

A RESEARCH INTO GLOBAL SUPPLY CHAINS

2010 - 2011

SUPPLY CHAIN MANAGEMENT AND THE EXECUTIVE AGENDA



EXECUTIVE SUMMARY

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It is an honor to be given the opportunity to introduce this important study led by prof. Simchi-Levi. Once colleagues at the mathematics faculty of MIT, we now have come to meet each other in the important sphere of supply chains and sustainable development.

The link between the Social and Economic Council of the Netherlands and the issue of sustainable development goes back some time. In 1993 we created a special committee on sustainable development. Just recently our Council has unanimously adopted an advisory report prepared by this committee. The premise of the report is that given the immense sustainability challenges the world faces, business-as-usual is no option. From now on, an appropriate balance between people, planet and profit has to be the starting point in every economic decision we take.

Companies face the task of making their entire production sustainable. As production chains now stretch out all over the world, smart supply chain management practices constitute the backbone of this process. Firms need even to guarantee that their direct suppliers produce under sound environmental and social conditions. But that is not enough, they must also do whatever they can to improve social and environmental performance further down the supply chain. This is exactly what the employers' and employees' organizations in our Council agreed upon when they signed the Statement on International Corporate Social Responsibility in December 2008.

Admittedly, sustainable supply chain management is easier said than done. Supply chains have grown immensely complex, and large international firms often face thousands of direct suppliers, let alone the number of indirect suppliers. Besides, firms face highly competitive environments and find it hard to pass the cost of improved investments in sustainability on to their consumers. Fortunately, we know it can be done. In recent years, many firms have significantly scaled up their sustainability performance through their supply chains, while maintaining excellent economic returns.

These successes show that there is a clear business case for sustainability. Especially with respect to savings on and the substitution of scarce, depletable resources and processes that contribute to climate change, the rationale is clear. It is important that the people dimension of sustainability across the supply chain is not overlooked. With wages rising globally, investing in people all over the world is key to achieve the hard needed labour productivity increases. Besides, investing in decent work is crucial for the reputation for firms, and more broadly speaking, for public support for open markets.

As CEO support is key to the realization of any significant change, I am happy to read in this study that sustainability is already a top concern for many CEO's. Yet some still do not grant it the priority it deserves. I hope this study will put sustainable supply chains at the top of every CEO agenda, where I believe it rightfully belongs.

Alexander Rinnooy Kan

Chair of the Social and Economic Council of the Netherlands

PREFACE



Photo: Christiaan Krouwels

Alexander Rinnooy Kan

CONTENTS

Preface by Alexander Rinnooy Kan	3
Introduction	6
Key research findings	8
Increasing drive towards flexibility	
Executive focus areas	
Identification of best performers	
Key insights into operations strategies	
Financial and business performance	
Executive agenda and supply chain strategies	
Appendix 1: Methodology	14
Appendix 2: Survey demographics	16
About the researchers	17
Acknowledgements	18

INTRODUCTION



Photo: Guus Pauka

Jaap-Willem Bijsterbosch

SUPPLY CHAIN MANAGEMENT AND THE AGENDA OF THE CEO

The objective of this research is to identify whether there is a link between a company's value proposition and supply chain strategy; what is the impact on business performance; and what are the strategies that are followed by best-in-class companies to align the two. More generally, the research objective is to address the alignment of SCM and the executive agenda - which includes customer value proposition - in a systematic way and develop a framework that links the firm's value proposition to its supply chain strategy.

The environment in which companies compete today is characterized by uncertainty and volatility in a number of areas. Is the economy going to grow and at which pace? Which markets are going to exhibit the biggest growth? What is the outlook for commodity prices in general and oil prices in particular? Is the cost of labor in emerging markets going to keep increasing? What is the role of frontier markets in achieving supply cost reduction? What is the impact of global fiscal deficits on corporate access to financing with good terms?

In such an environment, companies need to deploy a set of robust and agile business strategies. They need to differentiate from the competition; identify core capabilities that they must possess; determine how to achieve growth and optimize the return to its shareholders; and finally implement strategies to reduce risk exposure. All these issues are determined by the value proposition that the firm delivers to its customers.

Different customer value propositions require the deployment of different supply chain strategies. Amazon and Wal-Mart for example compete in the same space but focus on a different value proposition. Wal-Mart on everyday-low-pricing and hence a focus on a cost efficient supply chain, whereas Amazon's customer value proposition is product selection and availability and hence a supply chain strategy that emphasizes responsiveness and reliable order fulfillment strategy.

DNA of the company

Past experience has shown that companies with a mature level of alignment between their supply chain and business strategies are more successful in delivering their customer value propositions. They treat the supply chain as the DNA of their company which calls for serious management of the supply chain towards the most optimal demand – supply matching capability.

If the supply chain is the DNA of the company this means supply chain management should be an important topic on the agenda of the CEO and CFO. But is it really? How important is it on the agenda of today's business leaders? And if it is, what specifically is included? Risk management? Cost cutting? Maybe cash reduction or new business channels? Does part of the CEO's agenda include investing in the environment, communities and welfare to create sustainable value and improve brand recognition? Is there a link between supply chain management and these topics?

The answers to these questions are provided by a large scale scientific research performed by a joint MIT-TruEconomy team. This executive summary recapitulates the key findings and insights. Approximately 200 companies worldwide contributed with their knowledge. The survey contained questions to the CEO focused on the executive agenda, questions to the CFO focused on business performance and questions to the COO or supply chain executive focused on supply chain strategies deployed. The objective is to identify a framework that links the firm's value proposition to its supply chain strategy. Such a framework can establish a strong connection between business strategy and supply chain management and will drive supply chain management towards the firm's decision makers.

Unlocking the value

In this rapidly changing world, it is of great importance that supply chain executives are able to find the answers to their questions quickly. As TruEconomy Consulting delivers the highest quality supply chain management services resulting in measurable client benefits, we try to help find those answers. We believe that pro-actively sharing in-depth knowledge and best practices are key catalysts for pushing the envelope in the discipline of supply chain management.

Scientific research will help find answers to critical questions. Unfortunately for various reasons it may take years before leading scientific research will draw on trade and industry. Therefore TruEconomy Consulting firmly invests in scientific research and sharing and applying the outcomes. Our partnership with the renowned Massachusetts Institute of Technology in Boston allows us to not only take the supply chain management discipline to a higher level but also unlock the outcome of all research conducted together at a higher pace.

Next steps

This research 'Supply chain management and the executive agenda' proves there is a direct connection between the maturity of the supply chain and the company performance. With the outcome of this research you can give your current supply chain a health check and see whether or not you have the correct enablers. It gives the ability to have a common language between CEO, CFO and supply chain executives, which will take discussions beyond reducing inventory or transportation costs, straight to the core of supply chain management: sustainable improvements to the bottom line and the ability to become an outlier in your industry.

We wish you lots of inspiration and healthy discussions.

Jaap-Willem Bijsterbosch, Lars Leemhorst

Managing directors of TruEconomy Consulting

INTRODUCTION



Photo: Guus Pauka

Lars Leemhorst

KEY RESEARCH FINDINGS

Continuous increase of volatility in both demand and supply drive companies more and more to a flexible response business model

INCREASING DRIVE TOWARDS FLEXIBILITY

An important starting point is an increasing drive towards flexibility. One observation made recently in the literature is the distinction between those companies whose supply chain strategies are focussed on cost-efficiency and those who are focussed on flexible-response. When participants were asked to characterize their companies, it turned out that most companies in our survey emphasize a flexible-response strategy.

Specifically, 50 out of the 82 companies characterize themselves as focusing on responsiveness while 32 characterize their strategy as focusing on cost-efficiency. *Figure 1* provides information on the number of flexible response and cost-efficient companies in different industries.

Participating companies come from a wide variety of industries including *industrial, consumer packaged goods (CPG), healthcare, high-tech, retail and transportation*, as also illustrated in *Figure 1*.

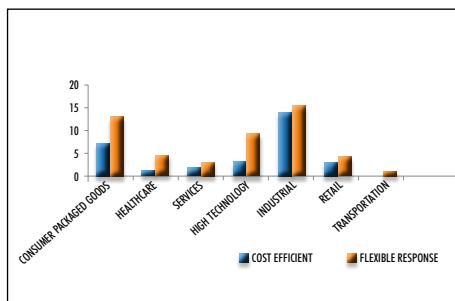


Figure 1: Industry profile of survey participants

The observation that there seems to be a trend towards a flexible-response strategy is to be expected for the high-tech industry where the product innovation speed is high. Even in traditional industries, however, such as industrial, CPG, healthcare or retail we notice that a larger percentage of companies characterize their strategy as flexible-response. One reason for this change is that product innovation speed is increasing even in traditional industries. A different reason is the increase in the level

of volatility both in demand and supply, as well as the increase in other types of risks, forcing companies to be more flexible and more responsive.

EXECUTIVE FOCUS AREAS

The survey contains questions to the CEO focused on the executive agenda, questions to the CFO focused on business performance and questions to the supply chain executive focused on supply chain strategies deployed. The areas which our survey participants emphasize the most are highlighted below.

CEO focus areas

The top three focus areas for the CEO are illustrated in *Figure 2* and they include *growth, competitive differentiation* and *shareholder return*.

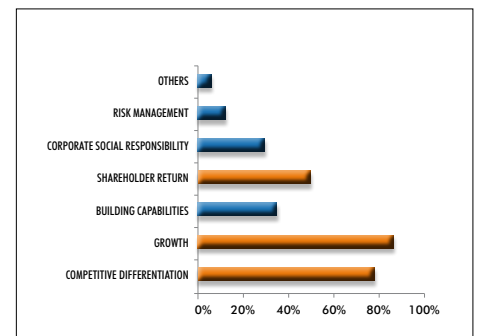


Figure 2: Top CEO focus areas for survey participants

The most popular ways in which companies pursue *growth* is by focusing on *profitability, sales revenue* and *new products and services*. *Competitive differentiation* is pursued by focusing on *innovation, customer satisfaction* and *brand*. Finally, *shareholder return* is pursued by largely focusing on *operating costs* followed by *customer pricing* and *resource allocation*.

CFO focus areas

The top focus areas for the CFO are illustrated in *Figure 3* and they include *costs, profitability* and *liquidity*.

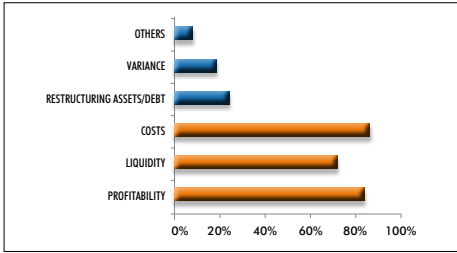


Figure 3: Top CFO focus areas for survey participants

Focus on costs is pursued by emphasizing *reduction of cost-of-goods-sold, operational efficiency and reduction of sales, general and administrative expenses.*

According to the survey, and not surprisingly, CFOs who focus on *profitability* emphasized *earnings-before-interest-and-tax (EBIT) and operating margin* whereas those CFOs focusing on *liquidity* emphasized *operating cash flow, working capital and corporate cash* followed by *cash-to-cash cycle time.*

SCM focus areas

The top three focus areas for supply chain executives include *satisfying customer demand, supply chain organization, processes and technology, and purchasing* as shown in Figure 4. How do these supply chain executives achieve each one of their objectives?

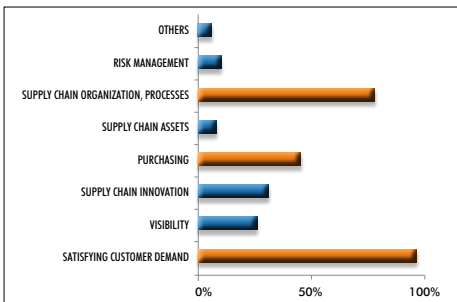


Figure 4: Top SCM focus areas for survey participants

Satisfaction of customer demand is mostly achieved through *reduction of customer lead times, and reduction of stock outs.* Executives who identify *supply chain organization, processes and technology* emphasized *S&OP processes, followed by IT for planning and collaboration.* Finally, those

executives that focus on *purchasing* emphasized *reduction of supplier costs, supplier quality and supplier reliability* followed by *reduction of supplier lead-times.*

All these observations apply to the complete sample of participating companies. A more refined analysis allows the research team to distinguish between strategies used by successful cost-efficient companies and strategies applied by best-in-class flexible-response companies. This is discussed in the next section, followed by emerging correlations across the CEO, CFO and SCM strategies. The correlations are critical in identifying the link between the firm's value proposition and its supply chain strategy.

IDENTIFICATION OF BEST PERFORMERS

After finishing each survey section, participants were asked to rank their company's performance against targets for specific Key Performance Indicators (KPIs). Supply chain KPIs include information on *inventory turns, supply chain costs, customer order fill rate, customer order lead time, customer order profitability and forecast accuracy.* Of course, one would expect that cost-efficient companies will emphasize inventory turns and supply chain costs while flexible-response companies emphasize *customer order fill rate and customer order lead-time.*

Therefore, performance against targets on *inventory turns and supply chain costs* is applied to identify the best-in-class cost-efficient companies. Similarly, performance against targets on *customer order fill rate and customer order lead-time* is used to identify best performing flexible-response companies. This is illustrated in Figure 5.

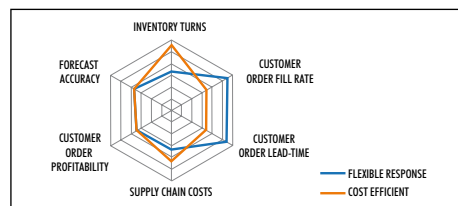


Figure 5: Best-in-class supply chain performance

KEY RESEARCH FINDINGS

Top performing flexible response companies and top performing cost-efficient companies emphasize different supply chain KPIs

KEY RESEARCH FINDINGS

Flexible response companies and cost-efficient companies each adapt different supply chain innovation strategies

In this manner, the top 30 companies were identified. By comparing these best-in-class companies to everyone else we are able to identify effective operations strategies, business strategies and their connection to financial performance.

KEY INSIGHTS INTO OPERATIONS STRATEGIES

Figure 6 illustrates the supply chain focus areas for the 30 best performing supply chain strategies.

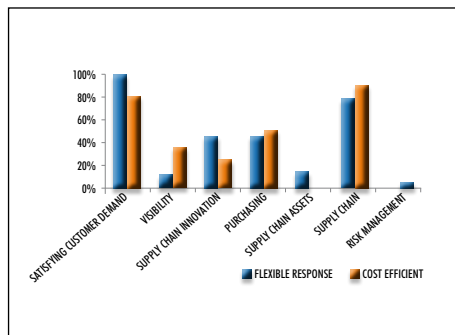


Figure 6: Supply chain focus areas for best-in-class

Following this observation and by analyzing in detail the supply chain sections of the survey responses for these companies, a number of interesting insights are inferred.

Insight 1: Flexible-response supply chains emphasize the fulfillment function.

Survey evidence presents a number of findings that highlight the focus of flexible-response supply chains on the fulfillment function. *Satisfying customer demand* has been selected as a top focus area by *all* participating flexible-response companies. The majority of them have answered that reduction of customer lead-times as well as reduction of stock outs are top priorities. Further survey evidence suggests that in order to achieve these objectives companies move along the following directions:

➔ Competitive differentiation and flexibility through manufacturing and distribution – implementation of postponement strategies.

➔ IT solutions for planning (forecasting, capable-to-promise, available-to-promise, order planning) to reduce information lead-times and properly position supply for sales and order promising.

➔ Collaboration initiatives and visibility in upstream and downstream parts of the supply chain.

By contrast, the minimization of total supply chain costs is (almost) equally important for both cost-efficient as well as flexible-response companies.

Insight 2: Operational visibility is a key strategy for cost-efficient supply chains.

Focus on *operational visibility* in our survey is three times higher for cost-efficient companies. The emphasis of these companies on lower inventories and lean supply chains removes a certain degree of system flexibility and exposes the supply chain to all sorts of disruption. To mitigate these risks, best-in-class cost-efficient companies invest in supply chain visibility. As a result, most of the cost-efficient companies emphasize visibility into supply chain inventory.

Insight 3: Cost-efficient and flexible-response supply chains adopt different supply chain innovation strategies.

The data shows that cost-efficient best-in-class companies tend to place particular emphasis on *design for supply chain*. This typically involves the design of products and processes taking into account products and supply chain characteristics. It usually leads to a reduction in the number of components, product and supplier rationalization, and generic products which allow for postponement strategies. Risk pooling concepts can be applied to reduce uncertainty and volatility and lead-times can be reduced as a result of postponement. Recent *design for supply chain* initiatives in various companies have reduced working capital - by reducing inventories - while maintaining or even improving service levels. These impro-

vements are more popular with cost-efficient supply chains.

Innovation in flexible-response companies, on the other hand, is focused on a high frequency of new products and service introduction. This is probably associated with the fact that flexible-response supply chains are typically encountered in faster clock-speed industries, such as high-tech. The supply chain organization is critical in this case since the frequent introduction of new products and services requires seamless supply chain integration and support in various levels.

Finally, cost-efficient supply chain companies place particular emphasis on the innovation of the distribution channel which can be explained by the tremendous impact it can have on transportation and warehousing cost reduction. For that purpose, cost-efficient companies invest in distribution and transportation to reduce exposure to cost and risk.

Insight 4: Cost-efficient and flexible-response supply chains adopt different purchasing strategies.

Indeed, cost-efficient supply chain focus on reducing total landed costs in making purchasing decisions while flexible-response companies focus on lead-time reduction.

FINANCIAL AND BUSINESS PERFORMANCE

After completing all three survey sections, participants were asked to grade their company's performance in various KPIs versus the targets set by the firm for these KPIs.

Figure 7 illustrates the similarities and differences between best-in-class flexible-response and best-in-class cost-efficient companies along the executive metrics. As one can see, supply chain best-in-class flexible-response companies dominate on almost all the financial measures except two: *inventory turns*, where supply chain best-in-class cost-

efficient companies perform better and *total asset turnover* where performance of the two classes of companies is the same.

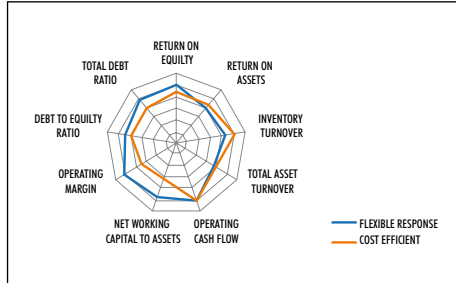


Figure 7: Financial performance of supply chain best-in-class against company targets

At the same time, see Figure 8, there is very little difference between best-in-class cost-efficient and flexible-response companies relative to their individual business targets such as *revenue* or *return-on-equity*, while some difference exists, in favor of flexible-response companies when *considering customer satisfaction* and *market-share*.

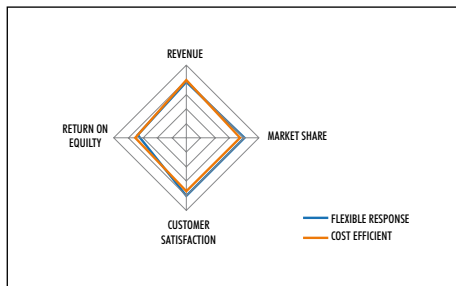


Figure 8: Business performance of supply chain best-in-class against company targets

KEY RESEARCH FINDINGS

Cost-efficient supply chain companies place particular emphasis on the innovation of the distribution channel

KEY RESEARCH FINDINGS

Across all the best-in-class companies a strong correlation has been found between a business focus on corporate social responsibility and innovation in the supply chain

EXECUTIVE AGENDA AND SUPPLY CHAIN STRATEGIES

Having noticed the differences between cost-efficient companies and flexible-response companies, we analyzed the 30 best-in-class companies to identify links between the executive agenda and supply chain strategies.

Of course, this is not the only research to focus on the link between the two. In 'Operations Rules: Delivering Customer Value through Flexible Operations' (MIT Press, September 2010), Prof. Simchi-Levi developed a framework to allow firms to link their operations strategy with customer value proposition. He illustrates this framework with a few examples. For instance, the business strategy of giant retailer Wal-Mart is every-day-low pricing and as a result its operations strategy emphasizes cost efficiency. By contrast, the business strategy of online retailer Amazon is selection and availability and therefore its operations strategy is focused on efficient and reliable order fulfillment strategy.

By the same token, the business strategy of Dell Computers when selling its product online is customer experience - the ability of consumers to choose whatever product configuration they want - and therefore, Dell strategy is focused on flexibility through an assemble-to-order manufacturing strategy. This is exactly the challenge that Dell faced when the firm recently introduced a new channel to market, the retail channel. Here the customer value proposition is not selection - the number of configurations available at a store is rather limited - but rather the value proposition is low price. Therefore, in the retail channel, the operations strategy must emphasize cost efficiency.

The data in this study provides further supports of this connection between the executive agenda and supply chain strategy. For example, our data suggests that companies whose business focused on growth, the supply chain emphasized organization, pro-

cesses and technology. Similarly, when the executive agenda included building capabilities, the supply chain focused on investing and utilizing supply chain assets effectively.

And finally, and most importantly, across all the best-in-class companies a strong correlation has been found between a business focus on *corporate social responsibility* and *innovation* in the supply chain. This is indeed appropriate since corporate social responsibility includes, among others, a focus on carbon footprint reduction, elimination of waste, and energy and water conservation - all of which require innovative product design, manufacturing and supply chain strategies.

Some of the notable differences between cost-efficient companies and flexible-response companies include the observation that supply chain innovation facilitates growth for flexible-response companies but impedes growth for cost-efficient companies. This is explained as follows. Flexible-response strategies are associated with fast-clock speed products and technologies, thus the need for supply chain innovation. On the other hand, supply chain innovation typically requires significant investments, hence is not followed by those companies whose strategy emphasizes cost reduction.

Finally, the research team focused on quantifying the magnitude of the link between executive agenda and supply chain performance. For this purpose, the four executive performance measures - *revenue*, *market share*, *customer satisfaction* and *return-on-equity* - were extracted to a single performance indicator referred to as the *Business Performance Indicator* (BPI) using appropriate variable reduction techniques.

Our objective is to compare the BPI of the 30 best-in-class supply chains to that of the remaining 52 companies. This is done in *Figure 9* where you can see the fraction of best-in-class companies with different BPI values alongside the fraction of the remaining companies with the same BPI.

As you can see, a large fraction of the best-in-class companies exhibits high BPI. On the other hand, the percentage of remaining companies with similar BPI levels is much smaller. For example, 62% of the best-in-class companies exhibit above average BPI compared to 43% of the remaining companies. Similarly, 47% of the best-in-class companies are in the top one third of the BPI ranking compared with only 25% of the remaining companies.

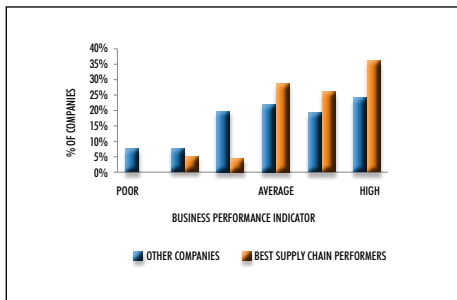


Figure 9: Comparing BPI of best-in-class with that of other companies

Similarly, the CFO's performance metrics - *return-on-equity, return-on-assets, total assets turnover, inventory turnover, operating cash flow, net working capital to assets, operating margin, debt to equity ratio, and total debt ratio* - were also extracted to a single performance metric referred to as the *Financial Performance Indicator (FPI)*. This indicator is plotted in *Figure 10* where we provide information on the fraction of best-in-class companies and the remaining companies with different FPI values. Again, most of the best-in-class companies exhibit a significantly higher financial performance.

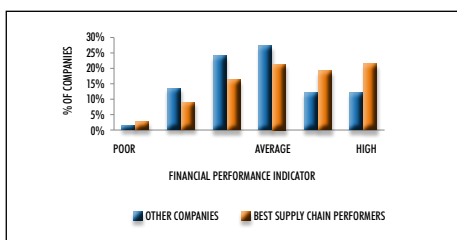


Figure 10: Comparing FPI of best-in-class with that of other companies

SUMMARY

The relationship between supply chain strategies and business strategies has been examined with the objective to establish a link between supply chain management and the value proposition of the company.

To summarize, the results indicate not only a link between the executive agenda and supply chain strategies but also that business and financial performance go hand in hand with supply chain performance. Indeed, the business and financial performance of most of the best-in-class supply chains in the survey outperform that of the remaining companies.

The number of possible relationships and correlations established in this survey covers a wide space of strategies. Although, a big number of them have been analyzed already there are still areas of great interest that have not been explored fully. The methodology developed and the information collected from the survey provides us with appropriate tools to go into even more extensive depth in the near future.

KEY RESEARCH FINDINGS

The business and financial performance of most of the best-in-class supply chains in the survey outperform that of the remaining companies

APPENDIX 1

METHODOLOGY

The backbone of the framework comprises three distinct elements: CEO, CFO and SCM agenda items.

In the early phase of the project, an extensive literature review was conducted to identify existing references on the link between CEO and CFO agenda items and supply chain strategies. One important observation made recently in the literature is the distinction between those companies whose supply chain strategy is focused on cost efficiency and those who are focused on flexible response.

The objective was to understand the difference between the two strategies and their link to the executives' agenda. For this purpose, a number of supply chain and business performance measures, financial and non-financial, were reviewed. The objective is to apply the performance measures and identify best-in-class cost efficient companies and best-in-class flexible-response companies and use the characteristics of these companies when identifying successful links between SCM and the executive agenda.

The second phase of the project involved field study - pilot interviews with fourteen companies from eight different industries. The objective of this phase was to identify

the top focus areas in each firm along three dimensions: the executive agenda (CEO); financial performance (CFO); and supply chain strategy. The combined findings from the field study and the literature review were used to design a focused survey that was posted on the web and allowed invited companies to fill out.

The results from the first and second phase of the study - the top areas of focus for the CEO, CFO and SCM - are shown in *Figure 11*. In the online survey, executives, each one in their respective section, were asked to identify which of these focus areas are currently on the top of their agenda.

This was followed by a detailed survey consisting of three parts, one for each function (CEO, CFO, SCM). The objective was to identify how companies accomplish their top priorities.

For example, how do firms achieve competitive differentiation? Is it by strengthening brand or by investing in product innovation? Does it vary depending on whether the firm emphasizes cost efficiency or flexibility and responsiveness?

Similarly, how do firms achieve growth? Is it through a strategy that emphasizes



Figure 11: Candidate focus areas for CEOs, CFOs and supply chain executives

profitability or market-share? If the firm focuses on building capabilities, what are the capabilities it is trying to build? Is it looking at building strong customer and supplier relationships, for example, or is it looking at optimizing its supply chain asset strategy?

When supply chain executives focus on visibility, what are they trying to accomplish? Is it visibility to supplier's production plans, inventory levels, or shipment schedule? By the same token, when supply chain executives focus on supply chain innovation, what are they referring to? Do they emphasize network redesign for emerging markets or new products introduction? And, when supply chain executives focus on procurement, when do they emphasize lead-time reduction? When do they emphasize cutting procurement costs? And when do they emphasize supplier performance?

Survey responses were then analyzed for relationships across the CEO, CFO and SCM agendas. These correlations help form emerging hypotheses linking business strategies with supply chain strategies in both the cost-efficient and flexible-response group of companies. In this final stage, our objective was two fold:

- ➔ To identify key differentiators between the strategies of cost-efficient companies and flexible-response companies.
- ➔ To identify key interactions between business strategies and supply chain strategies when serving different value propositions.

The research results are captured in a comprehensive research report and high level summary is captured in this executive summary.

APPENDIX 1

APPENDIX 2

SURVEY DEMOGRAPHICS

A total of 196 companies have participated in the survey - not all have completed the three sections. In particular, 106 completed the CEO sections and 91 completed the CFO sections, 173 companies completed the SCM sections. A total of 82 companies have completed all three parts of the survey - the analysis and key findings are based only on these companies.

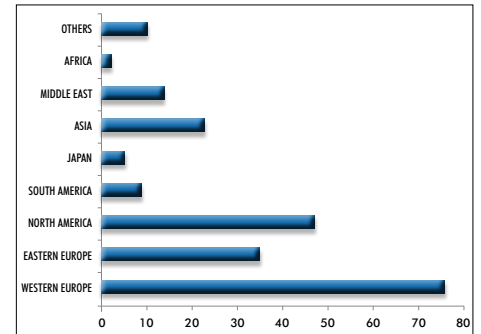


Figure 13: Top markets for survey participants

SUPPLY CHAIN TYPES, GEOGRAPHIES AND MODES OF TRANSPORT

The majority of participating companies in our study (66%) have a *make-to-stock* manufacturing function; a smaller number (44%) have *make-to-order* environment and only 20% have an *assemble-to-order* supply chain. This is illustrated in *Figure 12*.

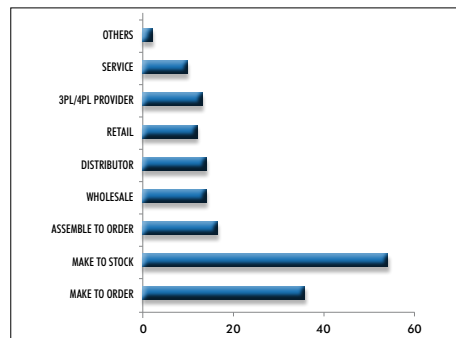


Figure 12: Supply chain type of survey participants

Not surprisingly, top sourcing regions by spending for the survey participants are Western Europe followed by North America and Asia. This is illustrated in *Figure 14*. The increase in transportation cost and labor cost in off-shoring regions explains - to a certain extent - the relatively lower percentage of Asia suppliers compared to the recent past.

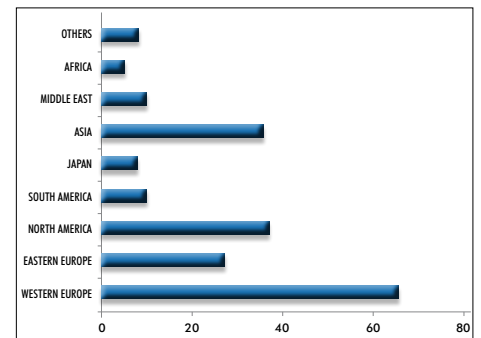


Figure 14: Sourcing regions by spending for survey participants

The distribution of sales regions by volume is shown in *Figure 13*. Top markets are Western Europe and North America which can be explained by the fact that the largest fraction of survey participants represents European companies. Interestingly, out of the participants that have significant sales in North America, the majority (2:1) are flexible-response companies. On the other hand, companies that sell significantly in Eastern Europe are mostly (2:1) cost-efficient.

Top inbound and outbound transportation modes are road and water. In particular, 80% and 96% of companies responded that they used road transport for inbound and outbound, respectively. Water transport is used by 57% for inbound and 34% for outbound.

There is a significant amount of air transport (32% for both inbound and outbound) and, as expected, the majority of companies that apply this mode are flexible-response companies.

BIOGRAPHIES

PROFESSOR DAVID SIMCHI-LEVI

Department of Civil and Environmental Engineering and the Engineering Systems division
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Prof. Simchi-Levi is considered to be one of the thought leaders in supply chain management. Prof. Simchi-Levi holds a Ph.D. from Tel Aviv University. His research currently focuses on developing and implementing robust and efficient techniques for logistics and manufacturing systems. He has published widely in professional journals on both practical and theoretical aspects of logistics and supply chain management.

He is also the editor-in-chief of *Operations Research*, the flag-ship journal of *INFORMS*, the Institute for Operations Research and the Management Sciences. This fall he will publish a new book: 'Operations Rules: Delivering Customer Value through Flexible Operations' (MIT Press, September 2010).

CONSTANTINE G. VASSILIADIS, Ph.D

Lead researcher & solution architect
TruEconomy Consulting



Dr. Constantine Vassiliadis is the lead researcher from TruEconomy Consulting who worked with Prof. Simchi-Levi on this research project. Dr. Vassiliadis has also worked with Prof. Simchi-Levi on the previous joint MIT-TruEconomy Consulting project titled 'A Research into European Supply Chains 2008-2009' which highlighted insights in key trends, challenges and opportunities for European supply chains.

Dr. Vassiliadis holds a Ph.D from Imperial College, London in Process Systems Engineering and a Master's Degree (MEng) in Electrical and Computer Engineering from the Aristotle University of Thessaloniki. He has been working as a consultant on supply chain improvement initiatives for companies world-wide for more than a decade.

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ABOUT THE RESEARCHERS

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ABOUT THE SCM RESEARCH COMMUNITY

The SCM Research Community is a community of supply chain executives with the objective to take supply chain management to a higher level. One of the key activities within this membership is to participate in the research project by completing the research survey. The outcome of all research conducted together is exclusively shared with our SCM Research Community, which currently amounts almost 250 supply chain executives. For more information, visit: www.trueconomy.com



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