it is worth remembering there is no point in boosting the level of service beyond that which the customer wants and is prepared to pay for. There is always the danger of squandering money over-servicing customers in certain ways (eg. length of order cycle time), while failing to meet their needs in other, more critical, ways (eg. consistency of order cycle time). The key is to recognise that the customer's needs are the starting point in the supply chain design process. In other words, a market driven customer service strategy – based on clearly understood customer requirements – sets the specification for integrated SCM.

**Chart 1: Customer service strategy**



It seems a short, straightforward step from understanding what your customers want today to what they will want tomorrow. However, it is far from being that simple. Customer needs change, often at a bewildering pace. That is why forecasting is so difficult. But however susceptible it is to error it is a necessary part of the SCM game. It can best be achieved by the adoption of the sensible and realistic KPIs.

**2.2.5 Adoption of Forecasting**

One might imagine that all firms would adopt some form of forecasting to help plan future activities. In fact 41% of companies do not use forecasting at all (ROI = 39%, NI = 44%). This is a disturbing finding because, while forecasts often prove wrong, they provide the only possible basis for planning. By and large where forecasting is used, it is seen as a secondary activity undertaken by sales and amended by accountants. Analysis of past sales is the most popular technique used by Irish firms to predict future demand (see Figure 13).

Pulling together different perspectives from along the supply chain will add to the richness and accuracy of forecasts of demand and result in better planning and management of capacity and inventory. However, collaborative forecasting involves two serious problems: with collaboration and with forecasting. Collaborative relationships are not developed at will. The chances of success are hugely increased where supply partners have already developed a long history of mutual trust. But for companies that have been able to craft the right relationships carefully, collaborating in forecasting – often as part of a broader programme – has yielded beneficial results. In addition sophisticated SCM integration can help improve the approaches used for forecasting and extend the time horizon.

If companies can achieve a reasonable degree of accuracy with their forecasts or at least an improvement on past practice that will clearly help them plan their procurement programmes better. However, not only does it have the potential to assist the company doing the purchasing, it can, if the forecasting results are shared, help their suppliers. Such an approach requires a new mindset. Indeed the quiet revolution being brought about by the introduction of more advanced SCM practices is causing a rethink across many areas of management including procurement.

**2.2.6 Contribution of Procurement / Purchasing to SCM Performance**

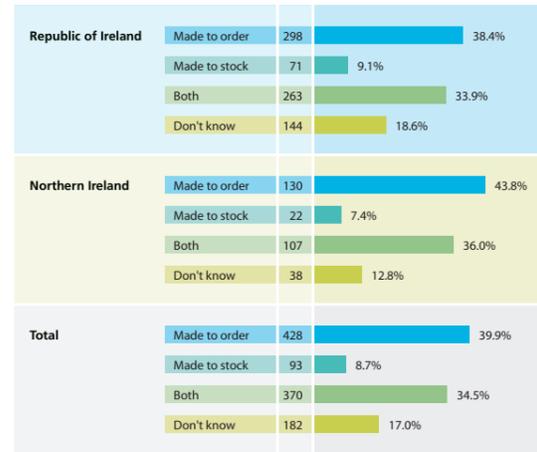
Procurement is a function, which traditionally was seen as confrontational in its approach. There was little belief there could be a win-win for both sides in the bargaining. However recognition of the need for good partnership with suppliers and regular review of supplier relationships is an indicator of good SCM practice, bringing mutual benefits to both parties.

40% of companies, however, do not use supplier evaluation. Clearly, this finding suggests room for improvement. How can procurement be integrated into supply chain management when suppliers are not regularly reviewed? Of those that do, they mainly evaluate suppliers in terms of quality levels, on-time deliveries, service levels and price/costs of product (see Figure 15).

Significantly 70% of ROI firms and 85% of NI companies do not formally measure procurement / purchasing at all in terms of key performance indicators. Similar proportions do not participate in supplier development programmes (ROI = 71%; NI = 78%). This finding suggests that the majority of purchases are still conducted in a rather arms-length way. To substantially improve SCM, a close collaboration and partnership approach among buyers and suppliers is required for strategic products. The argument for working together is further strengthened by the finding that a third of companies have reduced the number of firms supplying them (ROI = 32%; NI = 39%). The more one depends on a supplier, the greater the need for collaboration.

A constant theme of SCM theory is the interconnectedness of all the elements along the supply chain. Few are so intimately linked as purchasing and inventory. Poor exchange of information, a lack of transparency along the supply chain can create the so-called 'bullwhip effect', leading to inappropriate levels of inventory with the resulting loss of revenue and profits.

**Figure 16**  
Manufacturing strategy employed Source: NITL, SCM Barometer 2005  
(% of companies reporting manufacturing strategy)



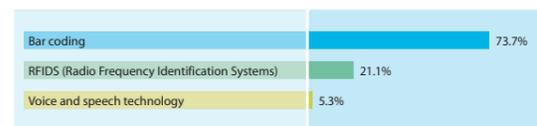
**Figure 17**  
Reported inventory turns per year Source: NITL, SCM Barometer 2005  
(Average number of inventory turns)

	Inventory turns per year in 2003	Inventory turns per year in 2002	Inventory turns per year in 2001
Average by firm	12.71	12.44	9.41

**Figure 18**  
Reported out-of-stock rates per year Source: NITL, SCM Barometer 2005  
(Average number of out-of-stock rates)

	Out-of-stock rates in 2003	Out-of-stock rates in 2002	Out-of-stock rates in 2001
Average by firm	819.73	722.34	611.30

**Figure 19**  
Technologies important with respect to warehousing Source: NITL, SCM Barometer 2005  
(% of companies reporting warehousing technologies)



**Figure 20**  
Average percentage (by volume) of goods by transport modes Source: NITL, SCM Barometer 2005

Mode	Percentage (by volume) of goods transported by ROI companies	Percentage (by volume) of goods transported by NI companies	Total percentage (by volume) of goods transported
Rail	0.7%	0.03%	0.4%
Road	75.2%	83.4%	78.3%
Air	3.1%	6.5%	4.4%
Sea	16.8%	10.2%	14.3%

**2.2.7 Contribution of Inventory Management to SCM Performance**

Inventory is the oil of the supply chain, allowing the various functions to operate freely and independently. However, inventory can also mask inefficiencies. Effective inventory management can produce significant savings but more importantly can expose previously hidden inefficiencies. Since inventory is related to what is made companies were asked what kind of manufacturing strategy they employ (Figure 16).

The manufacturing strategy is consistent among ROI and NI firms. The majority would employ a made to order or a hybrid strategy in order to avoid obsolete inventory. On average, 61% of stock is fast moving (ROI = 58%; NI = 64%) and 30% slow moving (ROI = 30%; NI = 29%). The inventory turn increased steadily over the last three years (Figure 17).

However, 50% of companies admitted holding obsolete inventory which represents a significant waste of scarce resources and indicates a weakness in inventory management. It can also point to the absence of true SCM elements. With SCM integration, the total flow of products can be optimised, and unwanted outcomes such as obsolete inventories can be avoided. On the other hand, the out-of-stock rates were quite substantial in the last three years (Figure 18).

Some inventory may be necessary to cope with the unpredictability of consumption. In addition, apparent excess stock can result from deliberate trade-off decisions between the costs of transportation and of stock-holding. Thus, the presence of some inventory in a supply chain may even be a positive sign of careful business management, rather than a signal of inefficiency. Just enough inventory tends to be the slogan of well-run firms, rather than zero inventory.

The respondents were further asked about the accuracy of their inventory figures. 18% of respondents do not trust the inventory numbers in the stock reports (ROI = 20%; NI = 17%). This is a perfect example where SCM can help companies save costs. Using information drawn from all along the supply chain managers can calculate just how much inventory should be held at each point in the network to achieve a specified service level for minimal cost, taking into account the uncertainties of supply, demand, and operations.

The other side of the coin from inventory management is warehousing. It has a significant cost associated with it. The NITL survey reveals that the more traditional firms are not approaching it in anywhere near an efficient way as best SCM practice would suggest.

**2.2.8 Implementation of Warehousing KPIs**

With property values and rentals rising, warehousing can be a hidden cost in the supply chain. Excellent companies will review their warehousing costs regularly and many will examine the option to outsource. Seventy per cent of respondents have warehousing space. Respondents own on average 82% of warehousing space and rent 18%. The total warehousing cost is on average 5.1% of turnover.

With regard to warehousing's importance as a cost, it is surprising that 82% of ROI firms and 88% of NI companies do not formally measure warehousing at all in terms of key performance indicators. When they do, their indicators are mainly based on availability, case count fill rate and picking rates. The most important technology in warehousing is still bar coding, with the adoption of RFIDS and voice and speech technology accelerating.

Warehousing is often the last physical link in the supply chain and so can have a direct impact on service. Effective warehouse management is an essential component of the supply chain. The findings suggest improvement potential among Irish firms.

When goods are moving to and from the warehouse, whether in company owned vehicles or those operated by external logistics companies, they are to a great extent dependent on the transport infrastructure of the country. The standard of these facilities is a matter outside the immediate control of private companies. Nevertheless it is important for firms to express their views and, most crucially, for governments to listen. What emerges from the NITL survey should disturb administrations on both sides of the border.

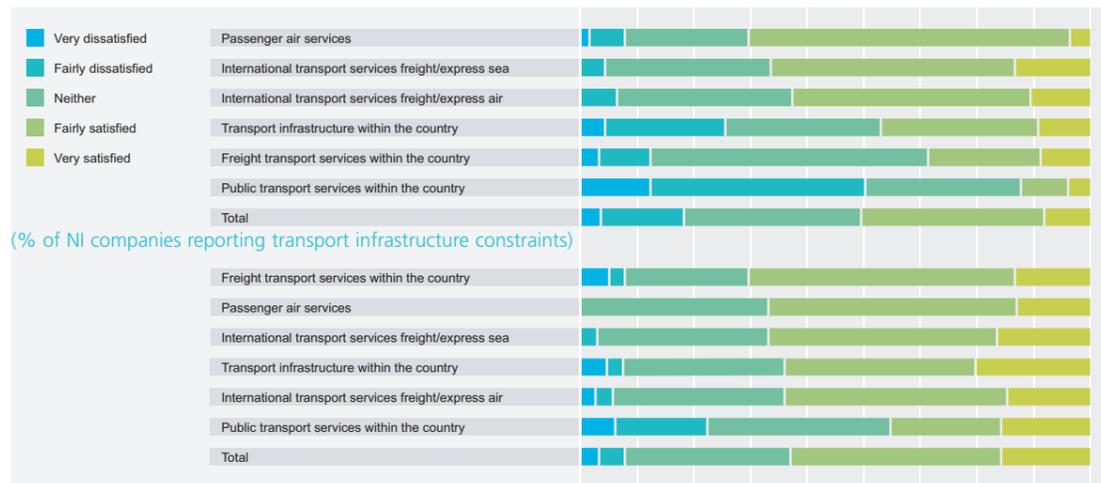
**2.2.9 Contribution of the Transport System to SCM Performance**

Transport infrastructure has been generally identified as an over-riding constraint of the continuing development of business in Ireland. According to the report 'Ahead of the Curve' (ESG, 2004), enterprises will thrive only if the physical infrastructure and communications networks are efficient and adequate for international trade. In a global economy, people, goods and information must be able to move from place to place quickly, reliably and efficiently. A recent World Economic Forum survey found that Ireland's infrastructure is poorly developed and inefficient relative to most other developed countries.

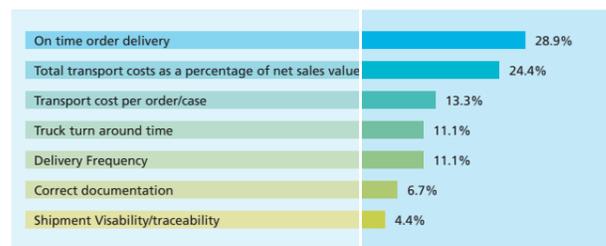
Most freight movements by volume are undertaken by road and sea, while rail services enjoy a negligible market share among Irish firms (Figure 20).

Air transport, however, attracts a growing and significant market for freight by value particularly among newer industries focusing on high value / low weight products attracted to Ireland in recent years.

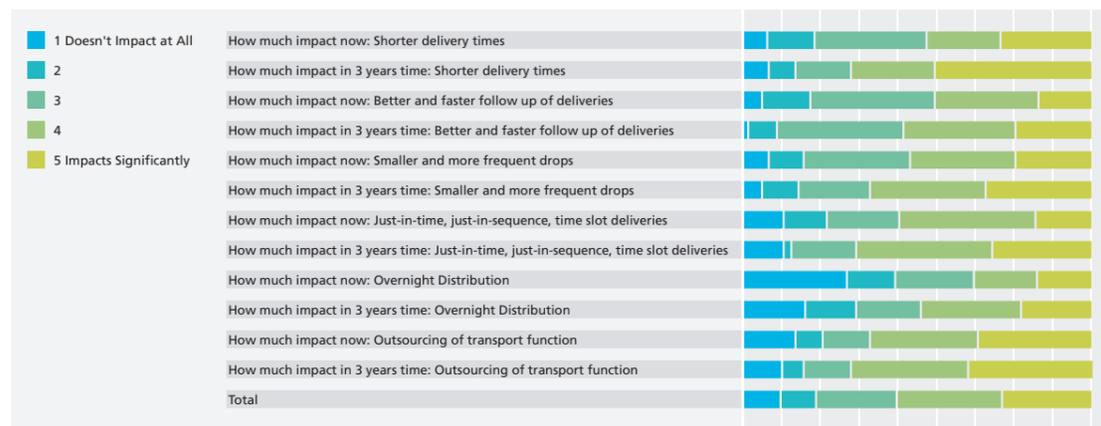
**Figure 21**  
Reported satisfaction with transport systems Source: NITL, SCM Barometer 2005  
(% of ROI companies reporting transport infrastructure constraints)



**Figure 22**  
Main KPIs used in transport and distribution Source: NITL, SCM Barometer 2005  
(% of companies reporting KPIs in transport and distribution)



**Figure 23**  
Impact on transportation needs now and in three years time Source: NITL, SCM Barometer 2005  
(% of ROI companies reporting transportation needs)



**Figure 24**  
Reported integration of IT systems Source: NITL, SCM Barometer 2005  
(% of ROI companies reporting integration of IT systems)



The survey was taken as an opportunity to gauge company views on how infrastructure assists or holds back Irish firms. 35% of companies said the transport infrastructure is constraining their business (ROI = 45%; NI = 19%). The reported problems mainly relate to costs and ensuring deliveries on time. This divergence and other North-South differences is linked to variations in the rate of growth in the two economies- high rates of economic growth almost inevitably puts pressure on existing infrastructure.

Respondents were further asked to indicate their satisfaction with the transport systems and infrastructure on the Island of Ireland (see Figure 21). The reported satisfaction with air carriers is relatively high in both ROI and NI firms, especially with the punctuality of the carriers and the fares. This is also confirmed by the National Competitiveness Council in 2004, where the quality of air transportation in the Republic of Ireland was ranked quite highly (Ireland 4th out of the 16 countries benchmarked).

While it appears that ROI companies are less satisfied than NI firms about freight and public transport services and the transport infrastructure, these findings should not be taken in isolation. Expectation levels could reflect the extent of trading relationships. Objective indicators would reaffirm this argument. Nevertheless, the results overall suggest that the Republic of Ireland needs to improve its transport systems and infrastructure. This is confirmed by Ireland being just ranked 15th out of 16 countries benchmarked in the report of the National Competitiveness Council in 2004.

Whatever the mode chosen, good SCM practice implies that the way it performs for a company has to be monitored by management in a consistent way. While the majority of survey respondents saw transport and distribution as a key element of SCM, the integration of KPIs and formal measurement of this supply chain function is again very low. Only 30% of ROI firms and 15% of NI companies employ KPIs for transport management. The main KPIs used are on time order deliveries and total transport costs as a percentage of net sales value (see Figure 22).

In an example of a North/South split, 59% of ROI firms know their transport costs in comparison to only 31% of NI firms. Transport costs are on average approx. 7% of turnover both North and South. The differences in use of KPIs and knowledge of transport costs may be attributed to variations in the extent of outsourcing as noted below.

A careful assessment of transport performance through KPIs will provide management with solid evidence as it debates the merits of retaining the transport function within the company or outsourcing it to third parties. As it considers this issue it needs to be remembered that a move to outsourcing is not without risk as the firm becomes more dependent on an external organisation over which it has not direct control.

Recent years have seen a big move toward the outsourcing of transport activities to third party logistics (3PL) and fourth party logistics (4PL) service providers. Survey respondents own on average 37% of transport (ROI = 22%; NI = 63%) and contract out 57% (ROI = 72%; NI = 32%). At a strategic level the desire to focus on core competencies meant that activities such as transportation which were regarded as non-core, had the potential to be outsourced. At an operational level, sometimes companies have become aware of third party organisations that could transport goods more cheaply, more speedily and with higher levels of customer service than in house operators. Respondents confirmed that outsourcing of transportation is going to accelerate in the next three years, along with just-in-time and overnight deliveries as well as shorter delivery times (see Figure 23).

ROI companies expect to be impacted more by shorter delivery times, smaller and more frequent drops and the outsourcing of the transport function than NI firms. However all firms need to be agile and innovative amidst increasing supply chain complexities and customer demands for shorter delivery lead-times. This is a classic case of where companies need to look to their SCM capabilities.

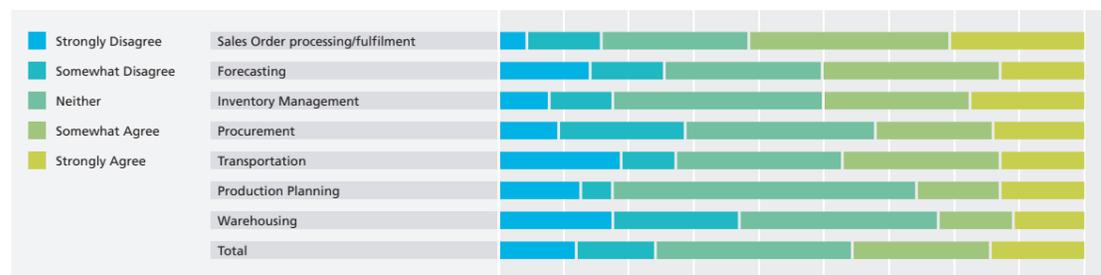
**2.2.10 Adoption of Supply Chain Information Technology**  
The more companies outsource, the more complex the management of their supply chain becomes and the greater the need for appropriate monitoring through information technology.

Supply chain management is based on the flow of information. Proper and integrated IT systems are essential constituents of a proper SCM function. According to the National Competitiveness Council (2004), a key input to competitiveness is the technological infrastructure, notably the information and communications infrastructure. The report 'Ahead of the Curve' (ESG, 2004) confirms that communications networks (e-Infrastructure) are essential for companies that trade internationally. In this context, communications need to be reliable, secure, fast and cost-competitive.

While the use of email is widespread among Irish firms, they hardly take advantage of tele conferencing. Contact by phone and email is in many cases employed on a daily basis to keep contact with supply chain partners. The survey further asked respondents to assess the level of information technology applied to the SCM activities in the organisations. One in five companies accepts their IT systems are not well integrated across the company (ROI = 25%; NI = 14%). A similar proportion (24%) say the same about the supply chain (ROI = 25%; NI = 22%).

To further explore the level of IT sophistication in the SCM environment, respondents were asked to assess the level of IT applied to the particular SCM function.

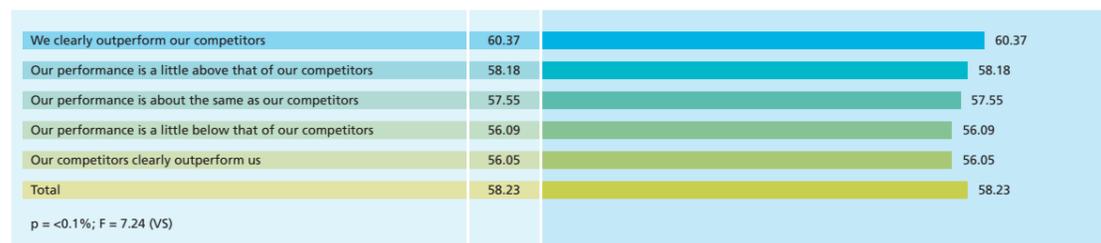
**Figure 25**  
Reported employment of latest system technology Source: NITL, SCM Barometer 2005  
(% of ROI companies reporting employment of latest system technology)



**Figure 26**  
SCM Excellence Index Source: NITL, SCM Barometer 2005



**Figure 27**  
Average SCM excellence score and overall company performance Source: NITL, SCM Barometer 2005



Just over a third of companies would not use the latest systems technology (ROI = 27%; NI = 51%). Overall, there is some improvement potential in particular for warehousing, production planning and transportation (see Figure 25).

If companies in Ireland are to enjoy the opportunities that SCM offers in creating competitive advantage, it is essential that IT is better applied to SCM.

The National Competitiveness Council (2004) reminds us that Ireland suffered economically in the industrial age by being peripheral from sources of raw materials and final markets. The lesson for today is clear enough. In the information age, it is primarily the availability of advanced IT networks that provides proximity and access to resources or in other words, puts Ireland on a level playing field with other economically advanced nations.<sup>8</sup> Ireland's ambitions of progressing towards a knowledge economy rely on advanced information and communication technologies.

All the many SCM techniques considered thus far provide a checklist by which the standard of practice within the country can be assessed. But in the interests of simplicity the search for quality can be considered under a small number of headings.

**2.2.11 SCM Excellence Index – How do Irish Firms Measure Up in Competitiveness?**

As discussed earlier, three elements are of critical importance for most companies in most sectors:

- Integration of supply chain activities and information because it pays to do so
- SCM a senior management function because SCM is a strategic activity
- Establishment and measurement of supply chain key performance indicators (KPIs) because what gets measured gets managed!



<sup>8</sup> National Competitiveness Council (2004), Annual Competitiveness Report.

Therefore, it is worth exploring SCM in an Irish context and the performance of companies in Ireland in relation to these issues:

- How Do Irish Firms Measure Up?

NITL's SCM Barometer survey yields real insight into the answer to this question. A key element of the survey analysis involved definition of a composite index of company SCM performance designated 'supply chain practice'. The raw index with values in the range 6–90 is composed of scores relating to:

- Extent of integration of supply chain functions (such as customer service) and data
- Whether SCM is viewed as a senior management function
- Measurement of delivery performance KPIs

Each of the three sections was given a maximum of 30 points. The details and breakdown of scoring, which was applied to the individual sections, is provided in the technical document.

The distribution of index values for the overall sample of companies is shown in Figure 26 opposite. Index values toward the upper end of the range indicate excellence in supply chain management practice.

The profile of results points to a relatively small group of firms displaying excellent or good SCM practice (less than 10% of companies); around 30% with reasonable levels of performance levels and the remaining 60% of companies which have yet to establish best practice in SCM. This finding suggests SCM improvement potential in particular for two thirds of the companies surveyed.

Company performance is a function of SCM excellence. This finding is also confirmed in the following figure, where the average points achieved on the SCM excellence index are related to the overall company performance.

It is statistically significant that SCM excellence is positively related to overall company performance. Two thirds of Irish companies have room for the improvement of their SCM excellence and, therefore, their company performance. It makes sense for them to take action in this area for two reasons. The first is the rather obvious one that SCM is a cost issue that is under their control. This is clearly not the case in regard to say in-house labour costs. A firm may wish to reduce its wage bill but is constrained by the environment in which it operates. More importantly, the effort in improving SCM is never wasted. No competitor can enjoy a natural advantage over them in regard to this activity. Given the fact that Ireland's competitiveness is being eroded by considerations outside the control of firms, it is clear they should focus on those matters which they can influence.

Given that 19% of respondents are carrying out or planning total supply chain management programmes, SCM integration has still a lot of potential in particular for Irish-owned SMEs to enhance their competitiveness (as illustrated in the next chapter). For example, 41% of large companies carry out SCM programmes in comparison to only 2% of small firms.

## Section 2

### SCM Barometer Survey

#### 2.3 The Impact of Company Ownership / Size / Sector on SCM Excellence

Companies can be categorised according to a range of criteria. It was felt the most important defining factors for the purposes of this section of the survey were whether the firm was large or small, Irish or foreign-owned and what industry it belonged to. When separated in this way, important differences were thrown up in approach to SCM.

The bigger the company, the more one might expect it to pursue excellence in SCM. By and large that is true but there is much more to be discovered in an analysis of company type and SCM. As outlined previously, 75% of the companies in the sample are Irish-owned and 23% foreign-owned. Nearly 90% of small companies with less than 20 employees are Irish-owned, while approaching half of companies with more than 100 employees are foreign-owned (Figure 28). These figures imply that when one is talking about small companies, one is by and large referring to companies which are also Irish-owned. But the reverse is not true. And foreign does not automatically mean large. For example: only half foreign-owned firms are large firms.

Smaller (mainly indigenous) companies tend to produce more for the local Irish market. As a result their marketing focus is more locally driven with larger (mainly MNEs) companies being more export orientated. The latter ones both from South and North also tend to draw their supply chain partners from a broader geographical area. Irish-owned firms export on average 25% of their turnover in comparison to 58% of foreign-owned firms. Similarly, small firms, which as we have seen are mostly Irish-owned, export on average 27% of their turnover in comparison to 51% of larger firms.

Irish-owned companies attach less importance to several key SCM techniques (particularly demand forecasting, warehousing, inventory management and new product introduction) than foreign-owned companies. Consequently, the integration of these supply chain functions is also lower in Irish firms than foreign-owned companies. Whatever their ownership, larger companies tend to have higher levels of integration of these SCM elements.

As a general rule, large and foreign-owned companies take a more advanced approach to SCM. As mentioned earlier there is a substantial overlap between these two categories but they are far from being synonymous.

- 57% of Irish companies evaluate their suppliers compared to 75% of foreign-owned firms.
- In the SME sector only 36% of small companies, defined as those with less than 20 employees, evaluate their suppliers compared to 76% of large companies.
- Only 23% of Irish firms and 7% of small companies promote supplier development compared to 44% of foreign-owned and large firms.

- 56% of foreign-owned firms have reduced the number of their suppliers compared with 30% of Irish-owned firms.
- 51% of Irish companies and 32% of small firms use demand forecasting compared to 94% of foreign-owned firms and 80% of large companies.

Large and foreign-owned companies use KPIs to a greater degree. Examples:

- 63% of large and 50% of foreign-owned firms formally use KPIs in customer service compared to only 28% of companies with less than 20 employees and 37% of Irish-owned firms.
- 53% of large firms formally use KPIs in procurement / purchasing compared to only 18% of companies with less than 20 employees.

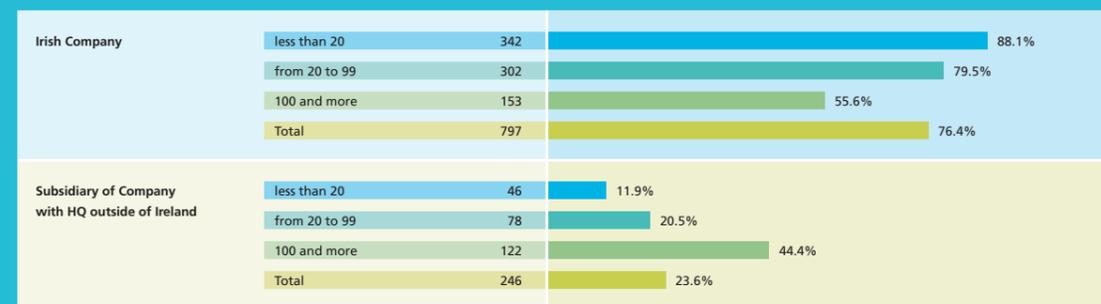
In SMEs the main responsibility for SCM rests with the managing director or other managers/directors in operations, sales/marketing, production, finance and controlling, or purchasing/procurement. Only 5% of small companies in the Republic of Ireland have a SCM or logistics director/manager in comparison to 25% of large and 27% of foreign-owned firms (see Figure 29). Differences between indigenous and foreign-owned firms are particularly marked in Northern Ireland, where only 5% of Irish-owned companies have a SCM or logistics director/manager in comparison to 27% of foreign-owned firms.

Larger companies deliver goods and services to a slightly but appreciably higher standard than SMEs (Figure 30). In particular more deliveries are made on time and without mistakes. Evidence that SMEs need to lift their game to match the customer service performance of their larger counterparts, though the figures suggest intriguingly, that medium sized firms have the most work to do.

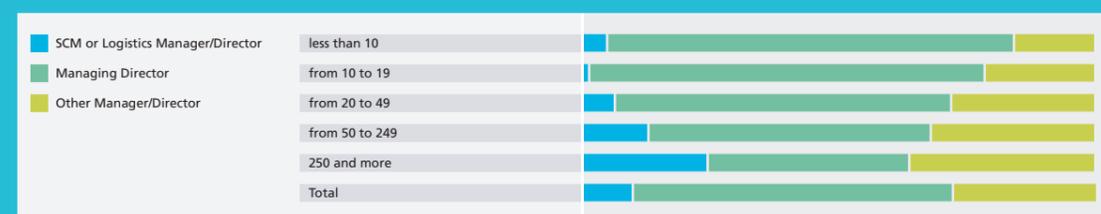
In a like for like comparison between large foreign-owned firms and large Irish-owned firms it emerged that the non-indigenous companies had a more sophisticated approach to SCM.

- 57% of Irish companies evaluate their suppliers compared to 75% of foreign-owned firms.
- 30% of large foreign-owned firms have an SCM or logistics manager/director compared to only 9% of large Irish firms. In the latter case the main responsibility typically rests with the managing director (47%).
- 33% of large foreign-owned firms demonstrate excellent or good performance in SCM in comparison to only 9% of large Irish firms. Large foreign-owned firms perform significantly better on the SCM excellence index (average 62.3 points) than large Irish firms (59.0 points).

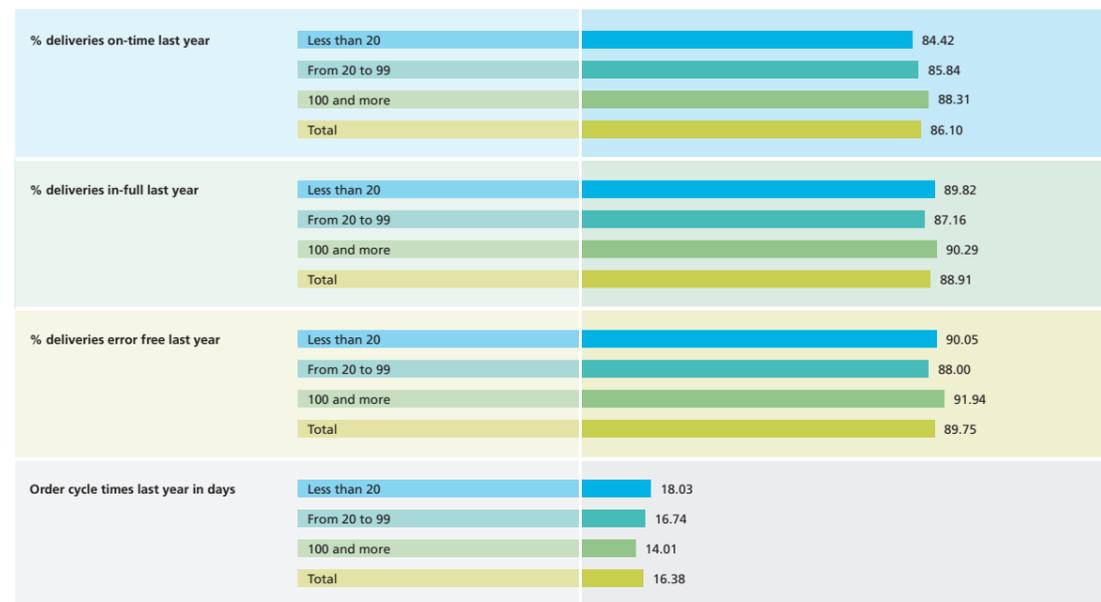
**Figure 28**  
Company ownership and firm size (by number of employees) Source: NITL, SCM Barometer 2005  
(% of companies reporting company ownership and number of employees)



**Figure 29**  
Responsibility for SCM by firm size (number of employees) Source: NITL, SCM Barometer 2005  
(% of ROI companies reporting SCM responsibility)



**Figure 30**  
Performance indicators by firm size (number of employees) Source: NITL, SCM Barometer 2005  
(Mean values of delivery performance indicators)



**Figure 31**  
SCM Excellence Index: Small vs. Large Firms Source: NITL, SCM Barometer 2005  
Based on ROI and NI



**Figure 32**  
SCM Excellence Index: Irish firms vs. Foreign-Owned Firms Source: NITL, SCM Barometer 2005  
Based on ROI and NI



**Figure 33**  
Delivery performance indicators by industry sector Source: NITL, SCM Barometer 2005  
(Mean values of delivery performance indicators)<sup>10</sup>

	Food & Consumer	Industrial Products	International Services	Total
% deliveries on-time last year		84.63	83.81	85.43
% deliveries in-full last year	90.19	88.16	88.03	88.72
% deliveries error free last year	91.04	90.20	86.58	89.66
Order cycle times last year in days			17.96	16.37

A similar like for like comparison between small Irish-owned firms and small foreign-owned firms shows the latter also had a more advanced approach to SCM. For example almost all small foreign-owned firms contract out transport in comparison to only 45% of small Irish firms.

- Small foreign-owned firms employ the latest IT system technology on a wider basis than small Irish owned firms.
- In 74% of small Irish the SCM responsibility rests with the managing director in comparison to only 53% of small foreign-owned firms.
- 6% of small foreign-owned firms demonstrate excellent or good performance in SCM in comparison to 5% of small Irish firms.

Given the above findings, it is not surprising that small firms (less than 20 employees) score lower in terms of overall company performance than medium and large companies. They also score less (average 57.28) on the SCM excellence index than large companies (average 60.12), as revealed in Figure 31.

Also Irish-owned companies score lower in terms of 1) the overall company performance and 2) on the SCM excellence index (average 57.69) than foreign-owned companies (average 60.18), as revealed in Figure 32.

Overall, these examples and the analysis of the survey data confirm the need for small indigenous firms to take up and integrate SCM activities. The fact that smaller firms tend to lag behind in the adoption of SCM should come as no surprise. The NITL findings are in line with those from another study, which benchmarked Irish SMEs against their European counterparts. It revealed that Irish SMEs performed poorly in adoption of best business practice, with the obvious consequences for business performance.<sup>9</sup> None of the Irish companies, according to that study, achieved a high score in any of the best practice areas.

Any robust approach must focus on closing the gap between the relatively small group of typically large and foreign-owned firms, which display excellence in SCM, and the much larger group of indigenous small and medium size businesses, which do not.

Attitudes and approach to Supply Chain Management on the part of firms are also naturally coloured by the sector they're operating in. The survey attempted to find out to what degree sector priorities impact on the adoption of SCM. For the purpose of this analysis firms were divided up into three different areas. Around 25% of the sample operates in the food & consumer sector, 47% in industrial products and 25% in the services industry.

Firms in the food & consumer sector tend to produce more for the local Irish market than firms in other sectors. Companies in this sector export on average 28% of their turnover in comparison to 36% of firms in the industrial products sector and 31% of companies in the services sector.

The nature of service industries means that the majority of companies (52%) in this sector sell directly to the end user of the service compared to 45% in the industrial products industry and 35% in the food & consumer sector. Being thus more dependent on distribution channels, firms in the food and consumer sectors were more concerned about their effectiveness.

Figure 33 shows that food & consumer companies deliver to a higher standard than industrial or service companies, fulfilling orders more quickly and on time. The power of the large retail multiples may account to some extent for this. The growing dominance of supermarket multiples at the retail end of supply chains, involving a strict adherence to lean stock levels, is known to be a major influence on suppliers and their delivery performance.

A majority (56%) of food & consumer companies stated that the transport infrastructure is constraining their business in comparison to 25% of industrial products companies and 28% of firms in the service sector. Product quality and price competitiveness were viewed as more important in the Food and Consumer and Industrial Products sectors than in case of International Services. The latter industry reports a significantly greater problem retaining staff than other sectors and this also applies to retaining a customer base.

In general, service companies do not integrate key SCM activities as well as firms in the food & consumer and industrial products sectors. This can be partially explained by the nature of the business (eg. physical movement of product is inevitably a less important issue in service companies than in manufacturing companies). Service firms integrate IT better within the company and within the supply chain than companies in food & consumer and industrial products. Despite this higher level of IT integration, service firms score slightly less (average 57.20) on the SCM excellence index than industrial product companies (average 58.24) and food & consumer companies (average 59.45). This is because firms in the latter sectors deliver to a higher standard and generally integrate better SCM elements.

It is to be expected that when one divides up firms according to their key characteristics, differences will emerge in the importance they accord to SCM. To an extent these differences will be explained by the relative importance they assign to SCM because of how big they are, what industry they are in and the resources they have at their disposal. As a result it is scarcely surprising that smaller firms are less advanced than larger firms in their application of SCM techniques.

Overall what emerges from this section of the survey which is of greater significance and harder to explain is the contrast between local and foreign firms. When comparisons are made on a like for like basis ie. between small Irish-owned firms and small foreign-owned firms, it is clear that the indigenous companies lag behind. The same is true for large firms. However, this sort of information should help decision-makers target their guidance on SCM more effectively.

<sup>9</sup> Enterprise Ireland and UCD (2001), 'Made in Ireland, Benchmarking Ireland's SME's'.

<sup>10</sup> Figures underlined indicate significant differences among industry sectors.

## Section 2

### SCM Barometer Survey

#### 2.4 SCM and the Spatial Dimension

##### 2.4.1 SCM Performance:

###### Republic of Ireland vs. Northern Ireland

While both sides of the Island of Ireland have benefited significantly from economic growth in recent years, the shape and structure of the two economies do vary markedly. Through a highly successful inward investment policy, the Republic of Ireland has built up a strong export driven private sector. By contrast Northern Ireland, though also attracting more Foreign Direct Investment, up nearly 50% over the past six years, is still highly dependent on public sector spending, relying on a net transfer of funds from the UK Exchequer.

The Centre for Economics and Business Research estimates that in 2004 NI public spending equated to nearly 60% of GDP. A similar analysis of public spending elsewhere on the two islands produced figures of 45% for the UK and around 30% to 35% for ROI. The key challenge for NI set out in the recently published Economic Vision is to achieve economic development through growth in the private sector economy and to move away from dependency on the state sector.

That remains the aspiration but with no prospect of rapid political agreement leading to the return of a devolved government at Stormont, a transformation of the economy looks some way off. That said, the NI economy has recorded strong growth in recent years, sufficient to lower unemployment to the UK average of 4.8%, just a fraction higher than in ROI.

GDP growth this year is expected to be around 3% in NI and 5.5% in ROI. Meanwhile the Republic of Ireland is continuing to grapple with significant upward pressure of costs and the erosion of competitiveness. Forfás reported last year that the Republic's prices, relative to those of its trading partners, were 8% above the level required to keep the country competitive enough to sustain full employment.

Firms surveyed in the Barometer indicate that rising salaries and costs are bigger problems for companies in ROI (with its higher salaries and greater cost of living). The ROI labour market is tighter than NI with the resulting upward pressure on labour costs. Staff retention is a larger problem in NI.

Industry also has to cope with creaking infrastructure though in an attempt to remedy that, Dublin has pledged to keep public investment close to 4% in the period 2004 to 2008. A common challenge for both parts of Ireland is to continue to win high levels of foreign direct investment, which, as mentioned, has been one of the main factors that has fuelled past economic success. Both North and South have plans to encourage more investment in R&D; though the Republic's strategy, announced last year, is widely accepted to be better developed.

While broadly speaking, the approach to Supply Chain Management is similar North and South, there are some important differences worth remarking on. These are detailed in the course of this chapter. On average NI firms are less aware of some key SCM costs, have been slower to measure their SCM performance in a formal way and are more sceptical of the benefits of introducing the latest IT to enhance efficiency.

The average Northern Ireland company is smaller than that in the Republic, an outcome which is at least partly explained by the higher proportion of multinational enterprises in ROI. Some of the key differences between the two parts of the island are outlined below:

- Average turnover of ROI firms is €34.3m while the average in NI is €13.4m.
- The average number of employees in ROI firms is 306 compared with 153 for NI firms.
- 27% of firms in ROI are subsidiaries of foreign-owned multi-nationals, over twice the proportion in NI (12%).

ROI companies are more export-oriented than NI firms but the gap is not large. Companies in NI export 29% of their turnover compared with 34% for ROI firms. Firms in ROI tend to export further afield than their NI counterparts, which are more dependent upon home markets. Incidentally ROI is much more important to NI as an export market than vice versa. A breakdown by volume of production reinforces the view that ROI companies have much stronger levels of penetration into continental Europe and other international markets than NI firms and draw their supply chain partners from a wider area.

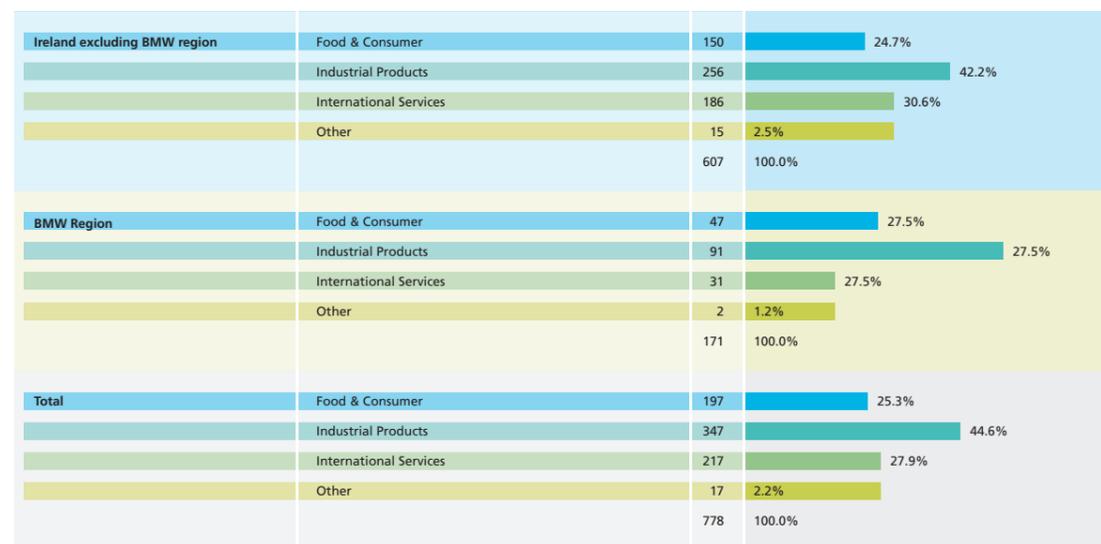
Given the importance of yardsticks to measure performance it is surprising that relatively few NI firms use them to assess their how well they are scoring in relation to such key issues as customer service, procurement and transport. 74% of NI firms do not have key performance indicators to measure the level of their customer service (ROI = 46%). Even greater proportions of NI firms do not assess in a formal way their performance in procurement, transport or warehousing. In general, NI firms surveyed are implementing fewer total supply chain management initiatives.

Just as disturbingly only 31% of NI firms know their transport costs compared with 59% of ROI companies. Irish firms handle 37% of their transport needs internally (ROI = 22%; NI = 63%) and contract out 57% (ROI = 72%; NI = 32%). ROI firms are clearly more vigorous in outsourcing their transport requirements. ROI companies report that they will be impacted more in the future by the demand for shorter delivery times, smaller and more frequent drops than their Northern counterparts.

**Figure 34**  
Industry Classification: BMW vs. Rest of Ireland Source: NITL, SCM Barometer 2005  
(% of companies reporting strategic classification)



**Figure 35**  
Delivery performance indicators: BMW vs. Rest of Ireland Source: NITL, SCM Barometer 2005  
Mean values of delivery performance indicators



**2.4.2 SCM Performance:**  
**Border-Midlands-West Region vs. Rest of Republic of Ireland**  
Just as Northern Ireland lags behind the Republic in the application of SCM techniques, so too within the Republic, the Border-Midlands-West (BMW) region falls some way short of the rest of ROI. 171 companies from the BMW region participated in the survey (22% of the total sample of the Republic of Ireland).



ROI firms are more eager to use the latest information technology than NI companies. 51% of NI companies say they would not use the latest systems technology in comparison to 27% of ROI companies. If companies in Ireland are to enjoy the opportunities that SCM management offers in creating competitive advantage, significant improvements in the application of IT to the SCM elements is essential. It is therefore worrying that NI firms believe the employment of the latest IT in the areas of inventory management, production planning, procurement, transportation and forecasting is significantly less important than do ROI companies.

All factors considered, it appears that NI firms have not developed SCM to the same degree as their ROI counterparts. Approx. 10% of ROI firms show excellent or good performance at the SCM excellence index in comparison to 7.5% of NI companies. While the differences between the two parts of the island demonstrate an even greater need for investment in NI, there is no doubt that the most important finding from the whole survey is that two thirds of all companies across the island could benefit from greater attention to SCM.

In terms of transport infrastructure, 45% of ROI companies reported that inadequacies within the system are constraining their business (NI firms = 19%). It is interesting that ROI companies are less satisfied than NI firms about public transport services, freight transport services and transport infrastructure within the country. However, a knowledge of both systems should create some scepticism that the ROI system is necessarily worse than its Northern counterpart.

Overall there are grounds for serious concern that firms in NI have performed less well in the adoption of SCM than their counterparts in ROI. It would appear there is a clear correlation between the level of economic development in the two sides of Ireland and their adoption of SCM best practice.

Northern Ireland's strong economic performance in recent years should not disguise how far it remains behind the UK as a whole and ROI. In 1990 Gross Value Added was 75% of the UK average. While it is now just over 80%, plainly a large gap still exists. It is also of concern that although unemployment has fallen dramatically in recent years, almost 30% of the working age population is economically inactive compared with just over 20% of the UK population.

Northern Ireland has yet to fully grasp the opportunities offered by SCM. The results of the NITL survey, revealing the gap in SCM performance between NI and ROI, are a direct challenge to both the Department of Enterprise, Trade and Investment and Invest Northern Ireland to improve the spread of SCM techniques among local companies and thus spur the economy into making further improvements.

At least part of the difference in performance is due to differences in the industrial structure. Exports in the BMW region represent a smaller percentage of turnover (32%) than in the rest of the Republic of Ireland (37%). However, no significant differences occurred in the geographical reach of exports, the locations of supply chain partners and channels of distribution between the BMW region and the rest of the Republic of Ireland.

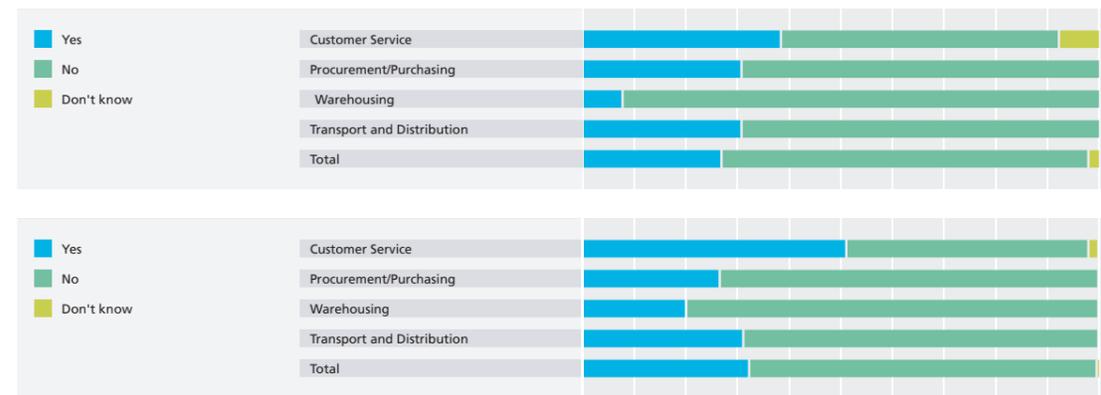
The BMW region has smaller companies generally and proportionally fewer multinational enterprises. Examples:

- There are on average 137 employees per company in the BMW region compared to 345 in the rest of the Republic of Ireland.
- There is on average a company turnover of approx. €18 million in the BMW region compared to nearly €43 million in the rest of the Republic.
- The BMW region generates less foreign investment than the rest of the Republic of Ireland. 74% of companies in the BMW region are Irish owned in comparison to 69% of companies in the rest of the Republic.

Figure 34 reveals that the BMW region has more traditional industrial product manufacturing companies and fewer service firms. Service companies are a critical part of future development and processes should be identified to stimulate more of them to set up in the BMW region.

50% of BMW companies have a strong focus on price/cost leadership, while 58% of firms in the rest of the Republic concentrate on differentiating themselves from the competition. Macro challenges (eg. globalisation) and internal supply chain challenges are reported consistently by firms in the BMW region and the rest of the ROI. Figure 35 illustrates that in terms of delivery performance indicators, the BMW region underperformed in the average order cycle days

**Figure 36**  
 SCM key performance indicators integration: BMW vs. Rest of ROI Source: NITL, SCM Barometer 2005  
 (% of BMW companies reporting measurement of KPIs)  
 (% of companies in the rest of ROI reporting measurement of KPIs)



**Figure 37**  
 SCM Excellence Index: BMW vs. Rest of ROI Source: NITL, SCM Barometer 2005



Only 15% of BMW companies integrate their SCM programmes (compared to 27% in the rest of the Republic). However, as in the rest of ROI, companies in the BMW region believe that the task of doing so falls to senior management rather than being undertaken at a more junior level. BMW region companies use key performance indicators in SCM less than in the rest of the Republic (see Figure 36).

While 32% of companies in the rest of the Republic have reduced the number of their suppliers, 27% of BMW firms have carried out a similar exercise. Only 46% of BMW companies use demand forecasting compared to 64% in the rest of the Republic.

The analysis of NITL's SCM Barometer survey demonstrates that excellence in SCM is a key determinant of overall company performance. Put simply, firms employing best practice in SCM are more competitive; conversely those that do not, are at a competitive disadvantage. Firms in the BMW region score less on the SCM excellence index than companies in the rest of the Republic, as revealed in Figure 37. 5.4% of BMW firms show excellent or good performance in SCM in comparison to 10.1% of firms in the rest of the Republic.

The BMW region has a greater proportion of traditional industry firms and a corresponding smaller percentage of service companies than the rest of ROI. That indicates the economy there has further to evolve. It also suffers from having less foreign investment. These are twin handicaps that the region has to overcome. It needs encouragement and support to develop. However, as the NITL SCM Barometer Survey shows, there is a lot that the BMW region could do to help itself.

It is worrying that the performance of firms in the BMW region in adopting SCM best practice is at a rate that is only half that of the rest of the Republic of Ireland. Given that firms in the BMW regions are already disadvantaged by reason of their peripherality, it is disappointing that more has not been done to harness the strategic solutions SCM offers to overcome distance from market and other infrastructure problems. It would seem appropriate that special measures are put in place to help the region speed up the adoption of advanced SCM techniques.

## Section 2

### SCM Barometer Survey

#### 2.5 SCM Interventions for Competitiveness Improvement

##### 2.5.1 Results from Other SCM Studies

While the 2004 SCM Barometer survey provides a comprehensive insight into the state of SCM within Ireland, North and South, its findings can be complemented by several other studies. For example, the existence of a 2001 SCM survey, also commissioned by NITL, allows some assessment of the progress Ireland is making on SCM. The 2001 report was based on a survey of 169 companies, of all sizes, indigenous to ROI (85 in food & consumer, 83 in industrial products, 1 in international services). In order to establish meaningful comparisons between the surveys in 2001 and 2004, a similar sub-sample for the 2004 Barometer was selected, numbering 391 indigenous companies (in the sectors food & consumer and industrial products based in the ROI).

- In 2001 one of the main internal supply chain challenges was a shortage of labour/staff (39%) and skills shortage (18%). The importance of these challenges has decreased in recent years. Irish firms mainly cite challenges that are closely related to cost reduction.
- Companies still take advantage of only limited key performance indicators to date.
- 60% had not reviewed their transport costs in 2001, while 41% did not know their transport costs in 2004.
- 48% reported that the transport infrastructure was constraining their business in 2001 (47% in 2004).
- In 2001 companies had IT less well integrated across the company and the supply chain than in 2004.

It is more problematic to use surveys conducted in other countries when comparing take up of SCM techniques here and abroad. The methodology will clearly be different. Quayle (2003) found that only 25% of Welsh companies operate supply chain management.<sup>11</sup> Of that 25%, only 10% have a senior executive responsible for it. Intriguingly, the survey discovered that in companies which did not apply formal SCM practices, only 60% were interested in attending a workshop/seminar to learn more about it compared with 70% in companies which did operate the system.

Supply chain management strategy is also missing from many Welsh business plans (Quayle, 2003). Similar findings were made in a study of small firms in Northeast England (Rudolph 1999).<sup>12</sup> In 2004, St. Gallen's Kuehne-Institute for Logistics conducted a survey in co-operation with the Swiss Logistics Association (SGL) to gain more information on the characteristics of the Swiss SCM market.

The results underline the increasing strategic relevance of SCM and logistics management. Over 70% of Swiss logistics managers report that a board member looks after the company's logistics department.

The trend towards outsourcing of logistics is well advanced. Businesses in Switzerland have already outsourced 30% of their logistics to third party providers. And Swiss managers expect to outsource further activities – particularly to information service providers – in the next three years. Further outsourcing decisions, however, will depend on a better understanding of costs. 20% of companies in the consumer goods industry and almost 60% in the industrial sector calculate their logistics costs less than once a month in Switzerland. Almost 30% of SMEs do not measure their logistics costs (compared to 7% of large enterprises).

According to the report 'Approaches to Outsourcing and Risk Management in Europe' of LogicaCMG (2004), of the 35% of large European companies which currently outsource at least one core business process, 45% prefer to use a single service provider per process area and 34% overall prefer to use multiple service providers for all areas.

The study has shown that on average a European company can add one and a half percentage points to its profitability directly as a result of outsourcing core business functions. But it is further estimated that on average a company can improve its profitability by some 4.5% if it moves to the optimum balance of 70% outsourcing versus 30% insourcing as perceived by LogicaCMG, which itself can add an additional £45 million to the bottom line of a £1 billion turnover company. It would appear to be a matter of time before more companies outsource and those that already do to outsource more.

According to a survey which AT Kearney prepared for the German association Bundesvereinigung für Logistik (BVL), logistic costs for European companies will increase from 7.8% of the companies' turnover in 2003 to about 8.5% by 2008. Above all this increase reflects higher transport and transport packaging costs. In terms of turnover, the European market for logistic services is expected to grow by 10% a year. This market's volume amounts to about EUR 585bn (US\$ 719.9bn) at present.

A survey conducted by MORI on behalf of Exel in 2004, suggest that supply chain management is one of the most important factors driving business growth. The researchers questioned senior supply chain managers within leading, global organisations who revealed that within two years time, most of them in the UK and Ireland expect they will outsource up to 68% of their supply chain.

11

Quayle, M. (2003), 'A study of supply chain management practice in UK industrial SMEs', *Journal of Supply Chain Management*, 8(1), pp. 79-86.

12

Rudolph, P. (1999), 'Nature and Role of Procurement in Supply Chain Management', *Proceedings of 8th IPSERA Conference*, Dublin.

The division between different activities within the supply chain is shrinking, with 73% of all respondents stating that integrated logistics solutions, covering the entire spectrum of supply chain management, are relevant to their business. When asked about which factors are most important when choosing a provider, the top two answers were the capability to offer core contract logistics and freight management services.

The results also highlighted that the most important supply chain issue for companies is to reduce costs (58%), followed by reliability (38%) and integration of the supply chain (32%). More than three quarters of companies are actively looking for ways to reduce their supply chain costs.

There may be great interest in the subject of supply chain management but there is evidence that only a small minority of companies are pursuing the issue properly. Deloitte Consulting published a report in 2003 which claimed that only 7% of companies are effectively managing their supply chain.<sup>13</sup> Deloitte analysed how well supply chains were synchronised at nearly 600 manufacturers in every major industry segment across North America and Europe. The authors reflected on what the implications were for manufacturers of increasingly complex and fragmented supply chains and outlined what they took to be the challenges to companies, finally recommending best practices. The study uncovered five paradoxes that result from supply chain complexity:

- Despite globalisation, most supply chain optimisation is done locally;
- Supply chains are not fully equipped to support accelerating innovation;
- Flexibility is becoming more difficult to achieve in the face of shorter product cycles, increased customer demands, the pursuits of lower-cost locations and the race to new markets;
- While managing risk is a priority, current fragmented supply chain initiatives are increasing potential risk;
- While customer service is a priority, fewer than 8% of companies have a high level of collaboration with customers on key initiatives.

The results of Deloitte's study clearly indicate that managing a complex, global supply chain well has a positive impact on a company's financial performance. 'SCM or Complexity Masters' profit margins are 73% greater than manufacturers with poor supply chain performance and less complex environments. In contrast, 84% of manufacturers each earning over \$200 million in revenue gave themselves an average-to-poor supply chain performance, admitting they were struggling to effectively manage their complex supply chains.

Deloitte found that it is not simply the supply chain initiatives that manufacturers deploy that make the difference. The key to generating better financial performance is synchronising the supply chain and managing it in an holistic way rather than in a fragmented manner.

Evidence is mounting from across the world not only that excellence in SCM is important to the smooth functioning of business but that it can contribute to profitability. Just how big a difference it can make, has now been quantified by a number of studies. The message is thus getting through to firms about what the application of advanced SCM can do for their businesses. But awareness is one thing. How to introduce the latest techniques into companies is another. Managements need to be guided through the stages involved in overhauling existing procedures.

SCM re-engineering is the name of the process by which managements revamp their supply chains. It the systematic application of principles derived from close observation of what does and does not work.

#### 2.5.2 Strategy for SCM Re-Engineering and Improvement among Irish Firms

From the review of the Irish SCM barometer and other SCM reports, it is evident that

- Globalisation of markets, brands and suppliers means companies are employing increasingly sophisticated supply chain management practices.
- World Class Manufacturing is being replaced by World Class SCM.

In the context of the Irish economy, and the natural disadvantages of peripherality, it is obvious that Irish companies must manage their supply chains better than companies in more favourable market locations. Ireland has an urgent need to adopt SCM best practice more widely in order to:

- Prevent further erosion of competitiveness
- Minimise the impact of peripherality
- Enable small firms to take advantage of global supply chains
- Exploit opportunities to manage Virtual Supply Chains from Ireland

Improving supply chain performance and overall competitiveness can be achieved through re-engineering, which involves detailed analysis, imaginative planning and thorough implementation of agreed solutions. In short, Re-engineering = Analysis + Planning + Implementation. It is important to bear in mind that in supply chain reengineering, no panacea or magic solution exists.

Furthermore, as every company and every supply chain is unique in some respect it is inappropriate to attempt to blindly copy or imitate companies regarded as being exponents of good practice. The uniqueness could be with respect to products or services supplied, processes, customer expectations, people and cultural issues, systems or any one of a number of other factors.

There is however a logical and systematic way of addressing the re-engineering challenge. The NITL 'Systems Approach to Supply Chain Design' is an example of such an approach. The following section identifies some of the key elements of such a strategy, based on the characteristics of supply chain reengineering discussed earlier.

#### Elements of a Systematic Approach to Supply Chain Re-Engineering

##### Understanding Customer Service

As pointed out earlier, customers set the spec for the design of the supply chain. In other words, the needs of customers specify the performance for integrated SCM. That implies the need to understand customer requirements in targeted segments of the market. This forms the basis of any effective supply chain re-engineering and change process.

##### Supply Chain Organisation

In many traditionally managed supply chains, individual functions (eg. purchasing, production, transport and warehousing) are measured and managed in isolation from each other. The net result is that the overall supply chain fails to achieve its true competitive potential because the constituent elements at best fail to reinforce each other and may even operate at cross purposes. A key SCM objective is to replace this traditional, often highly fragmented, supply chain organisation with structures which are characterised by higher levels of integration. This has serious implications for the way organisations are structured. For example, it may be argued that in the future organisational structures are more likely to be described in terms of processes and networks (both internal and external) rather than functions and hierarchy.

**Figure 38**  
The Organisational Shape of the Future

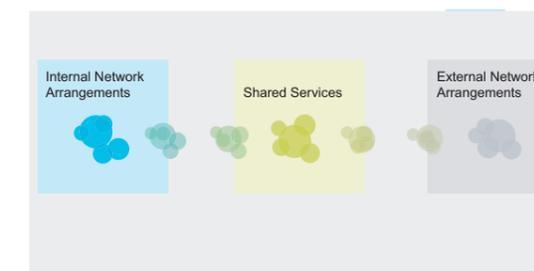


Figure 38 shows a possible future organisational shape based on internal and external networks, as well as shared services. In such structures, the boundaries between supply chain companies and between internal processes become more blurred. The focus is on organising around value-adding processes rather than on creating fragmented structures (often developed chiefly for the convenience of managers). The latter often results in pseudo efficiency but poor levels of overall performance. The former focuses on customer value and effectiveness, and is more likely to lead to real efficiency.

#### Technology – The Great Enabler?

There can be little doubt that IT has the potential to have a serious positive impact on supply chain performance. This is largely because it can help to feed data instantly through the supply chain, leading to more informed and better decision-making. However, its potential has often been unfulfilled for a variety of reasons. These include a piecemeal approach to IT planning and implementation, and tactical (as opposed to strategic) approaches to supply chain integration. These problems have often been exacerbated by legacy systems with multiple platforms and standards both internally and across the wider supply chain. The key to success in IT terms is no longer likely to derive from the technology itself – most solutions, because they are imitable, are unlikely to be a source of sustainable competitive advantage. In future, competitive advantage is more likely to originate from the development and implementation of creative IT strategies. The focus needs to shift away from systems and hardware and move towards processes (which add value) and people.

#### Supply Chain KPIs in World Class Companies

In designing robust and integrated systems to measure supply chain performance, it is important to study and learn from organisations which are regarded as exemplars of best practice. The following exhibit some of the features which tend to be incorporated into the performance measurement systems of successful companies:

- Measures should relate directly to company and business unit strategy.
- An integrated approach should be adopted across the company and the supply chain – tools such as the balanced scorecard and the performance pyramid are potentially useful in this regard.
- Measures should change over time to reflect changing imperatives and priorities.
- Measures should be as simple and easy to use as possible and should give fast feedback to staff.
- Excessive numbers of measures should be avoided. (if you try to measure too many things you may end up effectively measuring nothing!)
- Measures should aim to teach staff about their sphere of operation and as a basis for continuous improvement, rather than being purely for monitoring and control purposes.

<sup>13</sup>

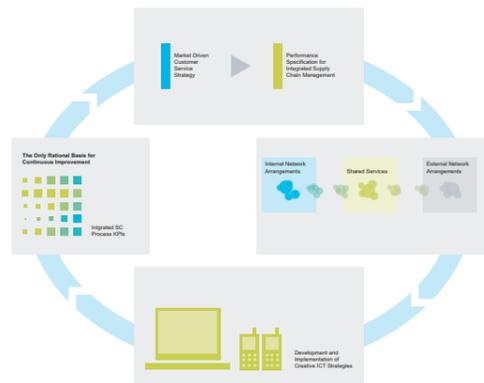
Deloitte (2003), *The Challenge of Complexity in Global Manufacturing: Trends in Supply Chain Management*.

The importance of performance measurement and KPIs in the re-engineering process cannot be overstated. It provides companies with a rational basis for continuous improvement. It is important that an integrated system of KPIs is designed as part of the process and that the measures become an integral part of the supply chain.

#### Towards a Supply Chain Re-Engineering Roadmap

A comprehensive roadmap towards supply chain re-engineering must incorporate the three key issues discussed in the previous section. Figure 39 shows in graphic form the proposed overall approach. It starts with a strategy driven by customer needs which determines how the integrated SCM should perform.

**Figure 39**  
Elements of a Roadmap for Supply Chain Re-Engineering



In relation to the organisation of the supply chain, the need is for a focus on processes and effectiveness, with a strong emphasis on network arrangements and shared services. IT has the potential to facilitate integration between supply chain processes. However, for this potential to be realised, creative IT strategies need to be developed and implemented. Again the focus needs to be on (value-adding) processes and on people. Finally, the KPIs provide the organisation with a rational basis for continuous improvement. These measures feed back into the development of the customer service strategy thus closing the loop.

Re-engineering is, first and foremost, about change. Managers need to learn and apply new skills if the re-engineering process is to result in real change and sustainable improvement in performance. The reality in today's competitive world is that standing still effectively means falling behind. Innovation in all aspects of SCM is the key to survival and success. It is also worth noting that in reality most innovation is a series of small incremental steps in line with the Japanese Kaizen principle.

The approach to re-engineering outlined in this report focuses on the key aspects of service delivery based on clearly understood market requirements, integration of supply chain activities and data, efficient organisation of the supply chain and measurement of performance. Finally, NITL's experience indicates that the real success factors in any re-engineering or change process depend on people learning new knowledge and skills.

The implications of the foregoing for Irish economic policy and industrial development strategy are significant. From an SCM perspective the research has identified key policy opportunities:

#### 2.5.3 Key Implications for Enterprise Strategy:

##### A Three-Dimensional Perspective

- Management of Virtual Chains from Ireland
- Integrating New Product Introduction (NPI) and Supply Chain Design
- Optimising National Distribution Networks

The challenges which these opportunities pose are in line with the report 'Ahead of The Curve' (ESG, 2004). 'Ahead of The Curve' addresses the new challenges facing the economy in the years ahead by advocating an emphasis on sales and marketing, and the development of high value products and services. It also highlights the importance of key infrastructure and utilities in enabling Ireland and Irish firms to meet the ever-increasing challenges posed by globalisation and highly skilled but low cost labour forces in the emerging economies of Eastern Europe, the Far East and elsewhere. Supply Chain Management is identified among those the keys to success. The potential contribution, which SCM and related activities can make to the continued prospering of the Irish economy, is evident throughout the report.

#### Management of Virtual Chains from Ireland

Manufacturing will continue to migrate to lower labour cost countries. However, and this is an important insight, SCM oversight and the skilled jobs associated with it, need not accompany manufacturing to its new home overseas. The reason is that knowledge-intensive integrated management of supply chain activities can be de-coupled from the labour-intensive movement of physical material. This apparent miracle is made possible by rapid and ongoing developments in supply chain IT.

With the development of a growing skills and knowledge base, Ireland is potentially a base from which to manage pan-European, or even global, supply chains. Such operations can act on behalf of both indigenous and multinational companies. Recent changes in the corporate taxation regime (in particular the introduction of a 12.5% tax rate on service businesses) makes more attractive the option of companies establishing business units (profit centres) in ROI with responsibility for the management of supply chain activities.

#### Integrating New Product Introduction and Supply Chain Design

Companies now increasingly recognise that New Product Innovation (NPI) cannot be carried out in isolation from supply chain design but rather that a more integrated approach is necessary. As product life cycles become shorter, it is becoming more important that products, and the supply chains that deliver them to the market, are designed simultaneously rather than one after the other. The design of supply chain solutions is a highly skilled, knowledge-intensive and complex activity, reflecting a shift from box moving to more sophisticated activity, which now typically takes place in the third-party logistics (3PL) sector. It therefore follows that more sophisticated SCM skills are needed at a much higher strategic level if NPI is to be properly supported.

#### Optimising National Distribution Networks

As Irish customers become more discerning, customer service requirements in the local market are becoming both more demanding and variable between business sectors. The emergence of complex national distribution networks is now more critical for companies. For example, the move towards centralised distribution by the multiple food retailers has forced their suppliers and distributors to radically redesign their supply chains and associated distribution networks. This type of activity will become even more important across a range of sectors with increasing market sophistication, downward pressure on costs and the opening up of new channels to market in the form of e-business and e-commerce.

To meet the competitiveness challenge, Ireland needs to become an innovation and knowledge driven economy. The pressures imposed and opportunities afforded by globalisation, the open nature of the Irish economy and recent developments in IT excellence mean that Supply Chain Management has a critical role to play in both the medium and long term. Small Irish companies need to develop supply chain management skills as their operations form part of the external supply chains of larger multinational companies. Making these companies aware of SCM and developing the necessary internal capability is essential if Ireland's industrial base is to thrive. Developing the supply chain expertise of Irish SMEs allows them to align their supply chain objectives with their business strategy.

It is reasonable to conclude that aware companies – those with a high level understanding of what it takes to succeed – are gaining a competitive advantage by absorbing knowledge and skills from support services of NITL's portfolio of services. While these early adopters are already well up the 'S' curve of innovation transfer, it is with the larger group of less aware Irish companies that the critical challenge lies. NITL's mission, for the sake of future Irish competitiveness, is to spread the word on best practice in supply chain management. In particular there is a need for a focused programme aimed at addressing the requirements of SMEs.

While NITL does offer its learning programmes on a regional basis, there is still scope for further expansion particularly to BMW Regions. The programmes, which have now been developed, are readily transportable to regional centres to help boost business performance across the island.

## Section 3

### Conclusions and Recommendations

Ireland needs to improve its competitiveness if the current strong economic performance is to be sustained into the medium term. In particular, Irish manufacturing industry urgently needs strategic solutions to the rapid erosion of its competitive position, as mobile foreign direct investment begins to flow more readily towards new EU member states. These are the challenges foreseen by the Competitiveness Council and the OECD, among others. Developing innovation potential, human capital and economic and technological infrastructure are the important policy issues identified by An Taoiseach, Bertie Ahern.

As Ireland squares up to the unprecedented challenge of consolidating its success, and the unparalleled opportunity of expanded global market reach, we are faced with making critical long-term policy decisions that have a 20 to 30 year horizon. Famously, the far sighted policy decision of free second level education for all, made by far sighted governments in the 1960s, fuelled the 'Celtic Tiger' with an abundant, well educated labour force. Such foresight is needed again.

In taking up the Taoiseach's recent challenge, NITL has demonstrated on the basis of this major national study that through the innovation of World Class SCM on a wider industrial base, Ireland can remedy many of the downsides of economic success and peripherality and exploit higher skills and IT technologies for greater market reach. And far from being at a starting point, we have also demonstrated that Ireland is already well positioned up the 'S' curve of early adoption among leading edge firms.

Indeed, the foundation by the Government of NITL as a centre of excellence for SCM has already placed us ahead of the competition. It puts Ireland in a good position to leverage the initial public investment for more human capital investment in SCM skills development and wider adoption of World Class SCM.

However, the converse conclusion must also be stated: Ireland can rapidly fall behind eager new EU member states that are becoming a magnet for FDI-resourced economic development if it fails to adopt a more viable vision for its own manufacturing sector. The adoption of World Class SCM is a prerequisite to that vision. So too is continued improvement in key SCM infrastructure supports, namely broadband IT connectivity and air and freight transport on an island wide basis.

NITL's comprehensive SCM Barometer survey provides us with empirical evidence that excellence in Supply Chain Management is a key determinant of overall company performance ie. firms employing best practice in SCM are more competitive; those that do not are at a competitive disadvantage.

The profile of results points to a relatively small group of excellent firms in SCM (less than 6% of companies), approx. 30% with reasonable levels of SCM excellence levels and the remaining two thirds of companies which have yet to establish best practice in SCM. The index proves that SCM excellence is positively related to overall company performance.

'Best practice' requires KPIs all of the key logistics functions. The survey assessed whether companies had clearly established KPIs in place and found that the integration level of supply chain KPIs is low in companies. For example, 46% of companies surveyed do not have KPIs for customer service despite the fact that it plays a key role both as the specification for the logistics systems and its part in the marketing mix. Less than 10% have any formal SCM position. In SMEs the main SCM responsibility rests with the managing director or other managers. Responsibility at board level was in many cases taken. Companies score low in relation to having the latest information technology and having it integrated across the supply chain.

Important and worrying differences in management culture and approach to SCM have emerged through this study between indigenous and non-indigenous firms.

- It is ownership rather than size that matters when it comes to SCM adoption.
- Foreign-owned companies typically take a more advanced approach to SCM.
- Irish-owned companies attach less importance to key SCM techniques such as demand forecasting, warehousing, inventory management and new product introduction than foreign-owned companies.
- 33% of large foreign-owned firms demonstrate excellent or good performance in SCM in comparison to only 9% of large Irish firms.
- Large foreign-owned firms perform significantly better on the SCM excellence index (average 62.3 points) than large Irish firms (59.0 points).
- A comparison between small Irish-owned firms and small foreign-owned firms shows the latter also had a more advanced approach to SCM.
- Almost all small foreign-owned firms contract out transport in comparison to only 45% of small Irish firms.
- 57% of Irish companies evaluate their suppliers compared to 75% of foreign-owned firms.
- Large and foreign-owned companies use KPIs to a greater degree. 50% of foreign-owned firms formally use KPIs in customer service compared to only 37% of Irish-owned firms.
- In a like for like comparison between large foreign-owned firms and large Irish-owned firms, it emerged that the non-indigenous companies had a more sophisticated approach to SCM.

Any robust approach to SCM adoption must focus on closing the gap between the relatively small group of typically large and foreign-owned firms, which display excellence in SCM, and the much larger group of indigenous small and medium size businesses, which do not. It must also be recommended that such an approach must take account of differences in management culture and seek to remedy this through awareness, education, and skills enhancement among indigenous Irish firms – both large and small.

Given the key insights provided by NITL's SCM Barometer study, this should help decision makers target future enterprise policy on advanced SCM adoption in a more specific and effective manner.

This study has also identified key policy opportunities ie. managing Virtual Supply Chains from Ireland; integrating New Product Introduction (NPI) and Supply Chain Design; and Optimising National Distribution Networks (NDNs).

- On managing virtual chains from Ireland, knowledge-intensive integrated management of supply chain activities can be de-coupled from the labour-intensive movement of physical material via rapid and ongoing developments in supply chain IT.
- On integrating NPI and supply chain design, more sophisticated SCM skills are needed at a much higher strategic level if new product integration is to be properly supported.
- On optimising NDNs, the emergence of complex national distribution networks is now more critical for companies.
- The move towards centralised distribution by the multiple food retailers is one example which has forced suppliers and distributors to radically redesign their supply chains and associated distribution networks.

It is reasonable to conclude that early adopters are already well up the S curve of innovation transfer – including a pocket of excellent Irish-owned firms. However, it is with the larger group of less aware Irish companies that the critical challenge lies. NITL's mission, for the sake of future Irish competitiveness, is to spread the word on best practice in supply chain management. In particular there is a need for a focused programme aimed at addressing the requirements of SMEs.

Company performance in the BMW region is weaker than the rest of the country and this region is in particular need of SCM tools and techniques. SCM integration is less advanced in Northern Ireland.

Meeting Ireland's competitiveness challenge must mean focussing on closing that gap between the small group of large firms that practice SCM excellence, and the much larger group of small Irish businesses that do not. Irish companies must become better at how they manage their supply chains than companies in more favourable market locations.

The key lessons include:

- There is a need to focus clearly on customer service issues, in particular, the speed of response to customer requirements;
- Intra-company integration of the constituent elements of supply chain functionality requires a strong management focus;
- Effective information management, facilitated by recent developments in IT, is important in improving customer service performance; and,
- Managing relationships with external parties which perform key supply chain roles has become more important.

Top performing companies in SCM are building a global, integrated, and flexible technology infrastructure to make information visible in all aspects of global operations such as customer service, forecasting or procurement.

Rather than fixing individual pieces of an SCM network, Irish firms should take a holistic view in the design and expansion of SCM networks – the complex web of eg. suppliers, R&D facilities, distribution centres, customers, and the flows of goods, services, information and finance that link them. The aim of SCM is to improve customer service and eliminate waste, which can ultimately lead to a higher productivity.

According to Enterprise Ireland (2005), Irish companies must increasingly compete through innovation, adopting best practice, a relentless focus on driving productivity gains and increased automation.<sup>14</sup> Successful organisations of the future will be operating in an environment of well integrated supply chain networks communicating over well developed IT systems on a real time basis. Making small Irish companies aware of SCM and developing the necessary internal capability is essential if Ireland's industrial base is to survive and prosper. NITL was established to contribute to the vital role of delivering that strategic goal for Irish industrial policy.

- 1 OECD (2003), available at: <http://www.oecd.org/dataoecd/27/62/2955735.pdf>
- 2 Forfás measures the small business sector by taking three categories of 0–9 employees, 10–19 and 20–49.
- 3 This group was established by the Minister for Enterprise, Trade and Employment to review national enterprise strategy. The group reported in July 2004 (ESG, 2004).
- 4 Forfás (1998), 'Annual Competitiveness Report', available at: <http://www.forfas.ie/ncc/reports/ncc/sme.htm>
- 5 The Central Statistics Office in the Republic of Ireland confirms that 87% of enterprises were Irish-owned and 13% foreign-owned in 2003. See <http://www.cso.ie/publications/IT/ictirelandjune2003.pdf>
- 6 Handfield RB, Ragatz GL, Petersen KJ and Monczka RM (1999), 'Involving Suppliers in New Product Development', California Management Review, 42(1), pp. 59–82.
- 7 Quayle M (2003), A study of supply chain management practice in UK industrial SMEs. Journal of Supply Chain Management, 8(1), pp. 79–86.
- 8 National Competitiveness Council (2004), Annual Competitiveness Report.
- 9 Enterprise Ireland and UCD (2001), 'Made in Ireland, Benchmarking Ireland's SME's'.
- 10 Figures underlined indicate significant differences among industry sectors.
- 11 Quayle M (2003), 'A study of supply chain management practice in UK industrial SMEs', Journal of Supply Chain Management, 8(1), pp. 79–86.
- 12 Rudolph P (1999), 'Nature and Role of Procurement in Supply Chain Management', Proceedings of 8th IPSERA Conference, Dublin.
- 13 Deloitte (2003), The Challenge of Complexity in Global Manufacturing: Trends in Supply Chain Management.
- 14 NITL Research and Consultancy.

NITL has been or is currently involved in research in the following areas:

- Investigation into Transport Infrastructure, Investment and Location. A global study on behalf of Department of Transport, UK Government.
- Advice on North / West Gateway between Donegal and Derry on behalf of the Northern Ireland Government.
- Regulation of the Bus Industry in Northern Ireland on behalf of the Northern Ireland Government.
- Potential for cross border air service, which led to the start of the recent Cork – Belfast – Cork and Dublin – Belfast – Dublin routes.
- SCM issues faced by Industry in Ireland and the barriers to SCM uptake in Ireland.
- Research on North / South infrastructure and compatibility with modern SCM principles.
- Application of modern SCM principles to the Airline Industry.
- NITL's report on logistics capabilities in Irish companies in 2000 (2) highlighted some serious deficiencies in Supply Chain Management (SCM) practices. Some examples are:
  - Information and Communication technology: Supply Chain Implications
  - Sponsored evaluation of on-line travel planner.
  - 'Retail is Detail': Supply Chain Management (SCM) for the Retail Sector in Ireland.

#### NITL's story

The National Institute for Transport and Logistics (NITL) was established in 1998 by the Irish Government as Ireland's Supply Chain Management (SCM) Centre of Excellence in recognition of the key role that SCM plays in creating competitive advantage for Irish business. NITL's mission is to promote the development of supply chain excellence in Irish organisations, both private and public, for the benefit of the Irish economy. This reflects the Institute's strongly held belief that SCM is an increasingly important determinant of competitive advantage and is a key business process for companies.

#### NITL support services

In developing a system of excellent SCM, NITL's primary objectives are to:

- Heighten awareness of SCM in Ireland, as an essential approach to improve competitive advantage of companies in Ireland
- Increase the pool of SCM professionals
- Provide a strategic resource of SCM expertise and knowledge

NITL achieves this through three key areas of activity: awareness creation, education and training and the development of support tools

#### Creating Awareness

Creating awareness of Supply Chain Management (SCM) in Ireland is seen as the first step in helping industry in Ireland progress up the 'SCM staircase' of excellence. NITL is conscientious of the need to provide SCM information in formats, likely to be of benefit to all professionals, from a range of disciplines with differing levels of SCM knowledge and understanding. Information sources include: logistics solutions, the NITL website, national road shows, the Logistics Ireland annual conference and technical fact sheets.

#### Education and training

While NITL develops, implements and evaluates internal training programmes for companies, it also offers three open training and education programmes:

- The Foundation Certificate Programme provides a solid grounding in the basic principles of Supply Chain Management (SCM) which is aimed at current or emerging supervisors or junior managers.
- The Supply Chain Management Development Programme is a development programme for junior or middle managers who require a detailed understanding of world class best practice in Supply Chain Management (SCM).
- The Supply Chain Management Executive Masters. Participants in this programme fit the profile of a manager or technical professional who needs to develop balanced logistics, technological, operational management and business capabilities.

#### Support Tools

NITL provides tools which are relevant and provide real and immediate benefits to companies located in Ireland. The key support tools are the SCM Software directory, the SCM Services directory, logistics statistics and indices, benchmarking clubs and self audit packs.

#### Highlights of NITL's Contributions to Improved SCM and Competitiveness

- Logistics Solutions, NITL's in-house journal, is received by more than 60% of Irish firms. Almost 9 in every 10 companies report Logistics Solutions as increasing their awareness of SCM issues.
- Almost one in ten firms in Ireland have attended the Annual Logistics Ireland conference.
- Statistical evidence from the SCM Barometer confirms that those companies which are represented at Logistics Ireland exhibit enhanced performance in SCM practice and are more competitive than those companies which do not avail of this facility.
- 35% of companies located in Ireland are aware of NITL's Learning programmes.
- Almost one in ten firms located in Ireland have sponsored staff on one of the Institute's Learning Programmes.
- Statistical evidence from the SCM Barometer confirms that those companies which support students through NITL Learning programmes perform better and are more competitive than those companies which do not avail of this facility.
- One in twenty firms based in Ireland have made use of SCM consulting services in the last year.
- Companies taking advantage of NITL's consultancy services also exhibit higher levels of good practice in SCM.



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