Supply Chain Perspectives

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Reconfiguration of Operational Relationships Post the Current Global Economic Crisis

Coping Logistically in the Economic Downturn

The Turnaround of Oral-B, Iowa City

Attitude Defines Altitude

Reducing Complexity and Improving Agility in the Supply Chain

Supply Chain Learning—The Role of Games

Logistics Ireland Special Issue
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).

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**Dublin**
- Business Strategy - 7th-09th & 14th-16th January (2010)
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Welcome to the Supply Chain Perspectives (SCP) special issue based on the proceedings of Logistics Ireland 2009.

Logistics Ireland is now into its second decade and since its establishment in 1998 the conference has developed into the country’s largest supply chain management (SCM) and logistics event. During this time SCM has become increasingly recognised across the business community as a major source of competitive advantage. Most of that period was characterized by high levels of economic growth, with concomitant growth in trade and logistics activities. In recent years the economic and business landscape has certainly become more challenging and this year’s event reflected these challenges.

The theme of this year’s conference – and therefore the focus of this issue of SCP - is ‘Supply Chain Management and Logistics in a Volatile Global Environment’. The concept of globalization is well known to supply chain professionals with the field very much in the vanguard of developments in business internationalization in recent decades. However, the volatility which has been a feature of this global landscape in recent years has forced all of us to reconsider some of our basic assumptions about the way in which we do business and, in particular, how we create and sustain competitive supply chains. These and other related challenges have sharpened the focus within organisations on the need for robust approaches to supply chain design and management. These issues are particularly important for an island economy and apply to all companies no matter their size or industry sector. The focus of the conference, and of this issue of SCP, is the implementation of practical SCM strategies that give organizations the ability to meet these challenges and to tap into the upturn when it inevitably happens.

This issue is based around some of the keynote speeches delivered at Logistics Ireland 2009. In addition, Lee Styger presents a unique take on ‘Non-Rational’ supply chains and Cotter et al. discuss the role of business games in SCM education. We also have our usual ‘Supply Chain Forum’ with news from NITL and the wider Irish supply chain community. In this issue our website reviews provide some information on three leading Irish professional bodies (CILT, IIPMM and IPICS) and their websites.

We wish you well in relating the content of the various articles to your own strategic imperatives and challenges.

Your NITL Team
Supply Chain Management and Logistics in a Volatile Global Environment launched at Logistics Ireland 2009

Edward Sweeney’s new book – Supply Chain Management and Logistics in a Volatile Global Environment – was launched to coincide with the recent Logistics Ireland 2009 conference. The book is published by Blackhall Publishing. Following on from the acclaimed Perspectives on Supply Chain Management and Logistics (Blackhall Publishing, 2007) it explores a range of supply chain management (SCM) and logistics challenges in the rapidly evolving global context. The book contains:

- Contributed chapters from international SCM thought leaders
- Reflections on specific issues happening across a variety of industries
- Implications of and tactics to deal with critical issues emerging from the SCM research agenda.

Professor Martin Christopher, Europe’s foremost SCM expert based at Cranfield University in the UK, launched the book and commended Edward and NITL for their contribution to the development of SCM in Ireland and further afield. He stated that “this book makes a real contribution to thinking in this field and has a richness of material across a variety of areas”. Edward Sweeney commented that “NITL is proud to have brought together a group of highly renowned experts from universities in Ireland, the UK (including Oxford, Cranfield and Heriot-Watt in Edinburgh) and further afield to contribute to this initiative”. Aimed squarely at SCM and logistics professionals, this book will also reach a wider market of students, researchers and policy makers.

You can order a copy now from:


or from most good bookshops.

Martin Christopher, Daniel Park, Edward Sweeney, Claudia Wagner, Colm Ryan and David Grant pictured at the book launch.
NITL Launches New SCM Learning Tool in Ireland

NITL, in collaboration with SCALA Consulting, is delighted to announce the launch of The Fresh Connection – an innovative supply chain management (SCM) competition and learning programme developed to help organisations educate and train their employees in a dynamic environment.

The Fresh Connection gives supply chain teams hands-on opportunities to compete and expand their functional knowledge of effective SCM. Working in teams of four, supply chain professionals and students will take part in an engaging and interactive game that will enhance understanding of total SCM strategy.

The Fresh Connection is an excellent learning and development tool provides valuable training and staff development. This internet-based, role-playing simulation game is built around a virtual fruit juice producer. The challenge is to save this virtual company from its downfall and develop it into a successful company. The competition sees players work together from crisis management through various developing business changes.

Starting in early 2010, the game lasts six weeks with each week equivalent to half a year in real time. Working in teams of four, each team will manage and make tactical and strategic decisions on procurement, operations, sales and the supply chain. Each decision has an impact on the business and shows the importance of different disciplines working together to create an efficient supply chain. The Fresh Connection competition and learning program culminates with live finals and a conference. Players will also have the opportunity to see how their team measures up against the rest of the competition with a detailed performance evaluation report once the competition has finished.

Commenting on the launch, John Perry, Managing Director of SCALA said that “The Fresh Connection ran very successfully in the Netherlands last year with 280 teams from some of Europe’s largest businesses taking part. It is not only very competitive, creating great team spirit, but is also a fantastic training and development tool. We think The Fresh Connection will help participating organisations develop their employees more effectively”. Edward Sweeney of NITL commented that “The Fresh Connection is an excellent learning mechanism for SCM. We are delighted to be associated with the wider international network of businesses (in the UK, the Netherlands, Belgium, Italy, Denmark, Switzerland and the USA) that is participating in this innovative initiative”.

Further details can be found at www.thefreshconnection.co.uk. The article by Cotter et al. later in this issue provides some insights into the use of business games in supply chain learning.

NITL Welcomes New Masters Participants

During recent months approximately 30 new participants embarked on NITL’s M.Sc. programme in Supply Chain Management. The Executive Masters ‘Introduction to SCM’ module was run in both Dublin and Cork with participants from a wide range of local and multinational companies including SAP, J&J, EMC, Heineken and Sandvik. 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.
NITL Congratulates Recent Graduates

NITL extends its congratulations to the latest cohort of participants to graduate from its flagship Executive Masters programme. Eleven participants successfully completed the requirements of the M.Sc. in Supply Chain Management in recent months and received their parchments during the ceremony at St Patrick’s Cathedral on Saturday 21st November. This graduation cohort comprises supply chain and logistics professionals from a range of sectors including electronics, pharma and management consultancy. The companies represented include leading hi-tech multinationals such as Logitech, Trend Micro and Symantec.

NITL extends its sincere congratulations at all those who graduated at the ceremony, as well as to their families: Sinead Bourke, Gao Bowen, Martin Cavlan, Patrick Collins, Donal D’Arcy, David Jacob, Niall Jones, Michael Joyce, Elaine Laird, Michelle Lawlor and, Charles Nwaokorie. At the graduation Edward Sweeney of NITL commented that: “We wish all our graduates well in their future careers. In the current economic climate it is those equipped with the knowledge, skills and competencies acquired through our Masters programme who will play a pivotal role in building the recovery.”

NITL also offers its congratulations to Dr. Carolyn Collins on the recent award of a Ph.D. by the Dublin Institute of Technology (DIT). Carolyn has worked with NITL in the management of recent Logistics Ireland conferences. Her Doctoral thesis was entitled “The tromped: a means of prophylaxis for flight related deep vein thrombosis”. Carolyn’s primary degree was also awarded by DIT (in Transport Technology).

Dr. Carolyn Collins pictured with Edward Sweeney of NITL at the recent graduation ceremony.

NITL Report Cited in Northern Minister’s Speech

The work of NITL’s Edward Sweeney was acknowledged by Northern Ireland Minister for Regional Development in a recent speech. Conor Murphy, MP, MLA, was speaking at the opening of the Annual Conference of the Irish Ports Association held in Dundalk recently. The Conference was formally opened by Dermot Ahern TD, Minister for Justice, Equality and Law Reform.

Murphy stated that:

With trading conditions as difficult as they are, it is entirely understandable that the ports would wish to review the pace in which they bring forward their planned capital investment plans. Nevertheless, I share the observation made by Edward Sweeney, Director of Learning with the National Institute of Transport & Logistics in an InterTradeIreland Freight Transport Report, published earlier this year. He noted that the current economic slowdown provides an opportunity for our ports to address capacity requirements and operational issues, so that they are better able to weather the current challenging trading environment and better able to handle rising demand when the economy recovers.

A full copy of the Minister’s speech, entitled The Role of Ports in the Development of the North’s Economy is available at http://www.drdni.gov.uk/index/publications/publications-details.htm?docid=5515
Logistics Ireland

NITL’s recent annual conference heard how logistics and supply chain management (SCM) hold the key to tackling the challenges faced by organisations in Ireland today.

Two leading UK-based academics (Professors David Grant and Martin Christopher) explained to over 150 delegates at Logistics Ireland 2009 that SCM thinking is imperative if firms are to meet increasingly demanding expectations in the market place whilst simultaneously focusing on eliminating waste throughout the supply chain.

Observing some of the logistical casualties as a result of the economic downturn, opening speaker Professor David B. Grant, Director of University of Hull Logistics Institute (UHLI), said that container shipping costs have virtually collapsed as global trade has decreased 20%. Looking at the ‘megatrends’ impacting a firm’s logistics and supply chain strategy, while the economic downturn was the single biggest factor across all businesses, other factors were also having a greater or lesser impact depending on the size of the firm. For smaller firms the cost of logistics services was a big consideration whereas for medium sized companies increasing customer requirements were identified as their biggest concern. Meanwhile large sized firms felt that changes in the company’s organisational structure was a major factor in their supply chain strategy. He also emphasised that small and medium sized businesses had the advantage of being more adaptable than bigger companies, able to be responsive to customer’s needs, make quicker decisions and work more closely with suppliers to change orders and shipments to prevent inventory build-up. An abridged version of Professor Grant’s conference speech is included in this issue of SCP.

Another keynote speaker, Professor Martin Christopher of Cranfield University focused on the issue of managing complexity. Identifying that the biggest opportunity for cost reduction lies in reducing the complexity of today’s supply chains, he noted that outsourcing demands, shortening life cycles and organisational growth were all factors in making supply chains ever more complex. Understanding the total cost of ownership was critical, and by reducing or-
ganisational, product and customer complexity, companies could significantly reduce costs he argued. Professor Christopher’s themes are elaborated upon in his article in this issue of SCP.

One of the world’s leading experts in supply chain change management projects is Liam Cassidy, MD of LCL (Leading Change through Lean) and author of 10 Drivers of Rapid Improvement – Without Compromise – operating principles which have become widely adopted by companies all over the world. Liam outlined the steps that he undertook to save an Oral B plant earmarked for closure in Iowa. By implementing a new competitive culture, streamlining aspects of the business, and providing an open and honest work environment, the plant became one of the best performing in the Gillette Group’s network. Liam discusses some of these issues in more detail in his article later in this issue.

Other presenters included Declan Kearney, founder and CEO of SupplierForce who highlighted the critical role of supply management within SCM, and the importance of dynamic risk management. Pearce Flannery, founder and Chief Executive of Pragmatica, a management, marketing and human resource consultancy group provided a motivational talk exploring how we need to readjust our mindsets in order to affect the national approach to doing business in an international environment (see Pearce’s article for more detail).

Commenting on the conference, Edward Sweeney of NITL said that “the reality is that global economic volatility has resulted in markets that have become more sophisticated and more complex and customers who have become more discerning. In short customers expect better service and quality at ever more competitive prices. SCM and logistics – with its focus on enhancing customer service while optimising total supply chain cost and investment – have a pivotal role to play in this scenario”. Edward also thanked the conference partners (Dublin Institute of Technology and the Chartered Institute of Logistics and Transport) and sponsors (Zetes, Dublin Port Company, GPS Ireland, The Pallet Network and GeoDirectory) for their support. The conference was opened by Lord Mayor of Dublin, Councillor Emer Costello and chaired by Ingrid Miley of RTE.

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Diary Marker!

NITL is delighted to announce that Logistics Ireland 2010 will be held in Dublin on Tuesday October 19th. The theme will be ‘Dynamic Supply Chain Management and Logistics Leading the Recovery’. Among the confirmed speakers is John Gattorna, one of the recognised thought leaders in global SCM (see www.johngattorna.com).
The Chartered Institute of Logistics & Transport (CILT) was established in 1919 and received a Royal Charter in 1926. The CILT and the former Institute of Logistics & Transport (ILT) merged in 2002 to form the Chartered Institute of Logistics & Transport (CILT).

The principal objective of the Institute is to promote the art and science of logistics and transport in Ireland. It achieves this objective through both its membership activities and its educational qualifications. There are three regional branches (Southern, Eastern and Western) each branch meeting regularly to discuss matters of local and national interest, as well as organizing a variety of regional membership programmes and activities.

Irish Institute of Purchasing and Materials Management — www.iipmm.ie

The Irish Institute of Purchasing & Materials Management (IIPMM) is the professional association for purchasing and supply executives in the Republic of Ireland. It is dedicated to the pursuit of excellence in purchasing and materials management through education, training and representation and to the provision of focused, professional services to its members. The Institute’s aim is to promote excellence in all aspects of purchasing and SCM. It offers guidance on best practice, implements research and training initiatives and represents the interests of its members nationally and internationally. Its website provides information about corporate and individual membership of the Institute. It also provides extensive information about the Institute’s education programmes – including its range of prestigious HETAC-accredited education programmes up to honours degree level. It also contains specific areas for both members and students of the Institute.
IPICS (Supply Chain Management Institute) — www.ipics.ie

IPICS – the Supply Chain Management Institute – is the professional and educational society for operations management, including production, inventory, materials management, purchasing and logistics. It is a voluntary not-for-profit professional and educational organisation dedicated to building operations management excellence in individuals and enterprises through superior training, internationally recognised certification, and a network of accomplished industry professionals. The Society was founded in May 1980. It has developed significantly in the intervening years and currently has members throughout Ireland and Britain. IPICS has been instrumental in facilitating manufacturing professionals to keep abreast of the latest developments in manufacturing through its education, seminars and other training courses. It is affiliated to the European Logistics Association (ELA) and APICS, the Association for Operations Management (USA). Its website provides useful information about the Society’s various education programmes and one-day workshops, as well as about its various events and publications. It is easy to navigate and provides several useful links to SCM-related resources in Ireland and further afield.
Reconfiguration of Operational Relationships Post the Current Global Economic Crisis
By Lee Styger

Abstract
It is likely that classical models of strategic alliances may not be applicable moving forward into the new world economy post the current economic crisis. Traditional business models have considered each part of the business process in isolation, typically finance is remote from new product development, product development is remote from supply chain and operations etc. Prior to the economic crisis it was not unusual to see typical traditional silos within an organization never meeting, posing the question that if internal relationships were never fully forged how could a strong external strategic alliance be built and maintained? Furthermore, this silo based approach seems to have been more prevalent in government and not-for-profit organizations where clear lines of departmental demarkation have remained the mainstay of management practice throughout the generations of stewardship. This article discusses the principle models of dip dynamics and sustainable dependency interaction in the light of developing strategic alliances within the new world economy. Furthermore, the article will argue that it is in everybody’s best interest to maintain an environment of fiscal and environmental well being. By drawing on global research, a new roadmap is offered for all parties involved in the reconfiguration of their strategic alliances.

Introduction
Recent high profile failures in several “safe” blue chip companies have left billions of dollars of debt within their “strategic partners” (i.e. in their supply chain). This debt is unlikely to be recovered because there is no precedent for the magnitude, severity or indeed speed of the recent economic crisis and as such provision could not have been made adequately to offset the risk.

It has been reported recently that General Motors left a debt of $13billion when they filed for Chapter 11 in June 2009 (Braithwaite et al., 2009). This debt has had the dual effect of driving many of their strategic partners into Chapter 11 filing also and thereby destroyed the commercial, professional or personal relationships within these structures. Furthermore within a free market economy the attempted and actual intervention by governments in such cases raises questions of governance within the political arena and indeed whether governments well meaning intent in such cases misplaces real future sustainability within market places (i.e. is the inevitable being prolonged at unnecessary cost and waste?).

The underlying premise of dip dynamics suggests that organizations will not recover in typically classical ways and it will be necessary to reconfigure core strategic alliances against “new economy” strategic needs. For years the benefits of holistic strategic alliance management have been well advocated (Hines 2006). However, in light of the recent economic downturn, how well these were understood or indeed implemented in larger organizations has to be questioned, especially when we take into consideration the whole process chain of any given organization. It is certain that moving into the next generation of alliance building, a combination of harder and softer measures will be necessary in order to achieve full business and community sustainability.

The Principles of Dip Dynamics
One of the hidden aspects of the economic crisis to many outside observers has been the fact that the pool of suppliers and resources has contracted significantly. For some sectors resource starvation has become critical and contracts are now
being lost because of some supplier’s inability to supply on-time, to specification and within expected risk profiles (Anon 2009).

Currently, there is a popular belief that there will be a wealth of resource available on the upturn due to the current massive downsizing. However, the reason why there is likely to be a scarcity of competent suppliers lies, almost hidden, in the concept of Dip Dynamics.

Dip Dynamics

Currently, many business sectors appear to be experiencing a process of dip-dynamics, and depending on the tier of supply, companies will be at one of the four stages of dip and recovery, these stages are:

- The Drop Zone
- The Slap Zone
- The Balance Zone
- The Reconfiguration Zone

Figure 1 illustrates the principle of Dip Dynamics. It assumes that companies have been operating at the 100% line for their business pre the economic crisis (i.e. they were operating at the maximum they could achieve based on their capability in a strong economic environment). Rapidly, their marketplace retracted. In many cases by over 50% (60% - 80% have been reported), causing the owners to cut their business by at least half.

The downsizing has included internal and external elements. However, the dynamic is not that simple because, initially, if a company has to cut its business by half, then they are forced to cut their resources, inventory, people and supply chain by more than half.

This is because there is significantly more value in their supply chain in terms of outstanding orders to suppliers, work in progress and stock etc. that need to clear though the system and this takes time to accomplish. As such, business is paralyzed, there is no activity for some time because the bull-whip effect caused during this time is settling itself down.

After some time companies begin to report work load increasing slightly. This is due to the settling and re-calibration of the new demand within the chain and the need to bring some new orders back through the supply chain. Companies have gone from really busy to almost no work overnight, to modest increases from an almost zero starting point.

Mistakenly, people think that at this point they are experiencing the green shoots of recovery, and business will grow rapidly again to where it was before the drop. Unfortunately this does not appear to be the case. Work typically bounces along for a while because it is not possible to establish the market size and traditional forward planning protocol gives way to reactionary ordering.

Many business leaders believe that their businesses are going to grow again and get straight back up to where they started prior to the drop, but there is now a different dynamic. Businesses were at the top of their capability, but they have now halved their workforce, stock and working capital not to mention their line of credit. In ef-
fect, business has been forcefully reconfigured.

The Concept of Non-Rational Supply Chains

Fundamentally business has moved into a new world order, and new world organizations have new world supply chains and new world supply chains demand new world relationships.

The concept of non-rational supply chain (NRS) relationships surpasses more traditional “bow tie” linear models by assuming that:

- A network of competent resource is present but not necessarily simultaneously active (i.e. an organization may be perceived to be a critical supplier but not necessarily be active in supply at the point of assessment)
- Objective or task responsibility is not necessarily devolved into the same supplier each time the relationship is activated (i.e. unlike a traditional supply chain model, first tier supply status is never guaranteed in a non-rational supply chain, but assigned at each activity)
- Reliance on supply is not based on a single node of activity but rather (potentially) limitless combinations of nodes (i.e. there is not necessarily a single road or channel of supply)
- Supply demand can be rapidly converted into supply delivery, because channels become networks that place each node (“tier”) closer to the point of activity (focal company or end customer)
- Value delivery becomes critical (i.e. a focus on total cost of ownership / total cost of supply)
- Objective risk sharing transcends supplier contracts
- Channel management becomes network management

Relationship management within a non-rational supplier environment demands a systems approach that recognizes supplier networks that are more in line with that of social networking service providers rather than traditional channel relationships (Berger et al, 2001; Harkin, 2009, Mukherjee, 2009). This concept goes far beyond that of “virtual supply chain” relationship management (Chang, 2001). Indeed virtual supply chain relationship management has unfortunately shrouded deeper understanding of non-rational supply chains for far too long. This is typically because non-rational supply chain relationships are difficult to map, and each one takes on an almost organic form that needs defining and positioning individually (see Figure 2).

In short there is no prescriptive theoretical model that fits each scenario. As such non-rational supply chains have been described as virtual for far too long. The major problem is that whereas a virtual supply chain can be formed and disbanded for any given task, and does not necessarily have any formal structural relationship, a non-rational supply chain can be in place with formal relationships, yet significant parts can be in hibernation for protracted periods without penalty or risk.

Traditionally management of the supply chain has been based around maintaining strong channel relationships to ensure continuity of supply (Cohen and
Roussel, 2005; Fawcett, 2007; Coyle et al, 2008). A single node of failure could cause catastrophic failure even if multiple sourcing policies were implemented close to the focal company. Typically however, supply chain failure can be attributed to smaller suppliers embedded well away from the focal company and whose management was usually outsourced to other suppliers closer to the focal company. The premise with a non-rational supply chain is that the network becomes “self healing” insofar as a single node of failure is surpassed by the network rapidly reconfiguring to maintain continuity of supply without the focal point (company) necessarily directing the reconfiguration.

On the one hand, the competitive advantages of non-rational supply chains are attractive to many organizations committed to customer focus and rapid response delivery and/or rapid new product development and introduction. However, on the other hand, the change from previous philosophies to the new philosophy can be traumatic. On the assumption that the change is not imposed or evolved, but rather conscious, then significant cultural and operations change is necessary that includes a step change in management thinking that can be far beyond the intellect of many traditional practitioners especially when classical models of supply chain management and relationship management no longer apply.

The Challenges of Managing Reconfigured Supply Chain Relationships

To coin the phrase “things ain’t what they used to be” and this statement is ever more pertinent in the context of managing relationships in non-rational supply chains.

For a non-rational supply chain (relationship) to be effective, the organization must consider its internal and external “transaction nodes” (point of interaction or product/service exchange) and replace more typical silo-based management styles with a model more in line with that of a social network. It is this social networking model, within the framework of the organizational and supply community, and importantly appropriate to the corporate objective, that should enable the host (or focal organization) to generate profits. However, it is the contextual management and direction of the non-rational suppliers that remains challenging, specifically in relation to:

- How to configure the supply chain
- How to guarantee supply and cash flow
- How to communicate to the supply chain
- How to transact within the supply chain
- How to cost effectively manage the supply chain
- How to protect the intellectual property and configuration of the supply chain
- How to generate profit for the supply chain

A typical belief set is that fiscal sustainability and seemingly random supply chain interaction cannot coexist. However, the basic principles of Lean would contradict this argument (Evans and Lindsay 2008; Jones 2008). A customer-focused business model based on cost-down and value-up, as illustrated in “Styger’s Diamond” (Figure 3), is very much in line with both fiscal sustainability principles and indeed the customer-focused principles of a non-rational supply chain.

![Figure 3: Styger’s Diamond of Sustainable Principles](image)

However, for this type of initiative to be manifest, new multi-dimensional models of business relationships need to be devel-
oped. Typically, the notion of how a multidimensional relationship map or dynamic goal succession modeling can be developed around corporate responsibility, physical exchange of goods and services and indeed the ability to deliver new products for an ever more discerning marketplace with stakeholder relationships at the centre is a step too far for many. Yet it is this level of thinking that is necessary to deliver a sustainable and prosperous future for organizations and their stakeholders.

Overall, it is certain that the most sustainable and profitable solution for the entire relationship has to be one where “consensus” lies at the centre of any advanced and multi-dimensional mapping process. The notion that a single “focal company” or entity will have the power to direct a non-rational supply chain relationship into the future seems unlikely due to the dynamic and almost random manner that the relationship and transaction channels will be formed and hibernated based on the task and opportunity.

Conclusions

One of the major aspects of the economic crisis has been the decimation of traditional supply chains, and with it their operational relationships. Typically, there appears to be little supply chain resource and, importantly, no supply chain reserve. As such, growth within the confines of classical supply chain and organizational theory may not be possible for many organizations.

Furthermore, there appears to be a reverse bullwhip effect, where the real dynamic of the supply chain becomes more distorted the further the commentator is from the actual point of action. Reverse bullwhip has the effect of instilling a false sense of well-being into all stakeholders and a belief set of “she’ll be right”, that in turn opens up great opportunity for those organizations who have a competitive drive to win markets.

Alarmingly it is likely that a second tsunami is inevitable based around failing companies running out of critical resources during the upturn coupled with lack of suppliers capable of delivering competitively at the same time that further government or institutional bailouts are unsustainable.

Operational relationships, within a context of customer focus and overall responsiveness are certain to become ever more challenging in the new world economy as will be the pressure on businesses to demonstrate higher levels of corporate governance and social responsibility. Relationships will become more valuable and some may even be viewed within the context of a corporate asset.

Whether organizations can encompass a culture of social networking instead of silo based structures remains uncertain. What is likely is that classical models of supply and relationship management principles will not be applicable in many cases. Moreover, traditional silo-based and channel structures, either internal or external, have been impacted and changed beyond reasonable definition (and indeed recognition) due to this new world economic condition and as such, their validity is now questionable moving forward into the brave new world.
References

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Dr Lee Styger has over 25 years experience in business reconfiguration, new product development, international research and advanced manufacturing technology. In 2004, Lee founded the Business Reconfiguration company Tiger Bay Consulting. Tiger Bay engages actively, with its clients, in Intellectual Property creation and business reconfiguration. He has also lectured in leading universities in the UK, Asia and Australia. He can be contacted at lee@leestyger.com.
Coping Logistically in the Economic Downturn
By David Grant
The following is an abridged version of Professor David B. Grant’s opening keynote speech to Logistics Ireland 2009, held in Dublin on October 20th.

I want to thank Edward Sweeney, the National Institute for Transport and Logistics (NITL) and the Dublin Institute of Technology (DIT) for inviting me to speak at Logistics Ireland. I am delighted that for a change I am leading off a conference as opposed to going last or at lunch, which is the position my good friend and colleague Professor Martin Christopher finds himself in today.

The purpose of my presentation this morning is to discuss the economic downturn and its impact on logistics and supply chain management (SCM) activities, propose some suggestions for survival in these times, and lastly present a couple of examples of how firms are leading the way in these efforts. Many others have commented on the wherefore and the whys of this current economic crisis; I will ignore that aspect and simply discuss the results as they affect logistics and SCM activities and offer some ideas for a way forward. I do not want to appear as a harbinger of doom, but I am not convinced we have seen many ‘green shoots of recovery’ as one politician put it earlier this year. However, also I believe that firms who pay close attention to their business and customers will weather these turbulent conditions, survive and go forward when the recovery takes place.

My own research focuses on retail and retail logistics and in the past year there have been a number of retailers go into administration including Zavvi, Woolworths, MFI, Whittard of Chelsea and Rosebys. UK manufacturing, which was down almost 10% over the last year, has also suffered closures and layoffs at firms such as Jaguar, Land Rover, Nissan and JCB. Decreased consumer demand owing to a lack of consumer confidence in the ‘credit crunch’ has significantly slowed global logistics and supply chain operations. Exports from China have fallen over 10% this past year while there are over 10,000 new, unsold Honda automobiles sitting at the Southampton port.

A presentation by Mr. Eivind Kolding, CEO of Maersk at the German Logistics Association’s Annual Congress in Berlin in October 2008 indicated that over the last five years the increase in the supply of containers and container ships has outstripped the increase and subsequent decrease in demand in 2007-08, by almost 8%. This difference has clearly affected container costs and rates in 2008; the cost to ship a container from Dalian to Rotterdam was constant at about US$1,500, while the spot rate for shipping, excluding bunker fuel and terminal costs, fell from US$2,500 at the beginning to 2008 to US$600 by October of that year.

The Telegraph reported in January 2009 that shipping rates had actually fallen to zero; however that was a short-term phenomenon likely related to ship owners wanting to maintain proper ballast while sailing. Nevertheless, the same report noted that idle ships were anchored in rows in Singapore harbour like a ‘vast naval fleet’ and that shippers were finding it difficult to obtain routine letters of
credit. Closer to home, the Financial Times, in an article entitled ‘Dire land’ reported in August 2009 that the financial crisis situation in Ireland was predicated on the property crash and that the Irish government had little wiggle room in their finances to assist firms. In summary, firms will have to weather these stormy seas by themselves and develop their own outlook and solutions.

Researchers in the US investigated the ‘real logistics pain’ affecting firm’s logistics and supply chain strategies and presented their research at the Council of Supply Chain Management Professionals (CSCMP) Annual Conference in Chicago in September 2009. Almost 28% of respondents noted the economic downturn while 13% noted the cost of logistics services; the majority of these latter respondents were small-size firms. Over 10% of respondents - mostly medium-size firms - noted increasing customer requirements and almost 10% - mostly large-size firms - noted changes in firm’s organizational structures. So, for small firms costs appear important, i.e. a survival instinct, while medium-size firms appear concerned about customers and customer loyalty, i.e. a need to differentiate in the marketplace. Large firms appear to be preoccupied with activities such as mergers and acquisitions as industry sectors go through consolidation. When asked what firms would not do to improve effectiveness and efficiency, around 68% noted they would not reduce customer service or transportation levels while around 55% would not move inventory around their logistics networks or increase their use of cross-docking.

In another presentation by Damco at the CSCMP conference the four main challenges or barriers affecting supply chains today were identified as people, processes, technology and sourcing risk. For people, level of skills, proper performance measurement and collaboration are important factors. Process issues include a ‘one size fits all’ outlook, process control and complexity. Visibility, data quality and security are considerations regarding technology while externalities such oil price volatility, currency fluctuations, trade barriers and the green and carbon debate all represent risks in sourcing.

However, it is not all ‘doom and gloom’ as several success stories have been reported in various media over the past year. In the US, Wal-Mart is reported to have swept aside the competition - as their ‘rivals floundered they got stronger as thrifty shoppers went back to basics.’ The CEO of their UK subsidiary Asda, Andy Bond, noted this is ‘the dawning of the age of austerity’ and that as a society ‘we are moving into an era of the frivolous being unacceptable and the frugal being cool.’ While retailers in the UK failed as noted above, Poundland ‘rose to record profits and opened 35 stores and created 1,200 jobs in 2009.’ Just recently, the British Retail Consortium announced that retail sales in London rose 7.5% year-on-year for the month of September.

Lastly, we saw a little fun in 2009 with some unique new product introductions: Burger King introduced a ‘tasty’ little present for men - Flame body spray costing $3.99 that has the ‘scent of seduction with a hint
of flame-broiled meat.’
These examples suggest customers and their views may be changing forever due to influences from these current times, and these changes may affect how firms design and operate supply chains in future. The IGD reported on a recent survey of changing consumer shopping habits at their centenary conference held in October. They found that 22% of consumers would be shopping more online by 2012, 26% would be shopping more at farmers’ markets, 23% would be shopping more at specialist stores, and 29% would be shopping more at discount stores. Thus, it appears consumers are more concerned nowadays about what they purchase and where as regards quality and provenance but are also being very careful about their spending. I leave it for you to consider how these changes would affect your individual firm’s logistics and supply chain processes and operations.

What then are some strategic suggestions for coping and surviving in these times? Retailers should respond to changing consumer buying patterns by developing credit-crunch prices, changing packing sizes, changing category strategies, clearing stock, reducing inventory, pushing inventory back to suppliers, consolidating operations, cutting logistics costs, reducing total loss and waste, going lean and green and undertaking training. Manufacturers should respond to changing demand from retailers and end customers by cutting production, suspending capital investment, downsizing, restructuring, re-engineering, developing lean production and supply chains and undertaking training. Logistics firms and service providers should respond to changing and decreased demand by downsizing, suspending capital investment, consolidating and collaborating with customers and partners, reviewing and changing their customer portfolio, cutting their own logistics costs, developing leaner operations and undertaking training. You will recognise some themes emerging here, especially training which my own institution and NITL / DIT provide to assist firms.

Small and medium-size firms (SMEs) may have some advantages in these times, despite being concerned about costs and customers respectively as noted earlier. SMEs have the ability to be responsive to customers’ needs as they are typically closer to the customer, undertake quicker decision-making due to less management bureaucracy and work more closely with suppliers to change orders and shipments to prevent inventory build-up.

An example of an SME logistics service provider doing just that is the northeast England firm Clipper Logistics Group, who examined their response to the credit crunch and initiated two strategies: some usual cost reductions as one would expect but also enhanced and focussed service solutions that went beyond usual third-party logistics remits. For example, they added to their pre-retailing activities for e-fulfilment, which includes usual activities such as breaking bulk, consolidating and tagging, by providing photographs of incoming goods to upload onto the customer’s order website. They are also providing consolidation, storage and delivery of multi-user goods for many retailers at the Meadowhall Shopping Centre in Sheffield.

In conclusion, the current economic conditions pose many challenges but also many opportunities for firms and their logistics and supply chain activities. I hope my presentation this morning has provided some insights into these issues and I will close by saying don’t get lost in the fog of uncertainty and indecision that surrounds us today. Thank you for your attention this morning.

David B. Grant is Professor of Logistics and Director of the Logistics Institute at the University of Hull. His doctoral thesis received the James Cooper Memorial Cup Ph.D. Award from the Chartered Institute of Logistics and Transport (CILT UK) in 2003. He has published over 95 papers in refereed journals, books and conference proceedings, is on the editorial board of several journals, and is a member of the USA Council of Supply Chain Management Professionals and the UK Logistics Research Network.
The Turnaround of Oral-B, Iowa City
By Liam Cassidy

“If you don’t like change, you’ll like being irrelevant even less”

Anon

Understanding the Nature of Change

We are all familiar with the phrase: survival of the fittest. It is used so commonly that we no longer really understand its true significance to our lives and dealing with the challenges we face. It does not mean survival of the strongest, it means survival of those most adaptable to change.

Change is all around us. The world is seeing the emergence of new global powers and emerging markets: China, Russia, Brazil, Indonesia and Vietnam among others. These countries are seeking to diversify their economies and provide their considerable populations with the improvement in living standards they are demanding from their governments. We are increasingly seeing governments, and government-backed companies, compete for an ever-increasing scarcity of resources and commodities. These fundamental shifts in the economic world order are being felt in boardrooms across the world.

In short, the old rules of supply and demand, and assumptions about markets behaving rationally, have changed.

Resistance to Change

How does the above relate to Lean Manufacturing, or manufacturing in general for that matter? Simply put, the security of manufacturing jobs has become increasingly precarious, especially for those companies entrenched in the old ways of doing things. This was the case at the Oral-B plant in Iowa City, where the very resistance to change in the face of exposure to these new commercial realities, had brought Gillette its parent company, to the point of asking me to implement a programme of closure. What had brought about this previously unthinkable decision, and how did we turn it around?

A Proud History Made Irrelevant

The Oral-B plant in Iowa was built in 1958 and earned an excellent reputation for customer service. At 310,000 square feet, it was the largest manual toothbrush plant in the world, churning out almost one million units daily, with product development conducted on site. By the time I arrived in 2000, the plant had suddenly become vulnerable. Product development had been integrated with the parent company Braun, part of the Gillette Company. This meant that the plant’s workforce now competed for products and against facilities in China and Mexico with much lower cost structures.

Iowa City’s high service levels relied on high inventory levels, adding to its cost disadvantage. Its traditional MRP-driven push production system caused overproduction, creating even more inventory, which led to costly stocks of obsolete products. Add in a traditional culture with multiple job classifications that hampered productivity im-

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provements and the future prospects for making toothbrushes in Iowa City began to fade rapidly. This came as a great shock to the workforce as the 1990s had seen a period of solid growth.

However, the plant, which mostly served North American markets, had some intrinsic strengths. The workforce was well-educated and had strong technical skills. Besides brush production, Iowa City did packaging and distribution, work that most plants of its type did not handle. Best of all, it was located in the middle of the company's largest market, North America. Unlike China and Mexico, it was just days, not weeks, away from the major distribution centres for big retail customers such as Walmart, Costco and Target. These factors gave it a definite advantage over its competitors, if it could quickly reduce costs.

I knew from my time in auto manufacturing that a lean system based on “just-in-time” (JIT) production and “pull” would reduce lead times and inventory, augmenting the plant’s advantage in service while reducing costs.

**Hard Bargaining; Rapid Improvement**

From the beginning I was completely honest and transparent about the competitive threat facing the company and the likely reduction in the number of jobs necessary: from 750 to roughly 450. Severance packages were offered. After some difficult and at times emotional communications and negotiations the union agreed to a two-year wage freeze and a reduction in job classifications, first from 33 to 20, then ultimately to nine. Plant management ranks were thinned out. Senior positions were cut from seven to five by merging the quality assurance and IT departments under the Human Resources Director.

The materials and distribution departments were integrated under a new supply chain director. These directors, together with the directors of engineering, finance and manufacturing formed a five-member operations team reporting to the plant manager. The workforce was consulted in groups of approximately 20 people, the problems and strengths of the plant were explained and they were asked for their feedback on the following four questions:

- What is working?
- What is not working?
- What do we need to retain?
- What do we need to become a great plant?

This helped us to drill down and more fully understand our starting point and map out our program for change to optimise the plant’s performance. This required the shaping of three fundamental elements: the Operating System; Mindsets & Behaviours; and, Management Infrastructure (as shown in Figure 1).

![Figure 1: Production System Shaping](image)

As a direct result of workforce input, teams were put together to work on the following key areas:

- Supplier Development / Kanbans to factory
- Re-organise warehouse / Kanbans to factory floor
- Kanbans for internal improvement of Work-in-Progress
- Creation of a Central Store for spare parts
- Re-organisation of resources to ensure maximum support for production
- 5s - A Place for Everything and Everything in its place
- Clearly defined Communications Process

This consultation process ultimately spawned 10 principles which guided the programme for
change. These were later adopted more widely within Gillette and became known as:

**The 10 Drivers of Rapid Improvement – without Compromise ©**

1. Create an *open, honest* environment where good communication is treated as an essential part of the process in which everyone has a genuine voice.
2. Maintain a *high awareness* of the *competitive environment* and a *constant focus on cost reduction* and *continuous improvement*.
3. Build *urgency and speed of response* into all processes through the empowerment of people and elimination of bureaucracy.
4. Acknowledge *people* as your *greatest asset* and invest in their *personal development* on a continuing basis.
5. Clearly communicate goals and objectives to every level, and hold each person *accountable*.
6. Nurture an organisation that is in *constant touch* with developments in technology, the markets, the wider organisation and that anticipates and prepares for change rather than reacting to it.
7. Design *transparent financial systems* so that managers and supervisors have key cost measures as tools and can be held *accountable* for effectively managing their areas.
8. Develop an *effective performance appraisal system* where all employees get an assessment of their strengths and weaknesses, and follow-up plans to address their needs.
9. Take *swift action* to deal with personnel who obstruct or do not sufficiently contribute to change that is necessary for the continuing development of your business.
10. *Empower* people, by creating a *supportive, dynamic* team-based matrix organisation that allows for fast decision-making and where *occasional* mistakes are treated as opportunities for learning.

**Mobilising the Workforce**

To get people behind these drivers, a plant slogan was devised: “*Fighting for our future*”. This helped to keep the workforce focused on the reasons for the changes.

All of the above was guided by a culture of *rapid improvement*. This allowed for a radical overhaul of the old system. This was needed due to the historic complexity of production scheduling arising from packaging, as well as the lack of separation between production and material-handling duties. A “Just-in-Time” (JIT) team was created to help with issues arising from transition and to maintain momentum.

**Results Achieved**

After 3 months, the team had converted an estimated 70% of the shop-floor to the new system, achieving its goal. Inventories were down dramatically and most products were made on a weekly basis. By 2002, the plant was competitive in terms of cost and other indicators within Gillette facilities globally. By 2004 it was one of the overall top performers in the company.

After 3 years, the programme for change had delivered a reduction in the workforce by 40% and improved productivity by 56%. Product costs were slashed by 30-60% and compared favourably with China and Mexico. Value streams were created giving cross-functional teams responsibility for “their” factories, thereby making a large plant easier to manage and improving communications. The supplier base was rationalised and an aggressive supplier development program implemented.
Critical Learning Points

Having a workforce that is willing to (continuously) change is one of three keys for companies that want to compete in North America. The second is that management must understand the true costs and realistically appraise the merits of outsourcing. Thirdly, responsiveness and being close to the market is immensely important and translates into a real competitive edge when countering threats from more distant sites, in this case China and Mexico.

Conclusions

In summary, it is possible to survive and thrive in a high-cost environment, however, the right kind of leadership is critical, as is the expert application of lean practices. This brings us back to change and how to manage it. Change is a constant external factor, and likewise, from a manufacturing viewpoint, internal change must also be constant, with the emphasis on continuous improvement. Companies, workforces and suppliers, that resist change, instead of embracing it, will ultimately lose everything they seek to protect.

In 2002 the Iowa City plant was declared the best factory in Gillette. The rules of the game may have changed, but the workforce showed what is possible when challenges are tackled: adapting accordingly they stayed “relevant” to P&G’s business needs.  

Liam Cassidy is a Lean Manufacturing expert of international renown, with over 30 years experience, driving change management projects with outstanding results. Liam was the leading champion of world class manufacturing for Proctor & Gamble/Gillette worldwide, repeatedly delivering benchmark sites in Europe, the US and latterly Asia. Upon completing a stellar career with P&G in 2009, Liam established his consultancy LCL (Leading Change through Lean), which has offices in Ireland and Shanghai. Liam can be contacted by email: liam@consultlcl.com.cn.

1 In 2005 the Proctor and Gamble and Gillette Corporations merged
Attitude defines Altitude
By Pearce Flannery

How important is attitude to success in business? It appears to be more important than you might think. Even if your business offers great products and services at unbeatable prices, the attitude you project will be the factor that makes or breaks it. All the advertising, slogans, buzzwords and promotional campaigns in the world can’t mask a business that isn’t truly focused on the customer.

Likewise a person cannot mask a poor attitude over the longer term. How many times have you been in a great mood, only to meet someone who looked as if it hurt him or her to smile? This interferes with your own karma and in turn influences your own mood. We should all treat people the way they wish to be treated. A bad attitude not only reflects badly on them, it impinges on your personal outlook. A bad attitude can and will infect those all around it. Likewise a positive attitude empowers everyone that it comes in contact with, in every walk of life.

Ultimately you need to enjoy what you are doing. Your attitude needs to reflect this. There will be bad days but these are the days you need a positive attitude most of all. Remember work is only a chore when you would rather be doing something else. A study by Harvard University found that when a suitably qualified person gets a job 85% of the time it is because of attitude and only 15% of the time because of any other factors.

In my book Grabbing The Oyster – Anecdotes and Advice from Icons of Irish Business - I identified the three levels of attitude in groups or teams and used different yardsticks by which to measure them. For the purposes of illustration I will refer to these groups as the Three As.

Achievers: These are the people we all wish to be. They are the people that we all graduate to at social functions. They exude confidence and energy. They have that indefinable quality cal-
ve, cynical deadbeat attitude. This is why they are a***holes. Stay away from them, ignore them and whatever you do, do not listen to them. They will suck the life force out of you. This cannot be understated. Negative people are to be avoided as much as is practically possible.

In short ‘Dispense with A***holes’ - make it a personal policy decision for yourself. Write it down; Make it a creed that you live by. Cut them out of your life now, your life will be greatly enhanced by this act. Remember the old cliché: ‘If you must listen to an a***hole, break wind!’ It is said that you are the average of the five or six people you are surrounded by. Can you afford to have your attitude and abilities compromised by the cynical perpetual underachiever? If you wish to succeed in your endeavours you must deal with the a***holes in your environment. Cut them out of your life and your life will be the better for it.

In the 1980s British Airways embarked on a comprehensive Human Resources programme called ‘Putting People First’ (PPF). This programme studied all of their personnel and analysed their suitability for the business according to the strengths and weaknesses of each employee. This then gave them an accurate picture of the strength of the entire British Airways team and how closely aligned the team was to its specific requirements. This was likewise analysed for groups and micro groups within the overall British Airways team dynamic. The results were interesting to say the least (see Figure 1).

The upshot of this hugely expensive and time-consuming study was that the most desirable individuals are those that fill the upper right-hand quadrant. Winners were more desirable than any other combination of attributes. Those people that displayed an approach to business and to life in general that was high in energy, high in attitude were the type of people that were identified by ‘Putting People First’ as those people that could and would contribute most to whatever environment that they found themselves in. Qualifications and skills were only of a secondary importance.

This study was undertaken in a global organisation in the 1980s. It is interesting to note that the results of a scientific study quantified and empirically proven mirror the thought processes and attitude of our chosen business personalities. It seems clear to me that those that wish to succeed in their careers either as an entrepreneur, in an executive capacity or in any walk of life should take personal stock of their personal attitude as it applies to the above diagram.

The formula for success all seems to boil down to one word - ATTITUDE. Its importance cannot be underestimated.

Attitude: Write it down. Think about it. Put it in your bedroom wall. Embrace it because there is no getting away from it and there is no substitute for it. In this context I feel it is their secret to success as a positive attitude is infectious and empowering. It is an indefinable

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**Figure 1: Personal Attributes**

<table>
<thead>
<tr>
<th>Attitude</th>
<th>Energy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Politicians</td>
<td>Winners</td>
</tr>
<tr>
<td>Dead-Beats</td>
<td>Cynics</td>
</tr>
</tbody>
</table>

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variable but it can be identified by their behaviour and in every way they act. It defines you.
At Pragmatica our people are recognised as being the amongst best training and advisory professionals in their field. When we are working on an assignment on behalf of a client we always follow one major dictum:

Hire For Attitude And Train For Skill

In other words all factors being equal we always start by evaluating candidates on the basis of attitude. A person that exhibits the right positive ‘can do’ attitude has immense potential. They can be trained in specific processes or skills. As one of the most successful training and development organisations in our field we can confidently state that you cannot properly train or develop an unwilling candidate or one with a poor attitude. They do not wish to change or develop and will resist the process all the way.

The point I am trying to make is that no matter who you are or what you do, your life - both personal and professional - will be greatly enhanced by developing a positive ‘can do’ attitude. All successful people possess this positive ‘can do’ attitude, all of their staff are hired on this basis and their friends and social circle all seem to display the same qualities. This is no coincidence.

All successful people are successful because they have made themselves successful. The first thing they have done is to develop their attitude and then they have ensured that they have surrounded themselves with lots of positive attitude. There is no secret formula; it all boils down to a positive attitude. To summarise there are three types of people:

Those who make things happen,
Those who let things happen,
Those who say what happened?

Which category do you fit into? It really does not matter - what matters is what category you want to fit into. You can change category quite easily if you have the will to change. It all boils down to how you approach life. It boils down to attitude. Attitude really does define attitude!

Pearce Flannery is the founder of Pragmatica, widely acclaimed as one of Ireland’s leading management and marketing strategists. He has an international reputation as a business coach and he enjoys a high profile in the broadcast media. His reputation as a motivational, conference and keynote speaker is immense and he has lectured extensively on economic, business and automotive issues.
Reducing Complexity and Improving Agility in the Supply Chain
By Martin Christopher

Introduction

Recent events in the global economy have served to remind us that companies do not have complete control over their own destinies. We have witnessed how a crisis in the housing mortgage industry in the USA can lead indirectly to the collapse of companies in quite different industries in every corner of the globe. At the same time the competitive landscape is being re-shaped through mergers and acquisitions – many of them driven by the search for scale that is thought to be a prerequisite for survival in a recessionary environment.

This growing uncertainty brings with it a serious challenge to the classic practice of running the business on the basis of forecasts. It will be apparent that in conditions of stability – and hence lower uncertainty – forecast accuracy should generally be high. Equally, the converse will be true, i.e. as uncertainty increases so too will forecast accuracy reduce. Hence the argument that if uncertainty is to be the norm – at least for the foreseeable future – then a new approach will be required. Indeed, the challenge that organisations now face is how to reduce their dependence on forecasts and to become increasingly demand and event driven.

To counter the twin threats of greater uncertainty and heightened vulnerability requires a supply chain that is able to respond more rapidly to events as they happen and that is flexible enough to change as conditions change. This level of supply chain responsiveness is what many commentators now term ‘agility’.

Complexity and the Supply Chain

In its strictest sense, complexity does not mean complicated but rather it describes a condition of inter-connectedness and inter-dependencies across a network where a change in one element can have an effect on other elements – often in unforeseen ways. Today’s supply chains mirror very closely this idea of complexity. Indeed it is a misnomer to describe them as chains at all since a chain implies a simple linkage from one entity to another, whereas most supply chains are multi-echelon networks with many nodes and links.

Complexity in a supply chain can arise from a number of sources and some of the most common causes are detailed below.

i. Network Complexity
The more nodes and links that exist in a network then clearly the more complex it becomes. As a result of the outsourcing of non-core activities many companies are today much more reliant on external suppliers of goods and services. Those external suppliers also are dependent upon a web of second tier suppliers and so on. There is a strong likelihood that the focal firm at the centre of the network will not even be aware of many of the second or third tier suppliers that feed their upstream supply chain.

ii. Process Complexity
Underpinning every supply chain are innumerable processes – processes internal to the firm as well
as those processes managed by upstream and downstream partners. Often these processes have been developed in a haphazard way and have been added to and modified to reflect current requirements and as a result have become more complex. This complexity is manifested in processes with multiple steps, often performed in series rather than in parallel.

**iii. Range Complexity**

Most business organisations find that the range of products and/or services that they offer to the market has a tendency to grow rather than reduce. The rate of introduction of new products or services, new pack sizes or variants and brand extensions seems to outpace the rate at which existing products or services are eliminated. The general effect of this mushrooming of the product/service portfolio is to extend the ‘long tail’ of the Pareto distribution. Figure 1 below highlights the challenge.

![Figure 1: The “Pareto” or 80/20 rule](image)

**iv. Product Complexity**

The design of products can have a significant impact on supply chain complexity. It can be argued that the supply chain begins on the drawing board in that decisions on the choice of materials and components can directly or indirectly impact total life cycle costs as well as agility and responsiveness. Product complexity can arise because the number of components or sub-assemblies is high, or because there is little commonality across the Bills of Material for different products. The less the commonality at the Bill of Material level the less is the flexibility to vary product mix or volume.

A further unforeseen impact of product design decisions is that if components or materials are specified which happen to have lengthy replenishment lead-times then the ability to respond rapidly to changes in demand for the product will be impeded. By involving logistics and supply chain planners early in the design process much of the subsequent complexity can be avoided.

**v. Customer Complexity**

Customer complexity arises as a result of too many non-standard service options or customised solutions. The costs of serving different customers can vary significantly. Each customer will exhibit different characteristics in terms of their ordering patterns, e.g. frequency of orders, size of orders, delivery requirements and so on. These differences will be increased further as a result of the availability of different service options or packages and/or customisation possibilities.

**vi. Supplier Complexity**

The size of the supplier base can add to supply chain complexity by increasing the number of relationships that must be managed as well as increasing total transaction costs. Because one of the prerequisites for agility is a high level of collaborative working with key suppliers, this implies a high level of active supplier management and supplier involvement in process integration. It is unlikely that this degree of closeness can be achieved across a diverse supplier base and hence the need for rationalisation. The implications of such a supply base rationalisation are profound. Clearly careful regard must be paid to the effect of a smaller number of suppliers on the resulting supply chain risk profile. Too high a level of dependence on just a few critical suppliers can be dangerous. Instead a better option, if available, is to have a lead supplier across a category of products who takes responsibility for the management of that category across a number of suppliers, for example in the same way a fourth party logistics provider (‘4PL’) might co-ordinate a number of logistics and trans-
vii. Organisational complexity

Most businesses have traditionally organised around functions and departments and their organisation charts have many levels and tend to be hierarchical in this structure. Such ‘vertical’ organisational arrangements are no doubt administratively convenient in that there can be a ‘division of labour’ between functions as well as effective budgetary control. However, they tend to inhibit agility because they are, of necessity, inward-looking with a focus on efficiency rather than customer-facing with a focus on effectiveness. A further problem is that over time the functions have a tendency to become ‘silos’ with their own agendas and they can lose sight of the fundamental purpose of the business, i.e. to win and keep profitable customers.

Complexity and Uncertainty

The problem with complexity is not just that it is a significant driver of cost within a supply chain but that it also contributes to variability and uncertainty. Because so many of the interactions between agents and entities within a network can have a cumulative and combinatorial effect it is not always possible to predict the impact of those interactions. This is particularly the case where those actions are not always visible because they often take place at several stages removed from the focal firm.

A good example of a complex system is the weather. Many different influences combine to create a specific weather condition, each of those influences are themselves the result of interactions and hence a small change in one element can fundamentally affect the final outcome. Hence the difficulty that weather forecasters face in trying to predict even tomorrow’s weather.

The outcome of complexity in a supply chain, as with the weather, therefore is uncertainty and with that uncertainty comes an increased likelihood that forecast error will increase
in line with complexity. This leads to a conclusion that complexity reduction must be a priority for supply chain managers and that to rely on the classic forecast–based approach to supply chain management is inadvisable and instead the focus must change – rather than being forecast-driven the business must become event-driven.

From Forecast-Driven to Event Driven

There is a strong case to be made that, since the degree of turbulence and volatility in the market and business environment has increased, the ability of conventional forecasting tools to cope with this uncertainty is significantly weakened. Whilst some might argue that the response to this situation should be to improve the forecasting tools, an alternative view might be that we need to lessen our dependence on the forecast. If it were possible to respond to events as they happen rather than have to predict those events, then supply chain performance – measured both in terms of cost as well as customer service – would clearly be enhanced.

This idea of event-driven responsiveness is embodied in the philosophy of the agile supply chain. There are a number of enablers of responsiveness but probably the two most critical elements are visibility and velocity. ‘Visibility’ denotes the ability of an organisation to see real demand, real demand being the independent demand emanating from the final marketplace. ‘Velocity’ refers to the speed with which the organisation can respond to changes in real demand.

For many companies their visibility of real demand is obscured by the presence of intermediaries between themselves and the final market, particularly when there is a low level of shared information – or even none. The paradox is that whilst the information and communications technology (ICT) to enable information sharing across the supply chain is widely available, there is still a reluctance amongst many companies to fully engage with their supply chain partners in this way.

Improving velocity in a supply chain requires time compression - not necessarily by speeding up existing activities, but rather by reducing non-value adding time. In other words, if we can focus on the things that add value to customers and eliminate or reduce those things that do not, then velocity and hence responsiveness will increase.

Both visibility and velocity in the supply chain are adversely affected by complexity. Complexity reduction can enable simpler networks with improved ‘line of sight’ end-to-end along with more flexible and responsive processes. In the volatile and uncertain worlds that most businesses now compete in, this is a prize worth seeking.

Martin Christopher is Emeritus Professor of Marketing and Logistics at Cranfield School of Management. He has gained an international reputation for his work in logistics and SCM and is the author of one of the leading texts in the field, Logistics and Supply Chain Management: Creating Value-Adding Networks (Prentice Hall, 2005). He is a frequent presenter at conferences and workshops around the world and is the recipient of many awards, including the Distinguished Service Award of the USA Council of Supply Chain Management Professionals (CSCMP).
Supply Chain Learning – The Role of Games
By John Potter, Jerry Forster and Edward Sweeney

Introduction

It is well recognised by most successful organisations that people are an asset and that improving their performance, abilities and capabilities is a key requirement for sustainable business growth and development. However, the training budget is one of the first budgets to get cut at the first sign of a business downturn. If subsequent downsizing results, it soon becomes apparent when the business outlook improves that fewer people have to perform at a higher level if the organisation is to take advantage of the upturn. Following this logic, the training budget should be increased during a downturn so the organisation can get a jump start when the business outlook improves, thereby gaining a competitive advantage. Interestingly, compared to recessions in the late 20th century, in the current recession many businesses have reduced the working week rather than making people redundant. They have done this knowing it makes good business sense given how long it can take to develop a skilled workforce. For many organisations now could be the right time to invest in training, and what better way than gaining a hands-on and detailed understanding of issues than playing games simulating the “real business environment”.

The Basics for Good Learning

Learning Phases

The four stages of learning require differing approaches / styles of teaching as shown in Figure 1.

The four stages will always apply when learning any new skill and it does take time to go through the four stages. Ignoring the stages and applying the inappropriate teaching methodology can result in de-motivating participants and failure to achieve training objectives.

Subconsciously incompetent – “don’t know, that I don’t know.” At this stage the learning objective is education to create awareness, the “how” and relevance to the business / individual.

Consciously incompetent – “now know that I don’t know.” This becomes very apparent when the learning is put into practice. This stage is critical to skill development and motivation. It is often the stage when confidence dips and the decision to give up are most common.

Consciously competent – “now know how to do.” This is achieved through practising to improve capability and performance.

Subconsciously competent – “don’t need to think.” This is demonstrated by an apparent “automatic” ability to perform a skill. It is at this stage that the capability can start to be skilfully and appropriately applied to maximise performance. It is also the stage when people may think they have nothing to learn, so why bother with training!

Figure 1: Four Stages of Learning
Learning Styles
People learn in different ways, or at least have preferred ways of learning.

Activists: Learn by doing – activists want to get on with trying out new activities and are often willing volunteers

Pragmatists: Want to understand how new activities can be applied in practice so once this is understood like activists they are keen to try out new activities

Theorists: Often perfectionists and logical so keen to understand the principles before trying a new activity

Reflector: Cautious, careful, good listeners and will want to watch others before trying a new activity

Preferences for Receiving Information
- Visual Learners: Learn best from demonstrations and diagrams
- Auditory Learners: Learn best from explanations
- Kinaesthetic Learners: Learn best from demonstrations and practising

Good training should cater for all four styles and three preferences for receiving information. Therefore any process that aims to improve an individual or team performance, abilities and capabilities must develop a training programme that reflects:
- The four stages of learning, the different the learning styles and preferences to receive information; and,
- Relevance to personal development / team performance / business objectives

Learning From Sport

The learning and crossover between business and sport is becoming more relevant and commonplace. The traditional football manager is now more frequently the team coach and part of a bigger team responsible for team / squad selection, training and management. In individual sports the player / coach is being replaced by a multi functional team e.g. “Team Murray”.

No sports person / team trains and only competes in the event targeted e.g. Olympic Games, World Cup, Grand Slam without using other events as part of the preparation – friendly matches, pre season tours etc.

Business does not normally operate around a single event every 4 years, but is continuous day in day out, so “on the job training”, pilots, and test marketing is how organisations test ideas. Given business demands, how does an organisation build the team? In the supply chain, performance of the chain is determined by the weakest link. The organisation is a team of more functions than found in the typical supply chain (e.g. Finance, Legal, Marketing, Information Technology) but all must play a role if an organisation is to achieve its objectives and maximise business results.

Whereas the rugby team will have internal competition between players for places in the team, it is unlikely the forwards regard the scrum half as a competitor for team selection. However in organisations internal competition can be more intense than external competitors – “organisational politics.” This will be seen through competition within a department for promotion and inter departmental competition for influence and share of budgets. This extends throughout the organisation and not
uncommon to be most intense at Board level!

Competition can be healthy to bring out the best performance of an individual / department. However it can easily turn negative - adversely impacting overall organisational motivation, financial performance, market share, retention of the best talent etc. In many organisations competition between Sales and Marketing, Marketing and Production, Production and Logistics is common resulting in suboptimal results. The Supply Chain “profession” was conceived to optimise the supply of product and services. Sales and Operations Planning (S&OP) brings together all functions working together to achieve one business plan, and recognising that the “the whole is greater than the sum of the individual parts.” The history books of sporting endeavour will testify this concept with numerous examples of the apparent underdogs being triumphant.

**Team Building**

Developing an effective team goes through the same four stage learning process as described above, making team building two dimensional in terms of improving individual performance levels and overall team performance. This is achieved through:

- Recognition of the role of each player
- Focus on common goals and objectives
- Alignment of strategies
- Rewarding the whole, not the parts. Success and failure must be shared to prevent a culture of blame

Business managers recognise the need for the organisation to work together and offsite management team training events - climbing mountains, building rafts from oil drums and ropes to cross a supposedly crocodile infested river - are common. Sometimes budgets and / or numbers being trained result in these exercises being simulated in the “classroom.” Either option (provided the exercise is well organised and structured) can be valuable a part of any training session to:

1. Create an awareness of team work
2. Demonstrate points of learning
3. Identify organisation culture and / or behaviours
4. Have fun!

These are all worthwhile objectives, but whatever the reason or
original objective for including a game in a training event, often time allocation does not permit the learning potential to be fully utilised. The four stages of learning identify that maximising performance requires time for practice supported with good coaching.

For example games used for team building usually bring out the competitive side of participants. They are often executed at a frantic pace, chaotic and noisy. In pursuit of being the winner the original training objectives can get lost. However, they are very accurate in identifying how an organisation and individuals behave, albeit exaggerated, due to the time pressure and no organisational support structure. The winning team normally gets the least learning. Cynics claim this is because they have least to learn. Analysis of the results would reveal the missed learning opportunities:

- Role of leaders and leadership styles
- Importance of cross functional contributions
- Communication – listening, clarity of argument, assertive v. aggressive – to make the necessary choices
- Analysis and follow up – “plan, do, check and act”
- Team dynamics – finding the right roles for team members to optimise team performance
- Controlling the environment – reflects organisational culture and opportunity to study individual / functional / departmental behaviour
- Maximising team knowledge and capability

**Optimising the Use of Business Games to Improve Team Performance**

To get the most out of games as part of a training programme the following points are important.
1. Must be part of a programme – it takes time to analyse the results, explore the points of learning and more importantly how to skilfully apply within the organisation.
2. Relevant – not necessarily directly but participants must be able to relate / apply to the organisation and / or business objectives.
3. Cross functional – not always essential but if participants represent their function it will reflect on how the organisation functions. However, it can also be used to create learning on the challenges and difficulties of different functions e.g. the Sales Director responsible for the factory will demonstrate the issues Sales can create for Manufacturing. It is important to have a clear objective of why the game is being played.
4. If numbers permit, an organisation can set up different teams to play the same game and get multiple learning opportunities.
5. A well structured game should ensure roles and execution accommodates the differing learning styles and preferences as well offering sufficient cycles of the game for teams to progress through the four stages of learning.
6. Opportunity to observe and explore organisational culture and behaviour in a safe environment.
7. Experiment in different roles, strategies, behaviours with no financial risk to the business.
8. Create competition, motivation and fun off a foundation that is a serious business related objective to improve team performance, that will be ultimately be reflected in improved financial results.

NITI, in collaboration with SCALA Consulting, has launched in Ireland an internet-based game designed to enhance knowledge and understanding of successful supply chain strategy. Conceived, developed and supported by experts in the field of supply chain management the game was first run in the Netherlands last year. Some 280 teams of four people each took part and the game was highly acclaimed. The game, called *The Fresh Connection*, incorporates the principles for optimising the use of games to improve team performance providing an experimental learning environment where in a realistic, competitive environment teams are able to test their vision, their strategies and their tactics. It is an accelerated learning experience for all in-
volved in the supply chain including procurement, sales and manufacturing. The game demonstrates the impact a supply chain has on company profitability and provides all participants with an insight into the teamwork which is required to make real, tangible improvements in the supply chain and company performance. In addition to Ireland, The Fresh Connection is being run in the US, Netherlands, Belgium, Italy, Denmark, Switzerland and UK.

Over 6 weeks representing 3 years in the company’s development, teams make strategic and tactical choices. The intelligent software behind the game calculates the consequences for each team’s operation, with the results of the various teams’ weekly choices becoming the starting point for the next week’s round.

Teams taking part in the Irish competition starting in early 2009 will manage the product portfolios, compete for customer sales, supplier capacity and category management whilst managing the company through crisis, growth and other complex business scenarios. The objective is to optimise the total supply chain to maximise the company’s return on capital.

After the competition, all participating teams receive a performance evaluation report. In this report they will receive feedback on individual and team performance. What were the crucial decisions? What was good, or bad, about the decisions taken? What lessons should have been learned?

**Conclusions**

Single training events of a good quality are appropriate for specific needs e.g. learn a new process /procedure (e.g. health and safety changes, how to use new software / machinery). Games can be valuable learning and fun in achieving these objectives.

To build an effective team is an on-going process. Like any team sports organisations get new players, new competitors, new business opportunities and threats. Opportunities to practice in business can be difficult / expensive and even impossible to set up. Software will have a “training environment” to test upgrades before “going live.” In the same way training to optimise team performance needs to be planned and executed over a series of events such that the learning can be analysed, strategic and tactical changes can be measured to assess improvement and the team can experience the four stages of learning in a safe and structured way so that individual players can maximise their individual performance in optimising the overall team performance. The Fresh Connection provides a cost effective way to optimise team performance to improve business results and participants will have fun learning in the process.

**John Potter is Senior Partner with SCALA Consulting.** John was formerly European Logistics Director with SC Johnson and has extensive experience in managing strategic change, global implementation of integrated S&OP, and supply chain training. SCALA Consulting is running The Fresh Connection in the UK commencing January 2010.

**Jerry Forster** runs his own independent consultancy company that specialises in supply chain and logistics issues. Based in Ireland, Jerry offers a range of services including: logistics and supply chain strategy and solutions, warehouse and transport design, supply chain re-engineering, and supply chain systems.

**Edward Sweeney** is Director of Learning with NITL. Edward has worked in the SCM field a variety of business and academic organisations for over 20 years. NITL is delighted to be associated with bringing The Fresh Connection to Ireland in early 2010.
The following awards will be made on Thursday, 11th February 2010 at The Burlington Hotel, Dublin:

- Overall Award Logistics and Transport for Excellence
- Lifetime Achievement Award
- Supply Chain Integration Award
- Logistics Best Practice Award
- Passenger Transport Award
- Policy & Planning Award
- Safety Award
- Environmental Award
- Technology Award
- HR Development Award
- Commuting Award
- Publication Award
- Education Award
- Transport Integration Award
- Young Manager Award

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