

Supply Chain Perspectives

VOL 11 ISSUE 1 2010

**CHANGE MANAGEMENT
STRATEGIC PLANS: BARRIERS TO CHANGE?**

**SUPPLY CHAIN CHANGE MANAGEMENT: AN INTERNAL AND B2B
RELATIONSHIP PERSPECTIVE**

**ROLE OF LEAN IN
IMPROVING SUPPLY CHAIN PERFORMANCE**

**INTEGRATED PROCUREMENT AND SUPPLY CHAIN MANAGEMENT
THE ROAD TO SUPPLY CHAIN INTELLIGENCE**

CHANGE MANAGEMENT IN THE SUPPLY CHAIN



National Institute for
Transport and Logistics



Upcoming NITL Learning Modules

All modules are part of NITL's Masters Programmes (which lead to the award of an M.Sc.). However, all modules are self-contained and may be taken as one-off short courses. They provide an ideal vehicle for updating knowledge, skills and competencies in the areas in question. **For further information or to register for any module contact Antonio at adelinares@dit.ie or (01) 4024023.** Each module runs as follows: Thursday (1830 – 2100); Friday (0830-1730); and, Saturday (0830-1600).

Executive Masters Modules in Supply Chain Management June to September 2010

Dublin

Essential Finance for Supply Chain Managers - 10th- 12th & 17th -19th June

Introduction to Supply Chain Management - 24th-26th June & 1st-3rd July

Purchasing - 16th-18th & 23rd -25th September (2010)

Cork

Transport and Distribution Management - 10th- 12th & 17th – 19th June

Simulation of Supply Chains - 16th -18th & 23rd-25th September



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NITL welcomes you to the latest issue of *Supply Chain Perspectives* (SCP).

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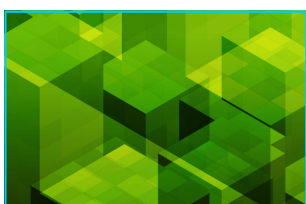
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The focus of this issue is the effective management of change in a supply chain context. We all now operate in sophisticated and dynamic business environments. Customers have become more discerning and competition fiercer in most sectors. These drivers, combined with the uncertainty associated with the recent economic volatility, require supply chain professionals to continuously re-evaluate processes to ensure that they are robust in the face of these challenges. We need to develop dynamic supply chain strategies that set out what needs to be done. However, any strategy is only as good as our ability to implement it in practice. And, the process of strategy implementation is, first and foremost, about the management of change. We know that 'standing still = falling behind' – in other words, we know that 'change is the only constant'. The key for supply chain managers is to identify the form of change required and to then implement that change superbly. Ultimately, this is the key to survival and to the development of long term competitive advantage.

The first feature article by Gerry Glynn sets the scene for this issue by introducing some of the key challenges to the effective management of supply chain change processes. In particular, his thought provoking piece poses the question: are strategic plans a barrier to change? A future article will examine possible ways of overcoming some of the pitfalls. Supply chain management (SCM) has a strong focus on the management of internal and business-to-business (B2B) relationships. Any effective change initiative must, therefore, have a strong focus on the creation and management of such relationships. Edward Sweeney's article focuses specifically on this key issue. Related to this is the need to move away from fragmented supply chain architectures towards configurations that are characterised by integration. The article by Dermot Carey and Andre Verdier of MRM-Global focuses on this issue, particularly in the context of the integration of procurement and logistics activities. Many organisations have embraced the 'Lean' paradigm as a mechanism for the facilitation of supply chain change. The article by Steve Hardgrave of the Leading Edge Group takes a specific look at this issue. NITL recently entered into collaborative agreements with both MRM-Global and the Leading Edge Group. Both collaborations are aimed squarely at enhancing NITL's ability to support Irish companies in putting effective change into place in their supply chains (see Supply Chain Forum for further information). Finally, technological developments that have taken place in recent years have acted as both a driver and an enabler of change. The case studies from Zetes and Waveform – two leading providers of advanced supply chain solutions – provide some insights into practical change management issues associated with the implementation of technology.

Our usual website reviews are included in this issue, as is the popular Supply Chain Forum to keep you abreast of the latest developments in NITL and the wider Irish and international supply chain community. We value your feedback on Supply Chain Perspectives and on our other activities – please contact us with any suggestions or if we can help you in any way.

Your NITL Team

SUPPLY CHAIN MANAGEMENT FORUM

A Review of Developments at NITL and the World of SCM

Innovation Taskforce Report Welcomed by NITL at Recent Seminar

On Wednesday 24th March a seminar entitled “Smart Work in the Warehouse” took place at the Guinness Storehouse in Dublin. The seminar, run in association with the Chartered Institute of Logistics and Transport (CILT), showcased some of the hardware and software solutions that Waveform Solutions operates - solutions that can reduce warehouse labour costs by up to 20% (see www.waveform.ie for further information). A case study based on Waveform’s work in Furlong Flooring is included later in this issue.

Speakers included Phil Prain Jr., vice president at Martin-Brower Metroplex in New York and Eddy Stride of Pacific Labor Consulting Inc. The event was formally opened by Edward Sweeney of NITL.

In his address Edward spoke of the importance of effective ICT in the design and management of supply chains. He specifically highlighted the changing role of third-party logistics providers (3PLs) in the supply chain and the implications of this for technology innovation in the sector. In this context, he welcomed the recent report of the Government’s Innovation Taskforce. Sweeney commented that “The R&D and education elements of the ‘Innovation Ecosystem’ elucidated in the taskforce report is highly



Eddy Stride, Alan Carroll (MD of Waveform Solutions) and Edward Sweeney at the recent seminar.

relevant in a logistics and supply chain context, given the challenges being faced by all sectors in the current climate. The key now is that the broad strategy be properly resourced so that it can be implemented in a timely manner. It is only in this way that Ireland can take advantage of the upturn when it comes”.

For further information about the work of the Innovation Taskforce visit : www.innovationtaskforce.ie.

NITL Welcomes New Masters Participants

A new cohort of participants recently embarked on NITL’s Executive Masters programme. This is a flexible part-time programme that leads to the award of an M.Sc. in Supply Chain Management. The aim of the programme is to develop the leaders of change and business improvement in all sizes and types of companies. The ‘Introduction to SCM’ module was run in Dublin with participants from a wide range of leading edge companies including Diageo, C&C, DHL, Microsoft and UPS. Participants were also in attendance from a number of smaller indigenous companies and the public sector. The introductory module was very well received with participants commenting specifically on the high level of participation and interaction, the effective use of illustrative case studies and the blend of theory and practice. NITL wishes all new participants well with their postgraduate studies. For further information about the Executive Masters programme, as well as NITL’s other learning programmes visit www.nitl.ie.

NITL and Leading Edge Group Launch Lean Masters Green Belt Program in Supply Chain Management

NITL recently signed a Memorandum of Understanding (MOU) with the Leading Edge Group. The collaborative venture will involve the launch of an innovative Lean supply chain learning programme - Lean Masters Green Belt Program in Supply Chain Management.

The Leading Edge Group is a niche consulting and training organization based in Cork, Ireland and Toronto, Canada. It provides process improvement solutions to the supply chain, manufacturing, financial services and healthcare sectors. The company has grown over the years and now works throughout Europe and North America where it has successfully conducted over 800 operational and process improvement engagements in the last decade.

For more information about the company's work visit www.leadingedgescm.com

The Lean Masters Green Belt Program in Supply Chain Management is a blended solution combining both on-line and classroom delivery. Participants receive access to a Learning Management System portal from where they can launch each lesson, download resources, take prep exams and interact with fellow participants via a Lean discussion forum. This learning is further enhanced by the delivery of two half-day classroom lectures on supply chain integration, design and reengineering. The program is accredited by the Institute of Industrial Engineers and participants who successfully complete the course are eligible for

an exemption from the compulsory introductory module of NITL's M.Sc. programmes.

Commenting on the launch Joe Aherne, CEO of the Leading Edge Group commented: "Applying Lean Thinking to the supply chain can provide significant cost and process efficiencies. However, in order to realize and sustain these benefits fully, there is an urgent requirement to educate and empower supply chain staff in the principles and methodologies involved. Education and training in Lean Thinking should be part of an organizations' competency framework to ensure consistency across all functions." Edward Sweeney of NITL stated that "NITL is delighted to be partnering with Leading Edge to offer this premium SCM development programme. It offers an ideal opportunity for those involved in any aspect of the supply chain to upskill in this key area and opens up the possibility of studying SCM right up to Masters level".

For further information about the programme contact Joe Aherne on 021 4855863 or email jaherne@leadingedge.ie for further details. A feature article in this issue explores the role of lean thinking in supply chain improvement in some detail.



Joe Aherne of Leading Edge Group and Edward Sweeney of NITL photographed in Cork at the recent launch of their new collaboration

NITL in China

Since NITL was founded 12 years ago we have actively engaged in collaborative endeavours with both universities and industry worldwide (Europe, the US, Australasia and the Middle East). We firmly believe that



Antonio de Linares (NITL) delivers a presentation to students at Wuhan

without this international exchange of knowledge and ideas it is impossible achieve excellence in SCM and logistics research and education. This is particularly true given the increasing globalisation of business and the concomitant emergence of more international supply chain configurations.

Consequently, NITL recently opened a new avenue of cooperation in China. DIT already has extensive experience of China, with collaborative ventures already established with several leading Chinese

universities in many academic disciplines. NITL's new initiative aims to build on this work by forging new links specifically in the transport, logistics and SCM fields. As part of this work, Antonio de Linares of NITL was a guest in 14 Chinese universities in Wuhan, Nanjing, Dalian and Beijing recently. The meetings addressed potential collaboration in research, the exchange of lecturers and students, and the possible development of new internationally focused learning programmes. SCM and logistics is hugely important in China with its strong focus on export-driven growth as the key driver economic development.



Antonio de Linares (NITL) pictured with senior academics from Hubei University

NITL sees this work as the beginning of a sustained collaboration with a country which has such a prominent role in global SCM.



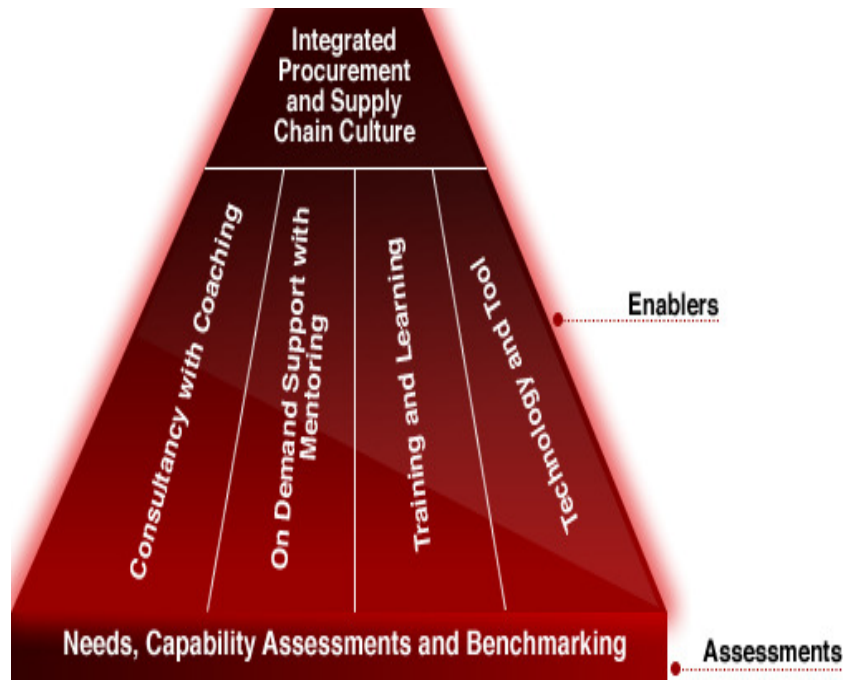
Dr. Robert Flood (Head of International Affairs DIT) & Antonio de Linares (NITL) pictured with senior academics from Beijing Institute of Technology

NITL Collaborates with MRM-Global

NITL today signed a Memorandum of Understanding (MOU) with MRM-Global. NITL will support MRM-Global in its objective of bringing a series of accredited training and education programmes in the area of integrated procurement and SCM to the market in Ireland and further afield.

MRM-Global was founded by Dr. Dermot Carey and is headquartered in Dublin, Ireland with offices in London and Dubai. It has been serving customers by facilitating in the development and execution of integrated procurement and supply chain solutions so that they can attain higher profits. Its service solution offering is depicted in the diagram. NITL will work with MRM-Global mainly in the 'Training and Learning' space.

At the signing of the MOU,



Dr. Carey commented: "A driving force behind SCM is the recognition that sub-optimisation occurs when each organisation in the supply chain attempts to optimise its own results rather than to integrate its goals and activities with other departments

and organisations to optimise the results of the chain. The programmes that we will develop in collaboration with NITL will be based on the need for an integrated approach to procurement and SCM". Edward Sweeney of NITL stated that: "MRM-Global and NITL share the same philosophy in terms of the need for supply chain integration. NITL looks forward to working with Dr. Carey and his colleagues to address the urgent need to provide high quality, commercially relevant SCM programmes for companies across all sectors".

There is a feature article by Dr. Carey and MRM-Global CEO, Andre Verdier in this issue which examines some of the key aspects of the integrated SCM concept in more detail.

LOGISTICS IRELAND

Ireland's Premier Supply Chain
Management Conference

DYNAMIC SUPPLY CHAIN MANAGEMENT AND
LOGISTICS LEADING THE RECOVERY

OCTOBER 19TH 2010

CROWNE PLAZA HOTEL (SANTRY)

NITL Masters Programmes Recognised by IIPMM

NITL's M.Sc. programmes in supply chain management have been formally recognised by IIPMM, Ireland's Procurement and Supply Management Institute. In doing so, IIPMM recognises that the programmes meet the standards required by the profession and afford graduates the opportunity of becoming full members of the Institute. This accreditation is recognition by IIPMM that the M.Sc. programmes develop professionals that achieve a high standard of expertise and professionalism.

Commenting on the accreditation, Des Crowther, CEO of IIPMM, stated that "We

believe this recognition will promote both the professionalism of procurement and supply management but will also enable a closer collaboration to be built between NITL and IIPMM. This recognition is based on the reputation for excellence that both NITL and DIT have earned

in Ireland and abroad".

Echoing these sentiments, Edward Sweeney of NITL stated that "this accreditation is further recognition of our efforts to develop leading edge postgraduate education programmes that are both academically excellent and relevant to the evolving needs of the dynamic marketplace. NITL looks forward to building on its existing collaboration with IIPMM in a number of areas".

For further information about the work of IIPMM visit www.iipmm.ie.



New Book on Supply Chain Innovation Announced

NITL is delighted to be associated with a new book which will be published by IGI Global later this year. *Supply Chain Innovation for Competing in Highly Dynamic Markets: Challenges and Solutions* will be edited by Edward Sweeney of NITL and Prof. Alan McKinnon of Heriot-Watt University, along with colleagues from the University of Naples "Federico II", Dr. Pietro Evangelista Prof. Emilio Esposito.

Innovation is a fundamental component of business success as it allows companies to sustain profit margins, increase sales and to gain a competitive edge. The rapid changes in technological development are forcing business organizations

to continuously look for innovative strategies to improve their competitiveness and, in many cases, this has revolutionized the way companies operate and conduct their business. This is particularly evident in the logistics and supply chain management (SCM) context where innovation impacts both at the strategic and operational levels. This book will provide relevant theoretical frameworks and the latest empirical research findings in the area. It investigates the role and the impact of innovation on four critical areas in the management of contemporary supply chains. The first area focuses on supply chain

integration from both strategic as well as operational perspectives. The second part is focused on the impact of information technology related innovation in the supply chain and logistics service industry. The third part of the book analyses the environmental innovation affecting logistical decisions throughout the supply chain and the strategies employed in managing logistics-related environmental impacts. The fourth part of the book deals with the theoretical and practical implications of innovation in the management of supply systems.

For further information visit www.igi-global.com

Details of Logistics Ireland 2010 Announced

LOGISTICS IRELAND

Ireland's Premier Supply Chain
Management Conference

NITL, in partnership with the Chartered Institute of Logistics and Transport (CILT) Ireland, is delighted to announce details of the programme for *Logistics Ireland 2010*. Now in its twelfth year, Ireland's premier SCM and logistics event promises to be the best yet with speakers from a range of backgrounds and with a wealth of leading edge knowledge. The event, on October 19th, will again take place at the Crowne Plaza Hotel in Santry. The conference theme is *Dynamic Supply Chain Management and Logistics leading the Recovery* and confirmed keynote speakers include Dr. John Gattorna, Jim Shuman, Marcel Kars, Joe Reynolds and Prof. John Mangan.

Over the last 25 years, John Gattorna has earned an international reputation in the SCM field. He is a renowned lecturer and task force leader, and has a strong conceptual capacity, combined with a pragmatic approach to solving complex business problems. Despite a demanding work schedule in industry and commerce John has been, and still is, a prolific writer, having published 10 books and numerous articles in his areas of interest. His most recent book, *Dynamic Supply Chain Alignment - A New Business Model for Peak Performance in Enterprise Supply Chains Across All Geographies*,

was published by Gower in June 2009. See www.johngattorna.com for more information about John's pioneering work.

Jim Shuman is Senior Vice President of Materials Management at Genzyme Corporation, one of the world's leading biotechnology companies, based in Cambridge, Massachusetts. Since 1981, the company has grown from a small start-up to a diversified enterprise with more than 12,000 employees in locations spanning the globe and 2008 revenues of \$4.6 billion. In 2007, Genzyme was chosen to receive the National Medal of Technology, the highest honour awarded by the President of the United States for technological innovation. Since its establishment in 2001, Genzyme Ireland – based in Waterford – has expanded rapidly and continues to ramp up its manufacturing output, increasing employment and investing in site infrastructure. See www.genzyme.com for more information about the company's global operations.

Marcel Kars is Vice President 3i Competence Centres at Zetes. Zetes Industries is a leading pan-European company in the value-added solutions and services industry for automatic identification of goods and people ('Goods ID' and 'People ID'). Established in 1984 with headquarters in Belgium, the company has grown both organically and through acquisitions, and today has subsidiaries in 13 countries including Ireland. The Company currently has around 800

employees and generated revenues of €178 million in 2008. The Zetes 3i Competence Centres mainly look for ways of improving the performance of the logistical chain through innovative solutions integrating different types of technologies. Zetes customers are in retail, manufacturing, transport and logistics, government, banking and insurance, utilities and healthcare. For more information about Zetes Ireland visit www.zetes.ie.

Joe Reynolds is Chairman of Reynolds Tankers Group. Reynolds Group (www.reynoldslogistics.com) traces its history back to 1928 when it was in the road materials business. Joe's extensive experience in the transportation business with the publicly-quoted CRH Group led him to identify a need to provide a specialised transport and distribution service for the oil industry in Ireland. The family-owned business has its headquarters in Dublin and has a strong Reynolds family involvement in day-to-day management. Reynolds Logistics – and the Reynolds Group of companies – has enjoyed outstanding and consistent growth since its formation. Today, it is universally recognised as the leader in its field and its sphere of operations has since expanded to the UK and Europe. Reynolds Logistics was awarded second place and the silver medal in the European Transport Company of the Year 2009 and was recently named Irish Haulier of the Year 2010 at the third annual Fleet Transport Awards. The company has been under the direction of the

now Chairman, Joe Reynolds, since 1979.

John Mangan is Professor of Marine Transport and Logistics at Newcastle University, UK. He joined Newcastle from the University of Hull in September 2008 where he held the Peter Thompson Chair in Logistics. Prior to this he held academic posts at University College Dublin and at The Irish Management Institute / Trinity College Dublin. A native of Ireland, John held a number of roles prior to embarking upon an academic career: he worked as a freight clerk with Aer Lingus, as an analyst with the Irish Airports Authority, as a graduate trainee in the Irish Civil Service (in both the Marine and Finance departments), and as company secretary of a seaweed harvesting company. His specialist expertise is in global logistics (international trade, international transport, and global logistics and supply chain strategies) and marine transport (port governance and management, port-centric logistics, and port route choice). John also has a keen interest in management and skills development in logistics and transport, and in research philosophy and methodology.

In addition to the keynote speeches, *Logistics Ireland 2010* will incorporate an Expert Panel Q&A session and provide unrivalled networking opportunities for sponsors and delegates. For further information about the event contact the Event Manager, Pamela O'Brien at NITL (pamela.obrien@dit.ie).

Edward Sweeney appointed to International Advisory Board of Supply Chain Logistics Group

The Supply Chain Logistics Group (SCLG) recently announced the appointment of Edward Sweeney of NITL to the post of International Advisor. He joins an elite group of advisors based around the globe who together form a network of thought leaders in logistics and supply chain management (SCM). The group includes John Gattorna (one of the keynote speakers for *Logistics Ireland 2010*) and Alan Waller, Visiting Professor at Cranfield School of Management and Past President of CILT (UK).

Commenting on the appointment, John Halpin, President of SCLG Ireland said, "As an inclusive organisation it is SCLG's core philosophy to engage with like minded professionals and industry representative bodies internationally. There are no borders within the supply chain and it is imperative in these challenging times to collaborate, share intelligence and promote the industry on a positive footing. The appointment of Edward to the SCLG board of International Advisors provides a strong link between SCLG and NITL and provides both organisations with added value options for students, members and stakeholders".

Dr Dermot Carey, European Development Director for SCLG welcomed the appointment and echoed the sentiments of his SCLG colleagues by saying "It is a significant appointment for SCLG and having an individual of Edward's calibre working closely with us can only strengthen the bonds between supply chain



professionals in Ireland and the Middle East. I look forward with great enthusiasm to working with Edward and his NITL colleagues".

Speaking of his appointment, Edward Sweeney said "Bridging the current gap between supply chain academia and the commercial world of supply chain practitioners is at the core of both NITL and SCLG philosophy and this forging of links between two internationally recognised supply chain associations will play a significant role in bringing the two strands closer together".

The Supply Chain & Logistics Group (SCLG) of Middle East is a non-profit organisation established to promote the cause of SCM and logistics. The group operates with the legal backing of the Dubai Chamber of Commerce and Industry and is founded with the help of senior management professionals representing variety of industries. SCLG strives to bring the best of education, seminars and interaction through partnership and alliances with a variety of similar bodies across the globe. For more information please log on to www.sclgme.org.

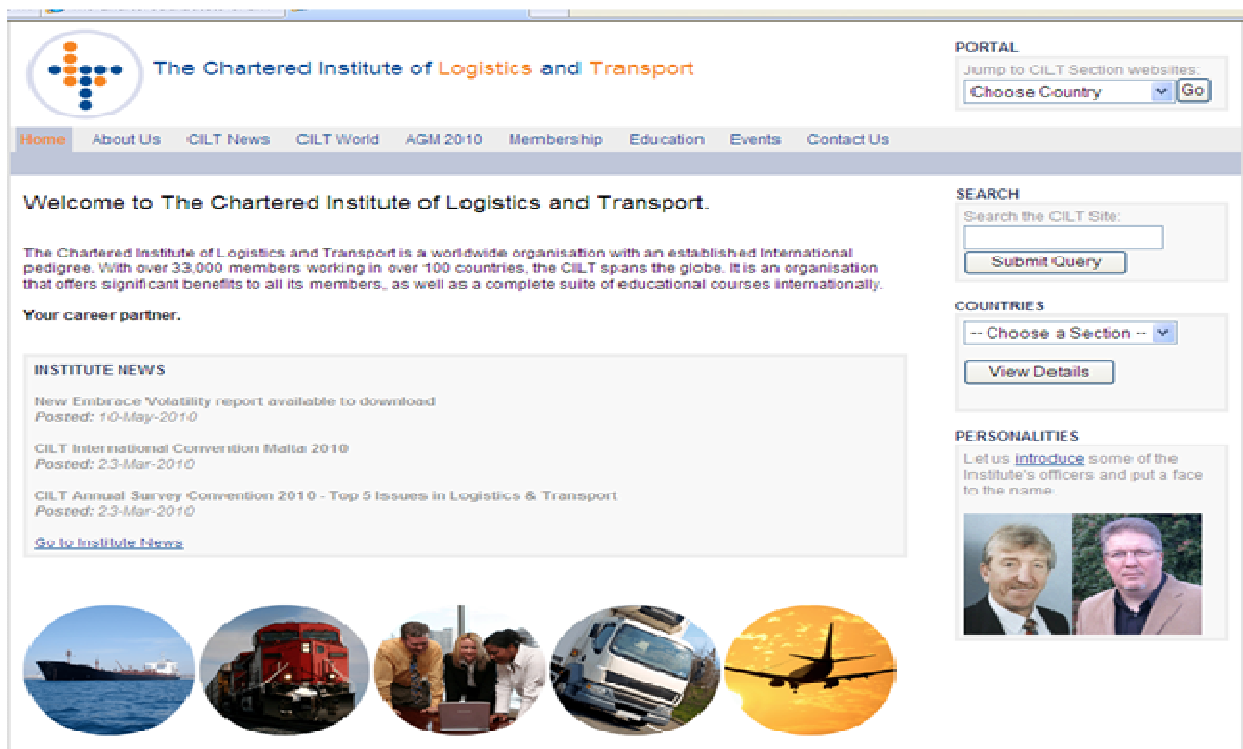
USEFUL WEBSITES

In the last issue of *Supply Chain Perspectives* we reviewed the websites of three leading Irish professional bodies in logistics and supply chain management (SCM) – the Chartered Institute of Logistics and Transport (CILT) Ireland, the Irish Institute of Purchasing and Materials Management (IIPMM) and IPICS (the Supply Chain Management Institute). Each of these bodies is associated with a larger international organisation. In this issue, we review the websites of these international bodies.

CILT International — www.cilt-international.com

The Chartered Institute of Transport (CIT) The Chartered Institute of Logistics and Transport (CILT) International is a worldwide organisation with an established international pedigree. With over 33,000 members working in over 100 countries, CILT spans the globe. It is an organisation that offers significant benefits to all its members, as well as a complete suite of educational courses internationally.

Its website provides information about all aspects of its global operation. Of particular note, it allows access to CILT WORLD - the members journal for the Institute. This publication carries news about the logistics and transport sector, as well as news and releases from the Institute. The website also has information about Institute membership and internationally recognised qualifications in transport and logistics. Of particular note is the information about the CILT International 2010 AGM held in Malta in May.

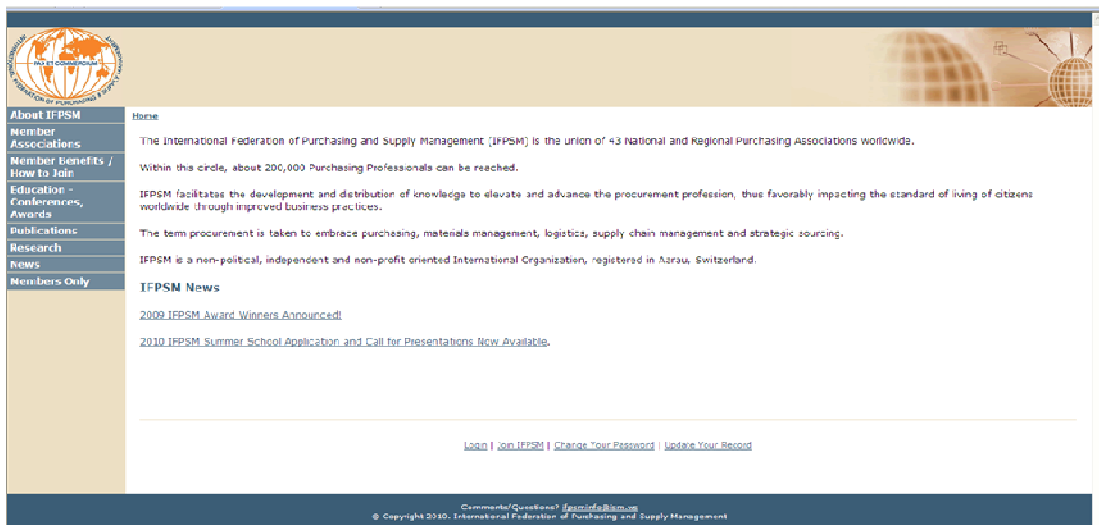


IFPSM— www.ifpmm.org

The International Federation of Purchasing and Supply Management (IFPSM) is the union of 43 National and Regional Purchasing Associations worldwide. IFPSM takes part in the following activities:

Professional Development	Membership Development
Global Education and Training	Public Relation and Publications
Certification Programmes	Research Centers
Federation Awards	World Congresses and Regional Conferences

The website provides useful information about all of these activities. The Irish Member Association of IFPSM is the Irish Institute of Purchasing and Materials Management (IIPMM); the UK Member Association is the Chartered Institute of Purchasing and Supply (CIPS – see www.cips.org).



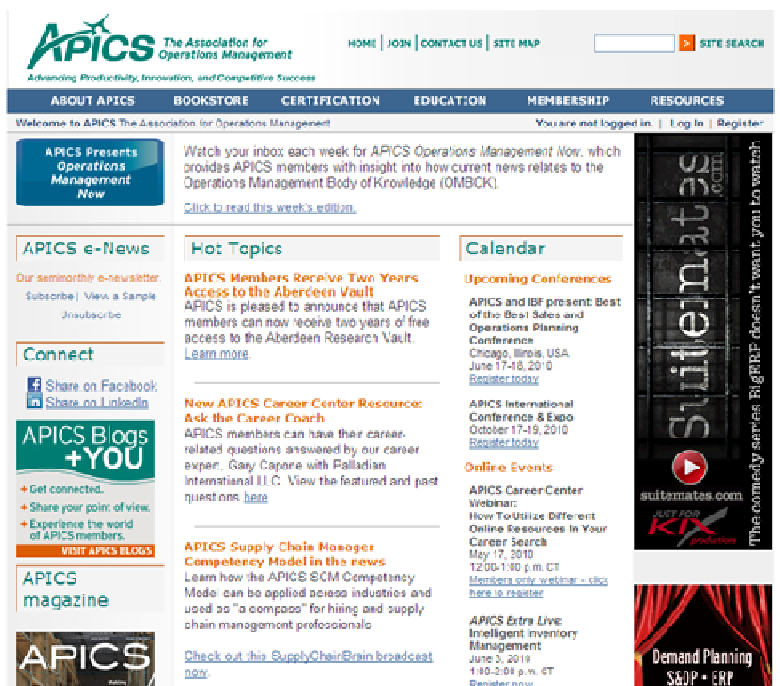
APICS— www.apics.org

The Association for Operations Management is focussed on operations management, including production, inventory, supply chain, materials management, purchasing, and logistics. It has been in existence since 1957. Its Mission is:

APICS builds knowledge and skills in operations management professionals to enhance and validate abilities and accelerate careers. We help our members and their organizations successfully compete and build a stronger global economy.

Its website is information-rich and easily navigable, providing information about the Association's certification programmes, as well as its extensive education programme. It also has a bookstore and a resource centre. APICS has International Associates throughout the world. The International

Associate in Ireland is IPICS – the Supply Chain Management Institute.



Change Management

Strategic Plans: barriers to change?

By Gerry Glynn

Introduction

One of the trendy catch phrases in circulation today is 'change management' and if you are not on the change management bandwagon then you are doomed to failure! If asked, most companies they will tell you 'we are working to a strategic plan', but how do those who profess to be practitioners of managing change know with certainty what changes are need to be made?

The purpose of this article is to examine why in general, strategic plans are not all that useful in managing change.

Change and Strategy

It has been said that there are three types of organisation:

- Those who make things happen
- Those who watch things happen
- Those who wonder what happened?

If your organisation is in the first category then you are obviously doing the right things and are successful at what you do, so just skip ahead and read the next article. If you are in the second and third category then you are part of the majority who are desperately involved in a daily battle to keep the business alive.

While we understand and accept that change is an ever present and continuous process, because it is uncomfortable and inconvenient, many of us do not like the idea of change particularly when we are the focus of whatever change is happening. We put a lot of energy and effort into getting things right and suddenly for a variety of reasons, usually beyond our control, the world around us changes.

Organisations spend a lot of time and money putting 'strategies' in place to reduce variability and improve consistency. We strive to replicate exactly what we have produced in the past; we put procedures in place that must be followed to the letter. These are controlled using non-conformance and corrective action procedures and we endeavour to comply with agreed standards - be they driven internally by costs or by conformance with our operating procedures. There may even be external forces at work in the form of ISO, FDA or other regulatory bodies that affect the standards in our industries, to which we must conform so as to retain our registration with them.



It is not that these regulatory agencies are anti-change. In fact it is often quiet the reverse with many advocating continuous improvement – but the pursuit of continuous improvement can have its pitfalls. If we are totally focussed on looking for ways to continually improve our products or services we can miss out on the bigger picture and fail to recognise new opportunities or radical changes being driven by such factors as: competition; customer preferences; technology; legislation; political factors and even possible strategic alliances.

Company Culture

Some of the problems we have with getting staff to change is because we spend so much effort in getting them to behave in a certain ways so as to 'fit' with the culture of the company. Many organisations have induction programmes that are

specifically designed to convert new staff into 'company people'. In their first days/weeks in the organisation they are required to embrace the company culture totally because it is the very adhesive that binds the company together. It provides the appropriate standards for what employees should say or do, thus reducing any anxiety they may have about not knowing how to behave.

Because a company's culture provides the 'known' working environment it in turn becomes the most difficult thing to change. Culture can also dictate the type of structure we have and this can cause the organisation to be unable or unwilling to institute the changes required because the structure and systems contain built-in barriers that are designed to prevent the changes we need taking place!

So how can structure inhibit change? Most of us would aspire to belong to a flat structure or what Mintzberg (1999) refers to as the 'professional bureaucracy' where there is no elongated hierarchy, where bureaucracy is at minimum, where good communication is a regular feature, and where information is freely available and widely circulated. This type of structure is not totally ideal and has drawbacks, but is generally conducive to change initiatives taking place.

However, the typical structure in the majority of Irish compa-

nies is the traditional hierarchical and bureaucratic form of organisation, with clearly defined positions and roles. Staff (and that includes line managers) have infinite responsibility and accountability, but little authority to make even modest change. Information is jealously guarded and only shared on a 'need to know' basis. This type of working environment not only inhibits change but actively discourages it.

A Felt Need

For change to take place the need for change must exist and that need must be a felt need (Bass, 1976). But that felt need must be universal through the organisation – unless we actually feel the need to do something, we don't do it! There are three approaches to managing change (rational, emotional and political) and if all of these dimensions are not managed properly our intended changes may end in disaster.

On a rational level, all of us at one time or other have seen the need for change but our reluctance to act is often brought about by our perception that we will be blocked by the next link in our internal supply chain – i.e. they do not share the same felt need for change.

On an emotional level our staff (i.e. internal customers/suppliers), or even the external partners in our supply chain,

react negatively to the changes we might have in mind. It is probable that as they were not consulted in the change planning process, they do not share this felt need but they know that whatever changes are made, will in some way affect them. So instead of embracing the programme for change they resist this unwanted imposition and prefer to operate the in way they have always done.

And on a political level the reasons may lie among another set of variables, for example we can have:

- systems that embody outdated assumptions;
- a style management that is at odds with the stated strategy (if indeed we have a strategy at all?);
- an absence of shared values or culture that binds the organisation together in pursuit of a common purpose; or,
- a refusal by the company to deal concretely with so called 'people problems', many of which have been caused by poor management practices in the first place.

The Ubiquitous Five-Year Development Plan

From the moment of their inception all companies have plans in one form or other. In the beginning the founders produce a business plan for presentation to the bank or lending institutions. This plan is usually forgotten about once the loan is

secured; however, it may be revisited/updated when another visit to the bank is required to secure further funding but alas this revised plan is also destined to the same fate as its predecessors. However, with the passage of time and the expansion of business the need arises for some form of written plan which is now referred to as the 'strategic plan'.

Indeed, it is common practice for many companies to have a five-year strategic plan and its formulation probably involves a group of senior managers using a considerable amount of time over many months. The contents of the plan are generally based on historical evidence and trends, creating safe assumptions based on the known behaviours of how customers, suppliers, processes and products are likely to perform, along with the performance patterns of supply chain partners in activities such as purchasing, production, storage, distribution or sales.

This form of planning is useful for coping with incremental change as it occurs in the task environment. We endeavour to improve the status quo by making modest adjustments to our structures and systems. We adjust or vary our market mix. We look for ways to reduce or add products, customers or services. We may even give consideration to reducing the number of managers and staff we employ. We move towards tightening mana-

gerial control, scrutinising financial practices and putting pressure on the workforce – requiring both managers and staff to do more, for less, all in the hope that everything will work out right.

Because the planning process has taken so much time and effort, once the plan has been signed off, instead of developing tactics on how to implement it - the people who formed part of the planning team - besides being thoroughly sick of the process - are happy to just settle back into their 'day jobs' to get some 'real' work done – "we've done the plan, our job is finished"!

A Job Well Done

The new plan is looked upon with admiration and pride by all those involved as a job well done and within this air of achievement, once the document has been selectively distributed to those who matter it is placed on the shelf along with all of the other important documents and thereafter quietly ignored. That is not to say that the plan is totally useless. Far from it - the document is viewed as a valuable (if not somewhat decorative) publication to be pulled out for presentation purposes to be shown to important clients, lending agencies and/or to be used for PR purposes. Alternatively, the strategic plan can be regarded by some companies as their Bi-

ble because that is what was agreed and so must be done.

Think of the Millennium and all the things that happened around that time – it seems like only a few years ago and yet so hard to believe that ten years have passed. Now think of the changes that have taken place not during the whole of that period, but say in the last five years, and ask yourself how many of those changes where you prepared for? Did they arise out of the blue or did you anticipate their advent and have contingencies in place to meet their demands?

Our present Government presented a strategic plan (manifesto, NDP - call it what you will) to the electorate in the run up to the last general election. But where in their manifesto did they plan for: the change of Taoiseach; satisfying the needs of their coalition partners; the gaps (or opportunities) brought about by the resignation of government ministers; the downturn in either the Irish and global economy; or, the difficulties caused by the Bankers and their (unregulated) policies of lending enormous amounts of unsecured loans to developers and builders?

One day Alice came to a fork in the road and saw a Cheshire cat in a tree.

'Which road do I take?' she asked.

'Where do you want to go?' was his response.

'I don't know' Alice answered.

Then, said the cat, 'It doesn't much matter'

Lewis Carroll in 'Alice in Wonderland'

Conclusion

It is an accepted fact that we need plans in one form or other, if only to manage incremental change. But is that good enough? And, if not, what is the alternative to our traditional form of planning? The principal problem lies in how we approach the task in the first instance. By its very nature a strategic plan affects everyone in the company, but not everyone is (allowed to be) involved in its creation. Yes, it is management's task to produce the finished product but why is it that senior management are the only ones who have the knowledge or information required to formulate the strategic plan for the company? Perceived wisdom shows that unless all of those affected by the plan are also involved in its conception, development and implementation, it will not work!

So where does that leave us with preparing to manage change, particularly the type of changes that we did not plan for? In a future article we will look at ways to overcome or avoid some of the pitfalls identified. We will look at ways of identifying plausible futures (scenarios) and of developing a

set of strategic options, which while not necessarily congruent with each other, will nonetheless equip us in meeting the eventualities that the future has in store.

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Photograph by Elena Plaza Martin

Supply Chain Change Management: an internal and B2B relationship perspective

By Edward Sweeney

Introduction

Increasingly competitive markets, more discerning customers, globalisation of markets for inputs and outputs, shortening product life cycles and vertical disintegration have all combined to place supply chain management (SCM) at the core of the strategy development process. SCM was first introduced by consultants in the early 1980s (Oliver and Webber, 1982) and is now the subject of extensive debate in both commercial and academic circles. In essence, SCM is concerned the management of supply chain processes with a view to: optimising total supply chain investment and cost; and, meeting or exceeding customer service requirements in targeted markets/segments.

This is achieved through the integrated management of materials, financial and information flows throughout the chain. The notion of integration is central to SCM and has a profound im-

pact on the nature of business-to-business (B2B) relationship management. This article discusses supply chain and internal (i.e. intra-firm) integration, before moving on to a discussion of B2B integration specifically. It highlights the need for re-evaluation of relationships in the context of the supply chain change process.

Supply Chain Integration

Analysis of the historical evolution of SCM, and indeed of the many definitions of SCM which have been proposed, shows that the concept of integration lies at the heart of SCM philosophy. Cooper et al. (1997) specifically described SCM as “an integrative philosophy to manage the total flow of a distribution channel from supplier to the ultimate user”. The work of Fawcett and Magnan (2002) identified four levels of integration in practice:

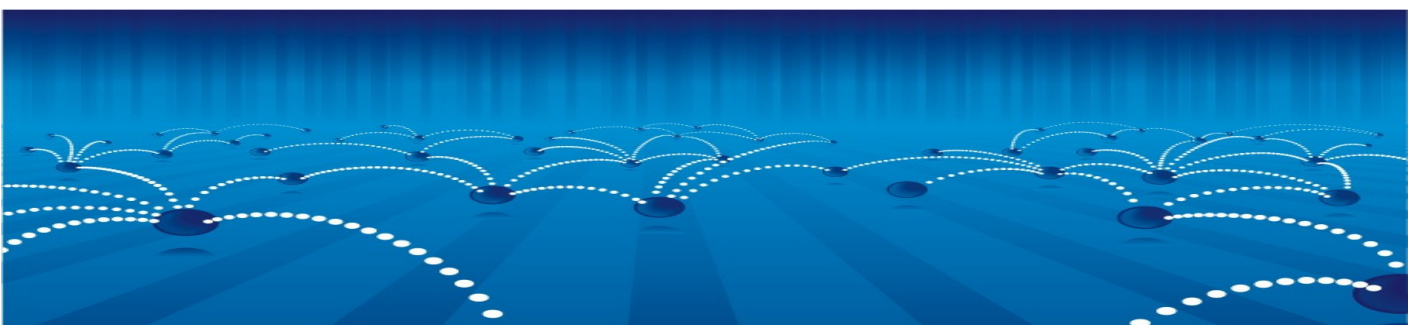
1. Internal cross-functional integration;
2. Backward integration with

valued first-tier suppliers;
3. Forward integration with valued first-tier customers; and,
4. Complete backward and forward integration (‘from the supplier’s supplier to the customer’s customer’).

The first of these relates to integration of activities and processes which are carried out within a single organisation (i.e. internal or micro or intra-firm supply chain integration). The others describe varying degrees of integration of activities which span the boundaries of organisations (i.e. external or macro or inter-firm supply chain integration), with the last one being viewed as the theoretical ideal. The following sections discuss internal and external integration in more detail.

Internal Chain Integration

The phrase ‘internal supply chain’ is used to describe work aimed at breaking down the barriers between functions within organisations. Most busi-



nesses – certainly manufacturing-based business - can be described in terms of the five key supply chain activities: *buy*; *make*; *store*; *move*; and, *sell*. This is what is referred to as the internal (or micro or intra-firm) supply chain. Traditionally these functions have been managed in isolation, often working at cross purposes. SCM means thinking beyond the established boundaries, strengthening the linkages between the functions, and finding ways for them to pull together. A recognition that the 'whole is greater than the sum of the parts' calls for more effective integration between purchasing and procurement (*buy*), production planning and control (*make*), warehouse management (*store*), transport management (*move*) and customer relationship management (*sell*).

The desirability of achieving seamless integration is not something which is unique to SCM. Organisations have long realised the need for company-wide approaches to organisation design and re-engineering. The development of systems engineering approaches to manufacturing system redesign in the 1970s and 1980s (see, for example: Hitomi, 1996) was followed by the focus on organisational re-engineering, often based on business processes, in the 1980s and 1990s (see, for example: Hammer and Champy, 1993). A common feature of these approaches was a recognition that 'the whole is greater than the sum of the parts'. In

other words, optimising subsystems (whether those subsystems are functional departments, production sites or individual processes in the manufacturing cycle) can result in a sub-optimised total system. Lack of efficiency and/or effectiveness is often a result of the poorly designed interfaces between subsystems rather than any inherent subsystem weaknesses. There are numerous examples of companies who have generated significant improvements in competitive advantage as a result of the application of this *total systems* thinking.

B2B (External Chain) Integration

Every product or service is delivered to the final consumer (the only source of 'real' money in the chain) through a series of often complex movements between companies which comprise the complete chain. An inefficiency anywhere in the chain will result in the chain as a whole failing to achieve its true competitive potential. In other words, supply chains are increasingly competing with other supply chains rather than, in the more traditional axiom, companies simply competing with other companies. The

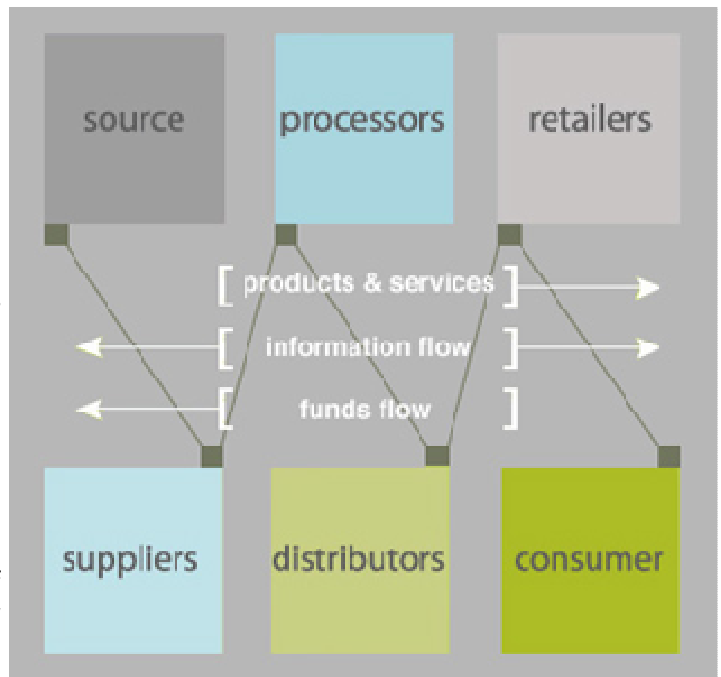


Figure 1: The B2B (External) Supply Chain

phrase 'supply chain' is used to indicate that the chain is only as strong as its weakest link.

The simplistic representation in Figure 1 (above) of an external (or macro or inter-firm) supply chain shows materials flowing from the raw material source through the various stages in the chain to the final consumer. Money (i.e. funds) then flows back down the chain. Information flow is bi-directional and its effective management is a critical success factor. The point is that every link matters and that value is added, and profit generated, at each link along the way.

In other words, the supply chain is increasingly viewed as a single process, with the various links (i.e. companies) in the chain needing to function in as seamless a manner as possible. All of the above raises serious

questions concerning the relationships which exist between customers and suppliers throughout the chain. In short, moving from fragmented to more integrated approaches inevitably requires changes to the ways in which both internal and external customer and supplier relationships are created and managed.

Supply Chain Relationships

SCM should not be a 'zero-sum' game based on adversarial relationships; rather, it needs to be a 'win-win' game based on partnership approaches. This point is relevant to the interactions between the key 'internal' supply chain functions of buy, make, store, move and sell, as well as to relationships between an organisation and its external customers and suppliers (i.e. B2B relationships). Several SCM definitions which have been proposed highlight the importance of relationship management. For example, the Council of Supply Chain Management Professionals (CSCMP, 2010) defines SCM as follows:

Supply chain management encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities. Importantly, it also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third party service providers, and customers. In

essence, supply chain management integrates supply and demand management within and across companies.

CSCMP, in discussing boundaries and relationships, goes on to state that SCM is an "integrating function", which "drives coordination of processes and activities with and across marketing, sales, product design, finance and information technology". The approach represented by this definition reiterates some of the earlier points and again has a strong emphasis on internal and external coordination and collaboration. In a B2B context, it specifically embraces the concept of "co-ordination and collaboration with channel partners". The final part of the definition provides a useful conceptual view of SCM and is noteworthy for its simplicity, with its focus on integration of supply and demand. Finally, Lambert et al. (1998) went even further by suggesting that, "Increasingly the management of relationships across the supply chain is being referred to as supply chain management (SCM)".

The Impact of Vertical Disintegration

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 and manufacturing are increasingly being outsourced to third-party organisations. This has resulted in a shift away from the traditional model of 'control through ownership' towards models which are based on management and control through effective supply chain relationship management. In short, as this process of vertical disintegration has taken place so supply chain architectures have become more virtual. The traditional fully vertically integrated approaches are being replaced by contemporary fully virtually integrated approaches – a new FVI is evolving. This has sharpened the focus on the need for the creation of appropriate relationship forms throughout the supply chain, as well as on their effective management.

'Appropriate' is the key word in this context as different relationship forms will be relevant in different situations. Relationship forms vary from short-term and (often) adversarial to long-term and more partnership-oriented. The trend towards the development of stronger relationships with fewer suppliers is one manifestation of this thinking. For example, early involvement by suppliers in the new product introduction (NPI) process requires that B2B relationships, based on mutual trust and benefits, as well as on shared goals and objectives – i.e. partnerships – are in place.

Conclusions

There can be little doubt that SCM is becoming a more important feature of the business landscape. Whilst there is considerable debate about exactly what activities SCM embraces, there is general agreement that activity integration is a core element of SCM philosophy. This has implications for the way in which relationships, both internally and in a B2B environment, are created and managed. Any effective supply chain change initiative must, therefore, have a strong focus on the creation and management of such relationships.

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Role of Lean in Improving Supply Chain Performance

By Stephen W Hardgrave

Introduction

'Lean' is set of principles and techniques aimed at reducing waste in all of its forms in order to improve operational performance and customer satisfaction. Its origins were in the automotive industry, specifically in the Toyota Production System (TPS), but over the past twenty years the same methods that were so effective in making Toyota the industry leader in quality and efficiency have been shown to be equally applicable in a wide variety of organisational environments. Lean has grown far beyond its original roots in manufacturing, and has been successfully implemented in areas as diverse as financial services, retail, and healthcare.

In particular, Lean has proven to be a powerful tool in improving supply chain performance. Many of the Lean tools and techniques are focused on improving the flow of a value stream—reducing the problems and delays caused whenever a handoff takes place from one functional area to another. Within a company these might be different departments, as a product moves from, say, manufacturing to quality control to shipping. Lean is about trying to reduce delays and drive down inventory levels by improving communication and accelerating the pace of a

process. These are equally applicable and valuable, in fact even more valuable, when the process involves multiple organisations in a supply chain rather than a single company.

Lean Thinking

To truly embrace Lean it is necessary to think and behave in ways which are quite different to traditional hierarchical organisations. Lean thinking has been defined as:

the dynamic, knowledge driven, and customer- focused process through which people in a defined enterprise continuously eliminate waste with the goal of creating value.

Lean is a systematic approach to identifying and eliminating waste or non-value-added activities (NVAs) in a supply chain through continuous improvement. This is achieved by enabling the flow of a product or service at the pull of the customer in pursuit of perfection. The term 'Lean' is applied to a supply chain because a lean supply chain utilizes less of everything: less human effort; less space for manufacturing and distribution space; less capital investment; fewer materials and services; and reduced time between the customer order and shipment (lead time).

The Principles of Lean Thinking

There are five principles that are fundamental to lean thinking:

- **value** defined in terms of the customer;
- a **value stream** that serves to create that value for the customers;
- the continuous **flow** of value through that stream;
- **pull** from later processes to earlier ones;
- and the relentless pursuit of **perfection**.

These principles need to be applied on a continuous basis because a supply chain is always changing.

Value. Any transformation process that the customer would be prepared to pay for adds value. In a lean supply chain it is the customer alone who defines the value of product. Value-adding activities transform the product closer to what the customer wants, while NVAs consume time or effort but do not create customer value. Any activity that does not add value is considered to be waste, or 'muda' (the Japanese for waste) as it is sometimes called.

Value stream. The value stream is the end-to-end collection of processes that create value for the customer. The value stream can include people, tools and technologies, physical facilities, communication channels, and policies and procedures.

Flow (Continuous). Flow refers to the linking of all activities and processes into the most efficient combinations to maximize value-added content while minimizing waste. The stagnation of work in between processes is eliminated.

Pull. Pull refers to the actual customer demand that drives the supply chain. It is a system based on a cascading supply chain from downstream to upstream activities in which nothing is produced by the upstream supplier until the downstream customer signals a need. Ultimately the entire system, the complete value stream, is driven at a pace which is determined by end customer demand.

Perfection. Striving for perfection involves ongoing continuous improvement activity that is aimed at achieving better results. Perfection is an ideal which is never reached, so anything and everything can always be improved.

The Evolution of the Lean Supply Chain and “Lean Enterprise”

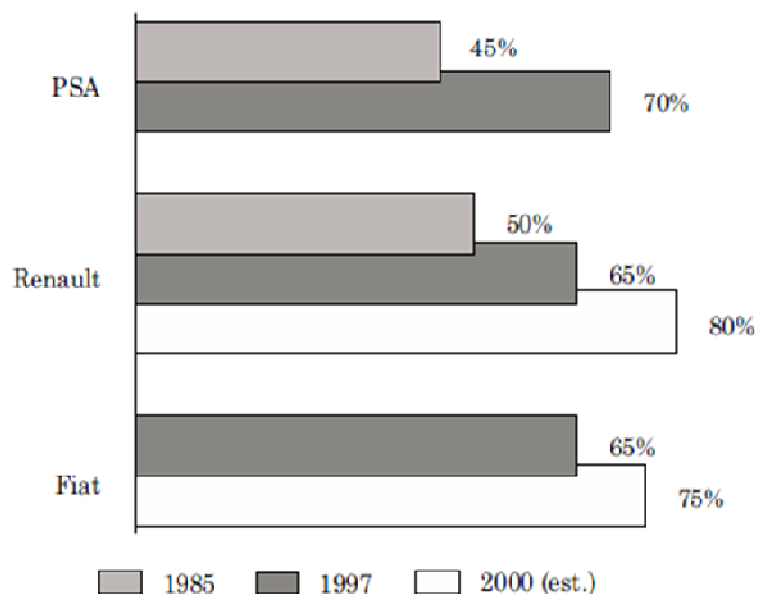
In most industries, any one particular company provides only a relatively small portion of the total value in a finished product. Therefore using Lean techniques to improve the processes within a company will never have as much total impact as applying them across the broader supply chain. Figure 1 shows that in the automotive industry, the birthplace of Lean, there has been an increasing trend to outsource more and

more of the total value of a vehicle. This shows that for these three European auto makers the percentage of a car’s value that is delivered by suppliers has grown from about 50% in 1985 to around 75% by 2000, and that trend has continued since then and is also typical of other car manufacturers.

Fortunately the Lean techniques that have proven so effective in improving performance within companies have also been shown to be equally applicable across a broader supply chain. The principles of pull, level-loaded work and synchronisation from one step to the next are relevant whether those steps are within one company or between a supplier and customer in a broader network. The phrase “Lean Enterprise” is often used to denote a cooperative effort to implement

Lean beyond a single company, by including suppliers, partners, and customers who must all interact in the creation of value.

The trend to implement Lean beyond the “four walls” of an individual company and expand its use to the broader multi-organisation enterprise has evolved over several decades. In the 1960s the Toyota production system (TPS) was applied within factories, with the aim of increasing manufacturing efficiency. By the 1970s and 1980s, as companies expanded and became more global, with more complexity in the supply, distribution, marketing, and servicing of products, the focus was on quality improvements and effective process control. In the 1990s Lean principles were extended from mainly a production focus to the wider enterprise including subsidiaries,



Source: The Economist Intelligence Unit.

Figure 1: Increasing Vehicle Outsourcing (% of car value)

distributors, third-party contractors and other involved parties.

In the past ten years the Lean supply chain has been derived from the strong need and desire within industry to apply the core principles of Lean Thinking right through the supply chain, from raw material supplier to end consumer. There is recognition that real competitive advantage can be leveraged from a sharp focus on the supply chain. This growing emphasis on Lean coincides with the development and use of advanced information and planning systems to capture 'real-time' information. A paradigm shift from a forecast-driven to a demand-driven model has occurred with continued refinement of demand forecasting..

What is a Lean Supply Chain?

A Lean supply chain has been defined as "One that produces just what and how much is needed, when it is needed, and where it is needed. The most important thing to remember is that Lean is not simply about eliminating waste – it is about eliminating waste and enhancing value." (Bruce Tompkins)

In a Lean supply chain, it must be the customer who defines the value of a product. Waste, therefore, can be defined as anything that does not add value from the customer's perspective. Many activities add cost to the product but they may not add value. Therefore, because the price the customer pays covers the cost of manufacture, the customer is

ultimately paying the price for all the waste in the manufacturing process.

Waste can be incurred in several ways. It may be an inbuilt part of the product design or specification. It may be due to inefficiencies in the manufacturing process or in the activities that support manufacturing such as procurement, inventory management and distribution.

Components of a Basic Lean Supply Chain

The characteristics that follow may be used as guidelines in developing a Lean supply chain system (see Table 1).

Lean suppliers. Lean suppliers can react to changes. Their prices are generally lower because of Lean processes, and their quality is excellent. Therefore, incoming inspection at the next step is not required. Lean suppliers deliver on time and thrive on continuous improvement. They generally work to a proactive long-term goal.

Lean procurement. Some Lean procurement processes can consist of e-procurement and automated procurement. E-procurement conducts transactions and bidding using IT applications. Automated procurement uses software that removes the human effort from multiple procurement functions and integrates with financial systems.

Lean manufacturing. Lean manufacturing systems produce what the customer wants, in the quantity and delivery timeframe required with minimum resources.

Lean warehousing. Lean warehousing means eliminating non-value-added steps and waste in product storage processes.

Lean transportation. Lean concepts in transportation include: improving administrative processes and automated functions, combining multi-stop truckloads, cross-docking, right-sizing equipment, and minimising empty backhauls.

Lean customers. Lean customers value speed and flexibility

	Traditional supply chain	Lean supply chain
Production	Based on forecast	Based on actual orders
Customer service	Not responsive	Responsive/flexible
Plant layout	By function/department	By product flow (cell)
Planning and scheduling	Limited/haphazard	Detailed/long term/focused
Processing	Batch and queue	Continuous (team leaders)
Quality	Lot sampling	Assured by the process
Logistics	Cost based/limited focus	Develop 'value' logistics
Supplier	Adversarial/win-lose	Partnership/ win-win
Returns/recyclables	Very limited	Growing and essential
Environment	Poor awareness	Integral for sustainable companies
Information Technology	Slow/manual	Fast/automated

Table 1: Comparison of a traditional and a Lean supply chain.

and expect high levels of delivery performance and quality. Lean customers expect value from the products they purchase and provide value to the consumers who they interact with.

Key Aspects of Lean SCM

Customer relationship management. This involves working openly with key customers to ensure a 'win-win' ethos. It is critical to be close to the customer in order to understand their needs, values and requirements. Excellent companies utilize such intelligence in a proactive fashion often enabling them to actually anticipate customer needs. At a secondary level, this close customer contact ensures processes such as end distribution and inventory levels are adjusted and controlled to suit the demand which helps in the elimination of demand variability and non-value-added activities.

Customer service management. Very often companies no longer sell a single product but include additional service level needs to suit customer requirements. For example, this may be regular free updates with the purchase of a computer software programme and direct links to technical experts for solutions to problems encountered. Or the realization, because of changing market dynamics, that more product information must be supplied. Constantly seeking improvements and

new ways of adding value for the customer are essential.

Demand management. This is a key element in 'leaning' the supply chain because customer demand is one of the biggest sources of uncertainty. A responsive sales forecasting team is a primary requirement. Integrating this team with the demand planners and schedulers is an essential element of a more responsive supply chain. Striving to break away from the 'silo' mentality is a dilemma for many larger organizations, but it needs to be dealt with effectively.

Order fulfillment and logistical flow. This involves the smooth integration of planning, manufacturing and logistics. This must be done not just within the enterprise but across the supply chain. Regular projects need to be undertaken that analyze distribution facilities and capacity, pipeline inventory and transportation operations. The key is visibility because suppliers must be able to 'see' into their customers' operations and customers must be able to 'see' into their suppliers' operations. This involves close liaison with upstream and downstream partners and suppliers.

Manufacturing flow management. Organizations must leverage manufacturing services and sourcing for flexibility and efficiency. In addition to just-in-time (JIT) and Lean operations, many leading companies have developed highly sophisticated outsourcing and subcontracting of different parts of their production or service needs. Others have collaborative partnerships with suppliers.

Supplier relationship management. The aim is to strive for long-term strategic supplier agreements that lead to ongoing collaboration. It can be a highly challenging objective, given that many suppliers will aim to retain an independent stance. However, leading companies have shown how effective these arrangements can be if approached with a win-win mentality. They encourage suppliers to make the Lean transformation and involve them in Lean activities. Deepening trust and undertaking mutually beneficial, innovative process improvements will in the long term achieve real gains and cost benefits.

Product development and commercialization. Time to market is dependent on smart design that allows for ease of manufacture and assembly. Experienced project and product development teams need to be in place to monitor and reduce cycle times and lead-times. You can create obvious competitive advantages by designing a process system that is Lean yet adaptable and easily altered to allow for upgrades and advances.

Environmental concerns. The issue of environmental awareness has become of vital importance to organizations. Manufacturers are being forced to ensure that a high level of materials used in manufacturing can be recycled. This means that manufacturers and their suppliers need to agree on compliance specifications and have facilities and processes in place to re-use and re-process the materials.

Case Study One: Healthcare Manufacturing

This company is a world leader in healthcare with a global manufacturing and market presence. This is an excellent example of a local manufacturing base having the vision to understand, adapt, change and position itself as a 'value' logistics provider and strategic manufacturer able to leverage the rapid change occurring at corporate level as the company merged and expanded.

The company had been the eight largest within its industry globally, with Ireland as a primary manufacturing site, and a strong focus on efficient and cost-effective production. About ten years ago the company expanded by acquisition, overnight becoming number four in their industry, with the sudden need for global rationalization across all functions including production. A new global manufacturing strategy was devised, which involved closing of several plants and significant realignment of products in others. The operation in Ireland survived the shake-up, but local management realized that manufacturing excellence alone could not ensure their future, but rather that Lean integration across the broader supply chain was necessary.

In the two years following the acquisition the company had continued to grow, rising to number two in their industry. They still used many locally evolved supply chains, but there was increasing awareness that improved supply chain management was necessary. A team was formed with the remit to harness internal knowledge across the company, benchmark world class companies in terms of supply chain management, and develop a global supply chain strategy.

Characteristics of original supply chain

Before the Lean project started, the existing supply chain was characterised by large inventories which were incorrectly positioned. There was no integrated inventory management system, and there were large customer backlogs—the customer endured lengthy waits for the products they had ordered. There was no accountability in the forecasting process and poor integration between operations and sales. Within the factories managers had developed the habit of hoarding inventory, 'just in case' they needed it later. Supplier development was weak, with no coherent strategy on outsourcing, and a lack of global sourcing policy. Production made product according to a monthly forecast, as opposed to real customer demand, sometimes resulting in unsold finished goods inventories, obsolescence, and scrappage. The company did not have a value stream-focused mindset, and consequently there was little focus on value-added activities, and low customer satisfaction because of poor delivery.

Lean change programme

A change program was initiated, comprising several elements. A global supply chain manager was appointed, who would primarily focus on front-end supply from production through distribution to sales. Similarly a global purchasing manager was given responsibility for back-end supply, covering strategic supply base development, outsourcing, design for low cost and vendor management performance.

A forecasting policy was implemented and communicated to and agreed with international sales organisations. New systems were introduced to improve forecast accuracy reporting by country and product type. Monthly standard operating procedure (SOP) meetings were held to review prior month performance and preview the upcoming month. Monthly reporting of inventories was shared at all partners across the supply chain.

Increased accountability was pushed out to the subsidiary level. Manufacturing improvements were made through use of kanbans, training, realignment of metrics to reflect customer satisfaction items, and with delivery performance taking precedence over internal efficiency.

The result of the Lean supply chain programme was substantial benefit to the business, and to all partners in the supply chain. Inventory was reduced in Year 1 by 22%, resulting in an improvement in working capital of over \$2 million. On time delivery performance to subsidiaries improved from 66% to 86%. The cost of purchased material was reduced by \$3.5 million annually within two years.

There are several lessons that may be learned from this case study:

1. The supply chain must be viewed in its broadest sense – you cannot optimize individual parts.
2. The key stakeholders must be convinced and supportive.
3. Supply chain initiatives must be built on tangible business and financial benefits.
4. Developing a better supply chain is hard work and needs to be driven strongly by people who believe in its benefits.
5. Global supply chains can be successfully managed from Ireland.

Case Study Two: Enterprise-wide Lean in Aerospace

The Lean Aerospace Initiative (LAI) is a partnership between industry, government and academia which is focused on driving Lean principles throughout the aerospace and aviation industry. It dates back to 1993, when it was formed at the urging of the US Air Force, and is run out of the Massachusetts Institute of Technology, with members comprising major aerospace manufacturers globally. Over the last several years the LAI's emphasis has shifted from implementing Lean within individual companies to incorporating it across broader enterprises, encompassing multiple companies in supply chain or value chain.

There are numerous compelling case studies that have emerged from the LAI's enterprise-level work, but we will look briefly at two. The first is General Electric's aircraft engine plant in Lynn, Massachusetts. They have moved beyond implementing Lean internally to extending it to their suppliers and customers as well. An electronic data-exchange system is used to implement a pull replenishment system in which critical parts are delivered to the assembly area as they are needed. Engines are completed, tested, and loaded onto a customer's truck every three days in accordance with the required "takt time" (pace of production) and this constant, balanced rhythm is replicated at all stages upstream in the supply chain.

Benefits at GE's Lynn plant in implementing Lean supply chain principles have included: inventory turnover improved by 33%, throughput time reduced by 35%, human work effort reduced by 17% per engine, and quality faults reduced by 28%.

Another success story from the LAI is the production of the Joint Direct Attack Munition (JDAM), a weapon guidance system for which Boeing is the prime contractor. As the system neared production, it had a cost estimate of US\$68,000 per unit, a price which was unacceptable to the customer (the Air Force). A multidisciplinary team was formed that included representatives from all levels of the supply chain, with the authority to question and re-engineer all aspects of the programme, including the product design, workshare (and revenue share) and support services. The team integrated design, component supply, end product assembly, and in-service lifecycle support to focus on driving finished costs down without compromising on quality. The results were remarkable, with a reduction in unit costs of more than 75%. Over five years of production, the Lean supply chain team managed to maintain a delivered price of just \$15,000 per unit compared to the original estimate of \$68,000 (both in "then-year" dollars).

Case Study Review

If we review the case studies, from quite different industries (healthcare and aerospace) we find that goal setting and teamwork are vital aspects in the success of implementing a Lean supply chain. The goals should be linked to performance metrics, which should be aligned with the supply chain objectives.

Once senior management commitment is achieved, the Value Stream Mapping (VSM) process will greatly assist the change processes. Key performance metrics must be set for the supply chain, then as the VSM process takes place, it will become evident which areas need a focus for improvement. Through the VSM process, a number of quick fixes may be identified – which can be tracked and fixed in a

short time and at little cost. Lead-time is often a good area to focus on, with the team taking effort to address the critical path that paces the supply chain process.

The key to success in implementing Lean in the supply chain involves a long-term commitment and proper resource allocation, fact-based information about savings and improvements, a willingness to share information at all levels, and support for suppliers in terms of Lean training and the use of process improvement tools.

Summary

Leading companies within many industry sectors have come to realize the competitive advantage that can be gained from using Lean principles and techniques to dramatically improve the flow of value, information and physical

goods, across the supply chain. Mutually beneficial supplier partnership agreements, focused consumer response initiatives and a strong emphasis on reduced inventory across product pipelines are what drive efficient supply chains. Exceptional companies have applied Lean Thinking across their supply chain to enable excellence in products and services for their customers.

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Integrated Procurement and Supply Chain Management

The Road to Supply Chain Intelligence

Dr. Dermot Carey and André N. Verdier

Supply chain management (SCM) is deemed to be one of the most complex business disciplines of all, comprising activities and interactions within and between many of the traditional functional areas of a company and their myriad of channel partners. No longer can a company place its entire focus on its own operations because long-term success is becoming increasingly dependent on actions and decisions of upstream and downstream entities in the supply chain. Organizations that effectively collaborate with their supply chain partners position themselves for success in 21st-century markets. When focused methods, and tried and tested techniques are adopted or transferred to specifically address the objectives of the Supply chain arena, the results are always positive, whilst contributing substantial savings, efficiencies and benefits. When these methods and techniques are followed it means that your business is working to a set of practices and principles that deliver benefits in a consistent manner. Some of these practices and principles go beyond traditional SCM into successful leadership and project management techniques. There is a growing awareness that effective SCM provides any business with the extra edge it needs to be more efficient and differentiated from the competition. One way to achieve this is for supply chain managers to look at their opera-

tions from an holistic perspective by adopting effective, proven methods from the market to increase the chances of success. Conversely if you do not manage your purchasing and supply activities in a planned and structured way, and you continue to do what you have always done, you will continue to get what you have always gotten.

Even with decades of hands-on experience in the supply chain arena, we at MRM-Global never cease to be amazed at the number of different ways in which SCM has been adapted and applied within organisations. There is no single method of execution, and that can lead to difficulties when being held accountable for efficiency improvements and/or cost reductions against a common background of expectations from the CEO/CFO.

Without doubt effective procurement and inventory management can provide a vital contribution to the success of a business and yet, too often, no clear vision or integrated action plan towards achieving the business objective is present. Why is this? There appears to be no clear answer - an air of mystery seems to hang over the SCM arena! Excuses are abundant as to why certain

things cannot be done. For example, when given your supply chain improvement objectives - what should you do? Find a nice planning system that will draw nice charts and give you your Demand, Purchase and Supply Plans ('utopia' in detail), or request six months grace while you find out what has to be done? The sheer volume and complexity of purchasing and supply activities for the majority of organisations creates a scenario where there is usually no time and fragmented or no data/information is available. This lack of consolidated data creates a problem because of the many variables associated with SCM. This often results in 'fire-fighting' becoming the order of the day. Planned areas of activity are often focused only on a part of the whole - for example increasing inventory turns - leaving other areas of opportunity in SCM untapped and inadequately managed.

The importance of effective SCM might be summarised as follows:

Provide continuity of supply of goods and services at lowest cost and minimum contractual risk

From a performance perspective, a 1% saving in purchasing

spend is equivalent, from a profitability perspective, to a minimum 10% increase in sales. In a climate of economic slow-down, where increased sales are more difficult to achieve, the contribution from effective purchasing can achieve such ambitious business objectives through a professional approach. This places procurement in the position of an important contributor to the business. If we consider inventory management, a primary focus will be achieving optimum stock turn rates. Not only will this support the provision of high service levels when properly managed, but also frees up valuable working capital which can be used for improved business performance. These two functions, with coordinated actions, can then directly influence how well warehousing and, in turn, logistics operates. By integrating these efforts on a cross-functional level businesses can achieve *Integrated Supply Chain Management* (ISCM).

So how do you achieve ISCM? We at MRM-Global believe the answer lies in the design of the SCM process itself. In the industry, limited research is currently done from this perspective. Some SCM processes work better than others and the better ones tend to have a more holistic approach. The processes that are not as good are more fragmented in their design. From our research we have found that the integrated approach or ISCM delivers better results, evident in recent results that were realised

by MRM-Global in a major project. This has led to the creation of the complex organisation, providing substantial improvements in efficiencies and cost reductions. These findings are further echoed and advocated from other well regarded sources such as Prof. Martin Christopher and Dr. John Gattona. The process supporting ISCM, when it incorporates project and portfolio based models, improves SCM performances even further. Project and portfolio elements have been proven to provide substantial benefits and realise the process. Unless the process reflects and complements the complex cross-functional inter-relationships from demand planning to fulfilment, and the associated operating procedures, the danger of a fragmented process remains. We have studied these areas and have integrated our find-



Photograph by Antonio de Linares Rosado

We empathise with this dilemma as we are full time practitioners and advisors to organisations tasked with correcting these shortfalls. Key drivers and motivators at MRM-Global are to create and provide intelligent solutions that both support the concept for sustainability and offer consistency in their application. To this end we have developed the *MRM-Global Value Delivery Methodology*. This process in itself is the culmination of many years of effort and commitment and represents a significant contribution to the profession. However, used in isolation, it still leaves the responsibility to leaders and practitioners to interpret and undertake an implementation program. It is at this point that things tend to go awry. It is not the lack of ability or commitment from people to implement the integrated processes and culture, it typically comes down to the lack of time and support tools to enable the transformation. To assist in the achievement and to enjoy the rewards of world class practices, we have developed a software product to support the ISCM Process. This tool is called PRESIS. It is compatible with all existing legacy systems and is complementary to planning, purchasing, inventory, warehousing and distribution packages. We developed the software to bridge the gap in existing processes and also to act as a practical aid for practitioners to succeed in the implementation of the concept. Furthermore, it provides the necessary tools and intelligence for visibility across the procurement and supply chain functions. This in turn provides a robust method for

achieving consistency in process, decision making ability, cost competitiveness and resilience to cope with the challenges of the economy and market changes. Legacy or bespoke corporate systems tend not to have data in a format that matches ISCM needs. The data is frequently of a transactional nature with a financial reporting emphasis. PRESIS is designed to provide the decision makers across the supply chain with integrated intelligence. This eliminates the need for tedious spreadsheet analysis and more importantly allows for cross-functional planning, accountability, consolidation, collaboration and measures for performance. This visibility differentiates it from other software applications in the market. There is no one prescriptive method as to how SCM is best managed and many of the recommendations regarding ISCM will be applicable to any SCM portfolio and will apply to both private and public sector organisations. Any differences in SCM methodologies will be specific to the nature of the business and the procurement and supply chain cycle and the remainder will have a common approach. The MRM recommended method follows a structured approach to SCM in an integrated and project based manner. This approach requires that data is converted into information in a way that enables a comprehensive plan for your entire supply chain activity. This will prove difficult for those organisations that have a fragmented approach,

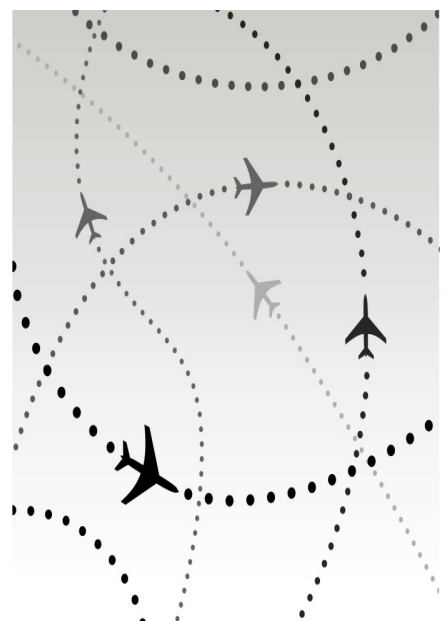
and will require time and resources dedicated to capturing and converting data. The upside is that, once completed, it is easy to maintain and more importantly, you can now develop plans in a consistent manner.

Current literature, in the majority of cases, recommends an integrated approach, typically without a given method as to how to achieve that approach. Our experience shows that achieving the integrated concept demands a structured approach supported by detailed information.

Dr. Dermot Carey is Chairman and Founder of MRM-Global.

Andre N. Verdier is CEO of MRM-Global.

For more information about MRM-Global visit mrm-global.com



Case Study

Honeywell



Dolphins Take the Floor at Furlong

Overview

- Industry — Warehousing
- Application — Automated Warehouse Management Solution

- Product Solutions — Dolphin® 9500 mobile computer, Zebra QL420 mobile printer, wireless LAN system
- Partners — Waveform Solutions and Zebra Technologies

Executive Summary

In today's high-tech climate, mobile computers and printers form a vital part of an effective warehouse management system. When Furlong Flooring Limited decided to develop their own system, they approached Waveform Solutions, who recommended Dolphin 9500 mobile computers from Honeywell, working in conjunction with Zebra QL420 mobile printers.

Company Profile

Furlong Flooring Ltd was established in 1980, and over the past 25 years has expanded very successfully through indigenous growth and acquisitions. The Furlong Group has become one of the largest floor covering distributors in the UK and Ireland, with an annual turnover of over €100 million. Its policy of bulk buying requires warehousing facilities of over 150,000 sq foot.

The Solution

After detailed consultations and a thorough exploration of the solutions available, Waveform developed a complete warehouse management system. This includes a wireless Local Area Network, Dolphin® 9500 computers from Honeywell and QL420 mobile.

Alan Carroll, Managing Director of Waveform Solutions, explains: "We wanted to provide a solution of the highest quality which would streamline the activities of Furlong Flooring's warehouse facility. Our ability to supply high quality products that work seamlessly together allowed us to create a highly efficient warehouse system based around the Dolphins and the Zebra printers."

The Dolphin 9500 is a state-of-the-art, feature-rich handheld computer which boasts the latest technology. This includes an industry-leading triple wireless radio design, with 802.11b wireless communications for maximum speed, efficiency, and usability. The 9500 is also GSM/GPRS and Bluetooth®-enabled.

Although it is very light, its magnesium alloy construction makes it the toughest product on the market, ideal for use in a busy warehouse.

The Benefits

The Zebra QL420 is a mobile printer that can be used for labels, tags and receipts. Its wireless capability enables warehouse staff to print labels whenever and wherever they are needed. Previously, warehouse workers used a manual, paper-based method, but they now use the Dolphin connected to the QL420 printer. This saves time and improves productivity, quality and flexibility.

Following a radio site survey, the Wireless LAN was installed, using access points and specialised antennae to make the warehouse completely Radio Frequency (RF) capable. When used in conjunction with the Dolphins and the Zebra printers, it provides a one-stop solution that has already boosted



the efficiency and productivity of Furlong Flooring's warehouse.

For more information visit:

www.honeywell.com/aidc

Web: www.zebra.com



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Case Study



Zetes and Wireless Networking at Morrisons

Zetes, the leading European provider of solutions and services for the automatic identification of goods and people, have been awarded a contract from Morrisons supermarkets to provide a wireless IT infrastructure solution for five of the company's UK manufacturing facilities, based in Yorkshire, Northampton and Cheshire.

The contract, which includes design, implementation and support of a Cisco wireless infrastructure with mobile devices valued at over £1.5m, is being deployed in partnership with Computacenter. This initiative is an important element of Morrisons' ongoing investment into upgrading IT capabilities across the organization. The wireless network will enable Morrisons' current, predominantly paper based processes and information systems to become more accurate and automated, paving the way for future operational improvements. As announced in January 2009, Morrisons has already invested £6m in a project with Zetes to introduce voice

directed picking into all its warehouses, which is currently being implemented. This latest project will enable its manufacturing centres to benefit from real time information once the company's Oracle eBiz ERP system is introduced in 2010.

Zetes supplied professional services consultancy to design the Cisco wireless network and oversee the implementation, which has just begun. The company is also supplying and supporting all the mobile devices required within Morrisons' manufacturing estate including advanced handheld terminals with keyboards specially customized for Morrisons, Zetes' own IND 2475 truck mounted terminals, extended range scanners and label printers.

Gary Barr, IT Director at Morrisons says, "Once again Zetes has proved their versatility as a strategic technology partner to Morrisons by providing a solution which is designed, implemented and supported in a consistent, standard and timely manner. It was a natural



progression to invite Zetes to design the wireless network within our manufacturing operations after their excellent track record implementing voice into our distribution centres.”

James Hannay, Senior VP for Northern Europe from Zetes says, “Providing a wireless infrastructure is a key element of Zetes’ offering and fundamental to ensuring Morrisons gains the productivity and accuracy benefits possible from optimizing its supply chain. This investment ensures Morrisons has the right infrastructure to support their manufacturing operation running legacy applications in the short term but also ensures they are technically ready for migrating to Oracle in the long term.”

Following a successful pilot project completed in October 2009, the full implementation programme will take place between February and September 2010.

About Zetes

ZETES INDUSTRIES (Euronext Brussels: ZTS) is a leading pan-European company in the value-added solutions and services industry for Automatic Identification of Goods and People (Goods ID and People ID). Zetes uses both

emerging and mature technologies (barcode, voice recognition, RFID, smartcards, biometrics), and develops Solution Architecture Frameworks to optimize the business performance of many customers in many market segments: manufacturing, transportation, logistics, retail, healthcare, finance, telecommunication, government and public services. The Zetes group has its headquarters in Brussels, with subsidiaries in Belgium, Germany, France, Ireland, Israel, Italy, Ivory Coast, the Netherlands, Portugal, Spain, Switzerland and the UK . Zetes currently employs more than 800 employees and generated consolidated revenues of €178 million in 2008. More info: www.zetes.com. In October, Marcel Kars (Vice President 3i Competence Centres) of Zetes will be one of the keynote speakers at *Logistics Ireland 2010*.

Zetes is running an Open Day in Dublin on June 1st 2010. Visit www.zetes.ie

Supply Chain Management Postgraduate Programmes, Dublin Institute of Technology

Supply Chain Management (SCM) is one of the greatest opportunities for economic growth and is concerned with the strategic management of the total supply chain from the sourcing of raw materials through to the final consumer. It is particularly important in an Irish context because of the open nature of our economy, the challenges posed by relative geographical peripherality and the potential benefits in terms of cost and customer service.

The National Institute for Transport and Logistics (NITL) at DIT offers its prestigious Masters programmes in SCM in two modes:

- MSc in Supply Chain Management – Full-time (1 year) (DT351)
- Executive MSc in Supply Chain Management – Part-time (up to 3 years) (DT352) Commencing April 2010.

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