

Sustaining supply chain alignment – step by step

Kerstin U. Langenberg, Ralf W. Seifert, Corey Billington

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1 Introduction

Has your firm's profitability suffered despite growing revenues? Has the business environment you operate in changed more rapidly during the last 5-10 years than ever before? Have your products commoditized at a faster pace, have new low-cost competitors emerged or have consumer expectations for product variety increased? Are you struggling with keeping the pace of change in your organization ahead of the pace of change taking place in the world around you? Maybe you have once been proud of your supply chain capability, but lately it has lost traction? If you answer such questions with yes, it might not be sufficient anymore to tweak existing processes, but it might be time to be time to realign your supply chain.

In 2006, for example, the European power tool maker Hilti was sensing augmenting supply chain costs despite increasing revenues. A thorough business analysis readily revealed the root of the problem: Hilti's customer target markets had changed. While historically the largest portion of the firm's sales had been realized in Europe, Hilti's revenues were now more and more realized in Asia. With production centered in Western countries this shift had blown up Hilti's logistic costs. Thanks to the early problem detection, the firm was able to launch in time a supply chain restructuring initiative to counteract the growing mismatch between customers and supply chains. Unlike Hilti, the famous toy-maker Lego waited too long to acknowledge and react to the changes in its business landscape: Occupied with fancy toy construction Lego didn't realize when its customer base developed from small stores to Walmart-like retail giants with new service expectations. Likewise the firm missed that continuously dropping price points due to closing-in competitors put its profitability at risk. As a result the company lost money four out of seven years from 1998 through 2004 despite ongoing popularity of its toys and widespread recognition of the Lego brand. To stir its path away from dreading bankruptcy the firm finally launched a costly supply chain transformation initiative in 2004 targeting distribution, product development, manufacturing, and sourcing at the same time.

As long as a firm prospers management tends to neglect the importance of strategic supply chain realignment. Ironically, the more competitive a supply chain setup once had been the more a firm might be at risk, as it will likely seek to improve rather than fundamentally rethink the current setup. As the competitive position erodes, firms find themselves in trouble, yet least equipped to change. Worse, awareness and willingness to engage long term alignment is only half the challenge: considerate implementation it is the other half, as the following example illustrates.

Consider a firm that is indeed aware of the importance of sustained supply chain alignment, as it plans the launch of a highly innovative product line targeting the European market. The sales department forecasts a 36-months product lifespan. Initially, high process and demand uncertainty is expected. Later sales volume is forecasted to rise while demand patterns stabilize. At the end of the product's life price points are expected to decrease due to closing-in competitors. Ultimately, volume will also decrease. Asked to develop a sustainable supply chain strategy the operations department undertakes a thorough data-driven analysis and proposes a two-pronged approach: to manage demand uncertainty during product roll out, the product should be manufactured with a high degree of flexibility close to the target market, e.g. in Hungary. Once the product is established and uncertainty is reduced production is recommended to be moved to China for the firm to stand its ground during the expected price battles. Total supply chain costs across the product's three-year-lifespan justify the investments due to the proposed supply chain adaptation.

At the first glance the manager seems to have done his homework well. But can he really be confident to make the right decision? Let's reconsider the decision-making process: Striving to maximize revenue the sales department estimated a three-year product lifespan. Subsequently, the operations department aimed to minimize costs over this pre-determined time horizon. Uncoupled, both decisions seem right. But what if, in fact, a 30-month product lifespan requiring no supply chain adaptation would lead to significantly higher profits, as cost savings in

operations might outweigh reduced revenue due to a shorter product life time as volume decreases? And furthermore, how robust is the suggested approach? The operations department approach leads to minimum supply chain costs, but is the forecast reliable and what latitude does the firm have if not? And how do subsequent product generations influence the decision? The right decision for the firm is impacted by strategic trade-offs, such as cost-minimization versus robustness, and readiness for constant supply chain adaptation versus configuration for the long term. The firm's situation is not unusual. Silo-metrics, such as maximizing revenue or minimizing isolated supply chain cost categories, inevitably lure firms into suboptimal decision-making. A sustained long-term supply chain strategy that is well-aligned with a firm's products and business environment can only be attained by looking through a broader lens. Most firms, however, seem to have no formal process for guiding such strategy. This motivated us to develop a process for managing a sustained supply chain strategy, and to identify opportunities for improving long-term competitiveness.

As initial step we suggest creating awareness for your firm's situation by asking how much your firm is affected by the change taking place in the world around it. The second step is a profound business context analysis, which ultimately points to what your supply chain currently lacks. With this understanding at hand the third step is identifying and weighing options for future supply chain strategy. Only then, the fourth step is implementing the strategic choices made.

This process, while generic, is devised based on a literature review as well as quantitative insights from mathematical models we developed. From these sources, coupled with personal experience, we outlined a detailed step-by-step process. During numerous in-depth firm interviews with executives from leading firms, we subsequently challenged the process and adapted it where necessary, until it reached its current state. Next, we will explain each step of the process and provide supporting examples.

2 How much is your firm affected by change?

Constant change is characterizing today's business landscape and challenges supply chain competitiveness. Figure 1 illustrates the large variety of change drivers: *changing supply chain costs* and *changing supply chain quality* diminish supply chain performance directly. *Evolving firm strategy and products*, *changing customer needs*, *increasing competitive pressures*, and *increasing supply chain benchmarks* elevate supply chain requirements and thus indirectly erode supply chain competitiveness.

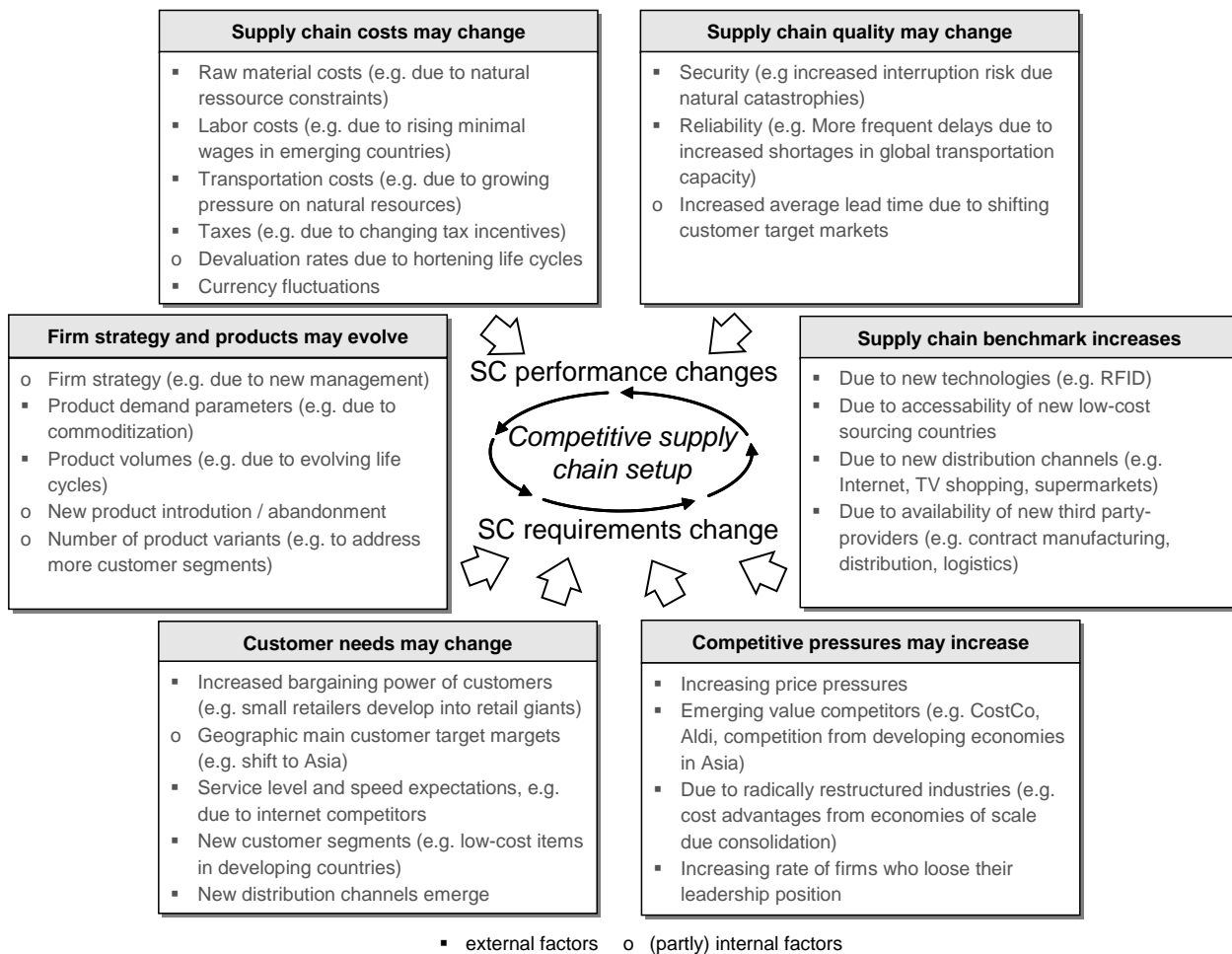


Figure 1: Drivers for change

Examples concerning changing supply chain costs include increasing labor costs or new taxation rules, as Hilti recently experienced: Shortly after the firm had shifted parts of its production, the Chinese government raised the VAT challenging the success of the offshoring

move. Supply chain quality may erode just as abruptly. Increasing shortages in global transportation capacity frequently lead to long and uncertain supply lead times and may erode customer service levels.

Shortening product life cycles are one reason for ever more rapidly evolving product portfolios. Today, originally innovative high-tech products commoditize in just a few months time. Supply chain requirements then change from market-responsive, for high process and demand uncertainty, to cost-efficient, for withstanding industry price battles. Strategic management shifts towards new market requirements, such as the introduction of new product lines, likewise let product portfolios change.

A prominent root cause for changing customer expectations was the rise of the Internet. This new distribution channel let customer's quality and cost expectations increase. Computer manufacturer Dell catered to this new needs and readily overtook market leadership.

Competitive pressures increased, for example, due to the upcoming of value competitors in the retail industry, such as Costco and Aldi. Their aggressive price policies intensified competition and consequently fortified the necessity for cutting-edge supply chain performance.

Across industries, low-cost sourcing is a widespread cause for a raised supply chain benchmark: Originally a cost-advantage, low-cost sourcing developed into a competitive imperative with more and more global players adopting it. To date the cost-cutting approach has become a must across industries and thus critically raised cost benchmarks.

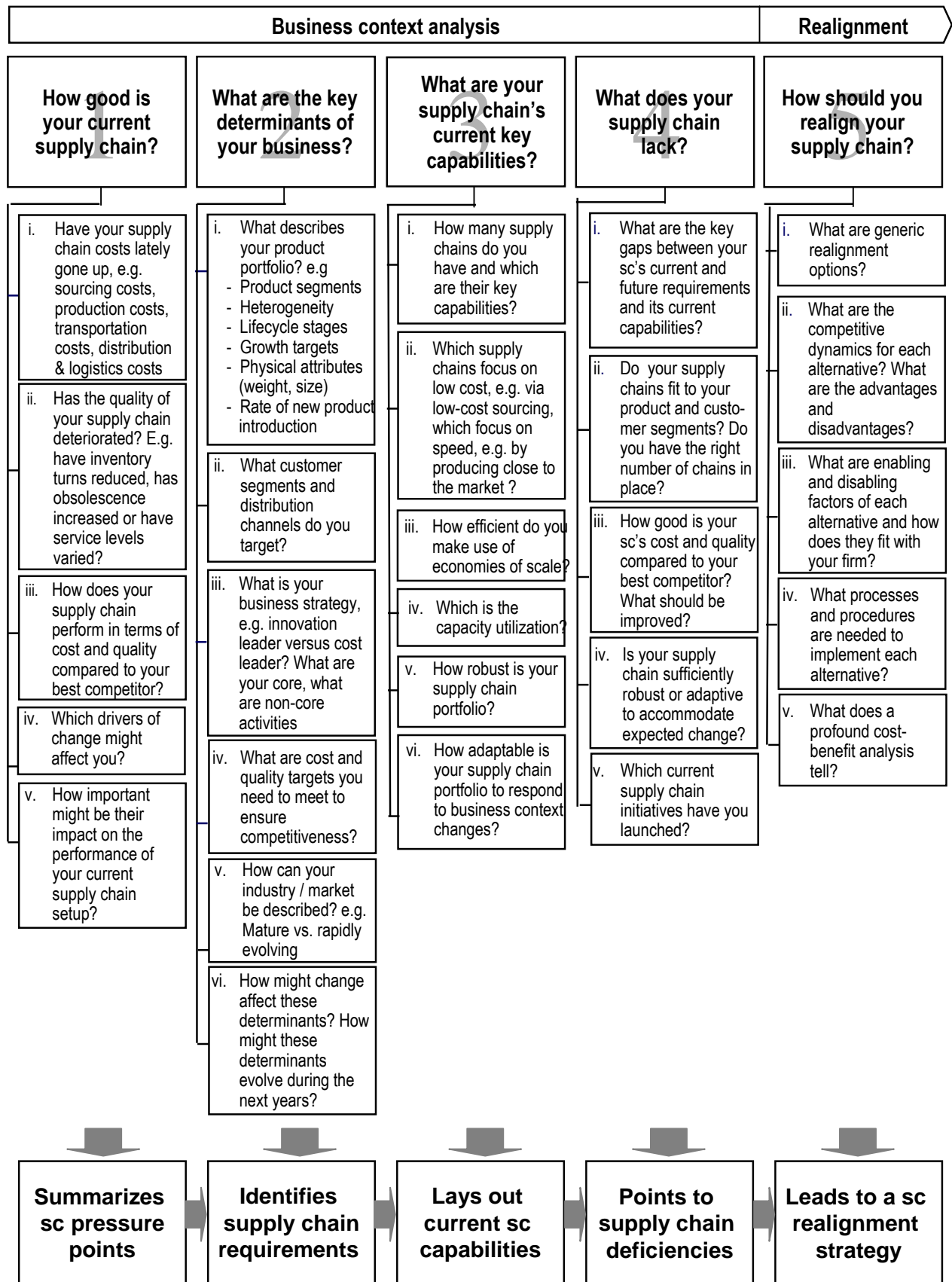
These examples lucidly manifest that change constantly challenges supply chain competitiveness. Consequently, strategic supply chain management must start from the outside – adapting the big picture perspective. How is the world changing and to what extent does that affect your firm? How acute is realignment for your firm? To get a first rough-cut impression simply take a highlighter and mark all change drivers in Figure 1 with yellow that you would rate relevant for your business in the past or in the future and all those with red that you would

consider extremely relevant. If the picture becomes considerably colorful, alarm bells should start ringing in your head!

3 Business context analysis

But what will it take for you and your organization to succeed today and in the future? To dig deeper the next step is to pursue an informed business context analysis (see Figure 2) targeting four central questions: (1) *How good is your current supply chain?* (2) *What are the key determinants of your business today and in the future?* And how do they translate into supply chain requirements? (3) *What are your supply chain's current key capabilities?* And finally, (4) *What does your supply chain lack?* While these questions may seem unpleasant, profound answers will reveal which supply chain capabilities support your business best. Such answers can be attained by parsing your situation with a set of well-structured diagnostic questions.

Begin by challenging your supply chain's current performance. Define appropriate metrics and analyze how your supply chain's cost, quality, speed, and robustness have evolved during the past years. For example, have sourcing costs, transportation costs, distribution or logistic costs increased? If so, by what factor, by 10%, 20% or 30%? Have service levels decreased? Further data points can be attained by benchmarking your supply chain with those of your best competitors. Assess by how much their supply chains outperform yours along relevant key performance indicators concerning costs and quality. Secondly, assess the impact of future change on your organization. To what extent do the change drivers marked in red and yellow threaten the competitiveness of your supply chain in the future? Sensitivity analysis may help estimate the impact of select scenarios. And, equally important, which opportunities do change drivers offer to gain a competitive edge? Being ahead of the fundamental change taking place in the world is key to your success. Such analysis will give a good indication on acuteness of



supply chain realignment for

Figure 2: Realignment process

your organization. It not only deepens your own understanding, but may also be helpful when communicating the acuteness for supply chain realignment to senior management.

Next, distill the key determinants of your business. For example, what describes your product portfolio? How is it segmented and which key product attributes, such as demand volatility, product devaluation rate, or cost constraints, drive each segment? What is the turnover of your product portfolio? Focus on dimensions that are relevant for supply chain decisions. Additionally, include other internal and external business characteristics relevant to your business into the analysis, such as your customer segments or distribution channels. What supply chain requirements do they impose? And what is your business strategy? Are you an innovation leader potentially requiring market-responsive supply chains? Or is your core competence cost based competition? And how will change affect these requirements in the future? What will your world look like in 3-5 years time? Again, relate back to the change drivers highlighted in yellow and red and assess their effect on your business characteristics. What will be the main characteristics of your business in the future? So-synthesizing the current and future supply chain requirements across different business dimensions will result in a profound of what key characteristics your business shows – currently and in the future.

With this roadmap of key characteristics at hand, next assess your supply chain's current capabilities. Which distinct supply chains do you have currently established and which are their key capabilities? For example, which supply chains are rather market-responsive, which are rather physically-efficient and how robust or adaptable are they? Which are their strengths, which are their weaknesses? Which products are delivered via which supply chain?

The analysis of the key determinants and requirements of your business on the one hand and the situational analysis on the other hand provide an excellent platform to finally distill the deficiencies of your current supply chain setup. Use the data points and compare your current and future needs with your current supply chain capabilities. For example, do your supply chains fit to your product and customer segments? To what extent? And, is your supply chain

sufficiently robust or adaptive to accommodate expected change? Questions like these will guide you to identify the deficiencies of your current supply chain setup. Furthermore, scenario-based evaluations may provide guidance to help estimate the actual and potential damage these deficiencies may cause.

Only after such business context analysis and after having built up a profound understanding of your supply chain’s deficiencies the next question becomes relevant: *(5) How should you realign your supply chain?*

4 Generic options and competitive dynamics

Now, transform the insights from the business context analysis into a supply chain strategy capable of sustaining success. We distilled three strategic key dimensions that determine the character of a firm’s supply chain portfolio: the number of supply chains in use, the degree of market-responsiveness versus physical-efficiency of each chain and the degree of stability versus robustness versus adaptability.

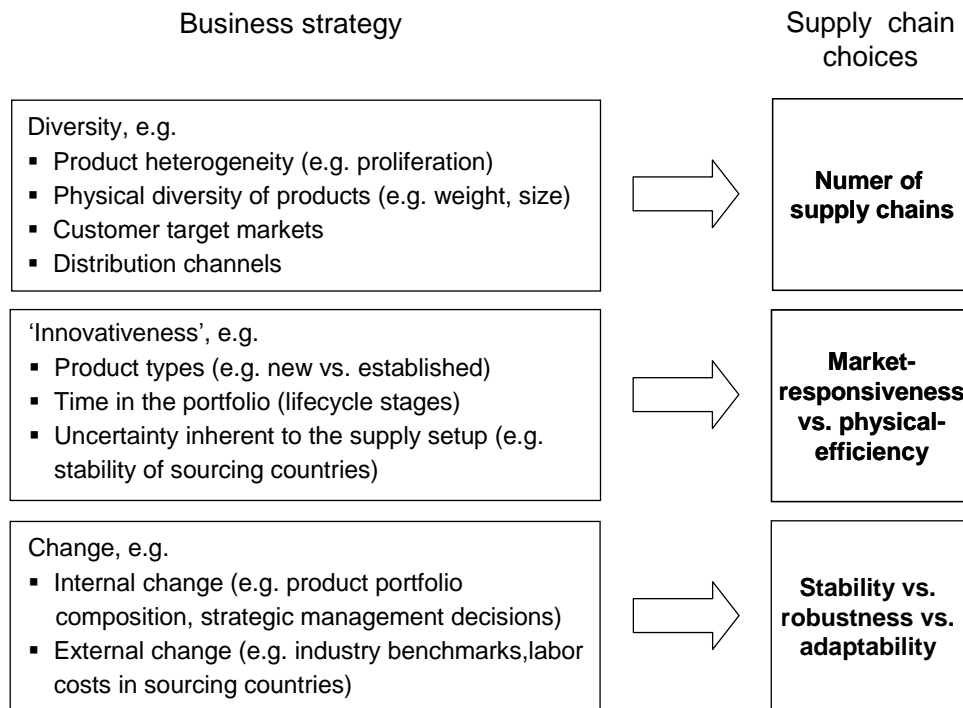


Figure 3: Aligning supply chain strategy with business strategy

The results of the business context analysis directly impact the strategic choices for these dimensions necessary to make your supply chain fit for the future (see Figure 3).

In this section, we lay out the opportunities each option provides, discuss enabling and disabling factors and elaborate competitive dynamics. Finally, we lay out implementation alternatives for each option.

4.1.1 Few versus many supply chain capabilities

A central element to drive supply chain dynamics is the number of supply chain capabilities a firm maintains to bring out its products to its customers (Langenberg; 2007). One extreme is a single supply chain for all products. The other extreme is setting up a new supply chain for every major product category in the portfolio (see Table 1).

While a single supply chain keeps complexity low and allows leveraging economies of scale, a larger portfolio of different supply chains enables catering to heterogeneous requirements. Put in simple terms the more diverse and volatile a firm's supply chain requirements are, the larger the optimal number of different supply chain capabilities. Hewlett-Packard is an example of a firm that capitalized on identifying the right number of supply chains (Billington; 2002): Historically, the firm designed supply chains for its new products from scratch assessing different configurations via time-consuming modeling tools. This proceeding caused the number and variety of HP's supply chains to grow over time – sometimes to the point where the company had developed different supply chains for each product shipped to the same channel of distribution. To reduce complexity and to respond to increasing price pressures in the industry, HP launched a supply chain consolidation project in 2000. As a result, the firm consolidated its over 20 supply chains for consumer goods into four supply chain platforms and four order management engines (see Figure 4).

Products delivered via the supply chain *International direct ship*, for example, are manufactured in a global manufacturing center and then directly shipped by air to consumers and channel partners.

Table 1: Few versus many supply chain capabilities

| | Few supply chain capabilities (1-2) | Many supply chain capabilities (>4) |
|-------------------------|--|---|
| Opportunities | <ul style="list-style-type: none"> ➤ Reduces fixed costs (e.g. facility investment & maintenance costs, capacity costs, potentially inventory holding costs due to pooling) ➤ Allows leveraging economies of scale (e.g. reduced rates for transportation) ➤ Reduces complexity costs (e.g. overhead costs, discounted supply chain set up costs, uncertainty in setting up a supply chain) ➤ Few predefined supply chain platforms make new product introduction easier | <ul style="list-style-type: none"> ➤ Allows supply chain customization to differing needs (e.g. different target markets, different product or customer segments) and thus results in low product-specific costs, such as raw material and other acquisition costs, transportation costs, direct and indirect manufacturing costs, costs of working capital ➤ Mitigates risk as risk is spread across many supply chains ➤ Might increase supply chain adaptability (e.g. reassigning products across existing facilities) |
| Enabling factors | <ul style="list-style-type: none"> ➤ Homogeneous product portfolios (e.g. similar physical products, coefficient of variation, devaluation rates, profit margins, ...) ➤ Homogeneous customer segments (e.g. in terms of quality requirements or geographically) and homogeneous distribution channels ➤ High fixed costs and chances for economies or scale (e.g. automotive industry) ➤ High complexity costs (e.g. small firms with little experience in administering a large number of supply chains) | <ul style="list-style-type: none"> ➤ Heterogeneous product portfolios (e.g. products with different physical and demand characteristics, in different lifecycle stages, ...) ➤ Heterogeneous customer segments (e.g. quality customers versus price-sensitive customers) and distribution channels (e.g. retailers versus internet) ➤ Highly innovative products that nevertheless differ from each other (as these products benefit most from small changes in the degree of market-responsiveness) |
| Implementation | <ul style="list-style-type: none"> ➤ Clear segmentation of products and customers to identify required supply chain capabilities ➤ Increasing homogeneity (e.g. pruning products from the portfolio that don't fit the predefined supply chain) | <ul style="list-style-type: none"> ➤ Clear segmentation of products and customers to design supply chain capabilities for competitive advantage (refer to Corey's HP portfolio paper) |

The abundance of distribution centers or localization facilities leads to reduced inventory costs, at the expense of high transportation costs. In the supply chain *Regional value add*, in contrast, a partially completed version of a product is shipped by boat to be finished at regional localization and assembly centers around the world. This supply chain reduces transportation costs, but increases labor costs. HP assigned its products to the four platforms according to predefined product attributes, such as the products' profit margin, weight and size, inventory-driven cost, or forecast-error. Digital cameras, for example, are delivered via *International direct ship*, due to their low weight and high devaluation rate. Desktop printers, for example, are

delivered via *Regional value add* to benefit from postponement due to worldwide demand pooling. HP reports to have saved millions of dollars from simplifying processes and leveraging economies of scale, while still retaining earlier efficiencies in inventory and tax.

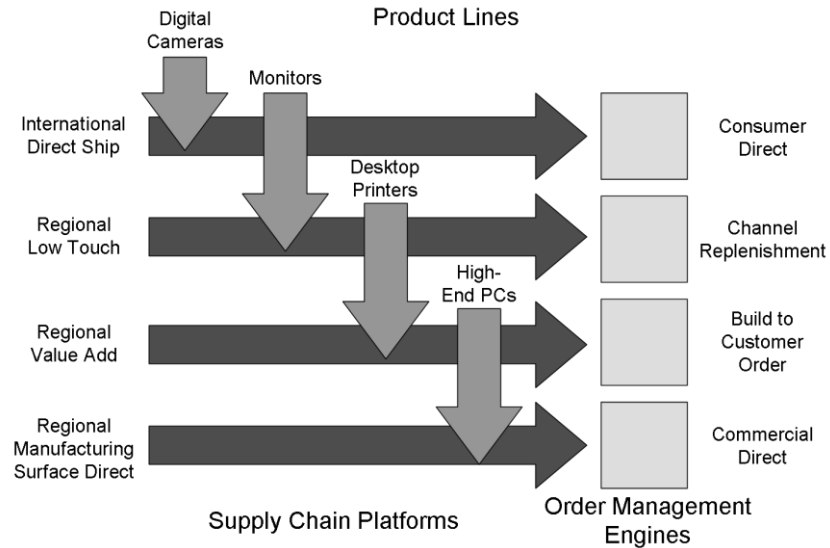


Figure 4: Supply chain portfolio at HP (source: Billington (2002))

4.1.2 Market responsiveness versus physical-efficiency

A second key dimension is the degree of market-responsiveness versus physical-efficiency of each supply chain in the portfolio. A market-responsive supply chain provides flexibility at extra-cost, while a physically-efficient supply chain is streamlined towards cost reduction (Fisher; 1997). Computer giant Dell partly owes its success to its market-responsive supply strategy: Implementing an internet-enabled direct sales, make-to-order strategy the firm can offer a large choice set to its customer, while keeping inventory costs under control. Other firms gain a competitive edge by focusing on the reduction of physical costs, as increased moves towards low-cost sourcing manifest. The right degree of market-responsiveness in your supply chain depends on the requirements for the supply chain under consideration (see Table 2), such as your products, but also your external business context. How much flexibility and responsiveness do you need? What did your business context analysis reveal? Are the products exposed to high

demand uncertainty? Are you operating in a new or volatile market and what does increased market-responsiveness cost you?

Table 2: Market-responsive versus physically-efficient supply chain setup

| | Market responsive supply chain | Physically efficient supply chain |
|------------------|---|--|
| Opportunities | <ul style="list-style-type: none"> ➤ Reduction of <i>market-mediation</i> costs, such as holding costs (including value loss) and costs of stockout and lost sales (including end-of season markdowns) | <ul style="list-style-type: none"> ➤ Reduction of <i>physical</i> costs, such as the sum of raw material and other acquisition costs, transportation costs, facility investment and maintenance costs, manufacturing costs, distribution center costs |
| Enabling factors | <ul style="list-style-type: none"> ➤ <i>Innovative</i> products (with high coefficients of demand, short life cycles, high contribution margins, high value loss) ➤ New or volatile markets ➤ Production-critical technologies ➤ Products for which market-responsiveness is cheap to attain (e.g. air-transportation for light-weight products) | <ul style="list-style-type: none"> ➤ <i>Functional</i> products (with low coefficients of demand, typically long life cycles, low contribution margins, low risk of value loss) ➤ Stable markets ➤ Products for which market-responsiveness is expensive to attain (e.g. if quality-suppliers only exist in developed countries) |
| Implementation | <ul style="list-style-type: none"> ➤ Clear focus on market-responsiveness & flexibility ➤ Possible design elements are (Reichhart; 20 07): <ul style="list-style-type: none"> - Demand anticipation - Manufacturing flexibility - Fast transportation modes - Excess Inventory - Product architecture / postponement - Information integration across the supply chain - Coordination and resource sharing - Organizational integration - Spatial integration & Logistics - Global versus local sourcing | <ul style="list-style-type: none"> ➤ Clear focus on the reduction of physical costs ➤ Possible design elements are: <ul style="list-style-type: none"> - Offshore production or assembly (low-cost sourcing) - High capacity utilization rates - Cheap (slow) transportation modes (e.g. by ship and not by air) - Less inventory - Long-term supplier contracts and quantity commitments for cost reduction - Aiming for lower target service levels |

Next, dig deeper and analyze how you should implement market-responsiveness. Various approaches exist (Reichhard; 2007), as diverse as installing better tools for demand anticipation, increasing manufacturing flexibility by using more hand-labor and less automated processes, or adopting faster transportation modes. Again, screen the product attributes you distilled during

the business context analysis and your business environment to decide which kind of flexibility you need. How heavy are your products? How critical to your core business are they?

Similar to Zara and HP, a large European electronics manufacturer established both market-responsive and physically-efficient “lean” supply chains for its products. At one extreme the firm delivers lightweight products with high *value-density* and unpredictable demand, such as mobile phones, via market-responsive supply chains. Produced in China, the phone bodies are shipped by air to a customization site in Europe where the final assembly (e.g. determining the color) takes place. The finished products are then delivered to the customers. At the other extreme the firm delivers its coffee-makers with a lean supply chain setup. As demand for coffee-makers is very predictable the firm explicitly makes no investments into forecasting and ships the finished products by boat from their manufacturing facility to the consumer markets. Such physical-efficient setup gears the firm to succeed in industry price battles.

4.1.3 Long-term thinking: Between stable, robust and or adaptive design

A third key dimension is long-term thinking. We differentiate three generic concepts to make supply chains fit for the future: building a *stable*, a *robust* or an *adaptive* supply chain (see Table 3). In a stable supply chain all processes are streamlined to accommodate best a firm’s current business context. Depending on the firm’s requirements, this may mean, for example, to configure a very cost-efficient supply setup. Focusing on current opportunities and challenges, a stable supply chain outperforms robust or adaptive supply chains as long as the business context remains stable. Unforeseen changes, however, may result in unforeseen deficiencies, as the chain is not prepared to manage them. Firms operating in stable business contexts, such as Lindt & Sprüngli with its strong brand name, might benefit from such a stable supply chain.

A robust supply chain is likewise designed for the long-term and not expected to be frequently structurally adjusted. Its setup, however, is built to accommodate change. A permanent multi-sourcing strategy, for example, may hedge against dropping-out suppliers or against transportation capacity becoming unavailable. Producing with low average capacity utilization

rates may help to accommodate demand swings or prepares operations for potential future growth – at the price of higher fixed costs. Innovative concepts, such as making short-term use of idle capacity, however, may help diminish such costs: A European beverage producer, for example, reduces the costs of idle capacity by producing rebranded, cheaper versions of its premium drinks, at times of slow general demand. This helps control the cost of robustness – given the firm manages to keep product cannibalization out.

In an environment of constant change the challenge is to build a supply chain where change is the norm – the adaptive supply chain. All processes of an adaptive supply chain are designed for the short-term. Fixed-long term assets, such as production facilities requiring high investments should hence be minimized and replaced by more flexible alternatives, such as short term contract manufacturing. Albeit extremely difficult to attain and maintain, adaptive supply chains are a competitive imperative in many fast-moving industries: Lucent, for example, lost ground in the Asian market for digital switches, when it missed out to redesign its supply chain in the late 1990's. To meet the speed of its rivals Siemens and Alcatel, Lucent had successfully set up regional production facilities in Taiwan and China. However, as the technology for digital switches matured, a variety of medium-sized manufacturers had built up the capability to manufacture the product for a fraction of Lucent's development cost. While its competitors immediately outsourced their production to capitalize on the lower prices, Lucent was tied to its production facilities, in which it had heavily invested. By the time Lucent finally realized that it had no choice but to follow the trend to stand its ground, the firm had already lost the battle for market leadership (Lee; 2004).

The choice between these three design alternatives should be based on the exposure to change on the one hand, yet also on barriers to adaptation on the other hand (see Table 3). To identify your optimal fulcrum between stability, robustness and adaptability, consult the results of your business context analysis.

The above discussion framed strategic key choices you have to make. Being aware of such alternatives, their enabling and disabling factors, and implementation alternative allows you acting with a big picture in mind. Key to success is to make informed strategic decisions to then streamline all processes to support this decision and fully exploit its potential.

Table 3: Stable versus robust versus adaptive design

| | Stable design | Robust design | Adaptive design |
|-------------------------|--|--|---|
| Opportunities | <ul style="list-style-type: none"> ➤ Eliminates waste (e.g. lean supply chains) and thus reduces static supply chain costs | <ul style="list-style-type: none"> ➤ Makes the supply chain less vulnerable to expected change and risk ➤ Reduces the necessity for supply chain adaptation | <ul style="list-style-type: none"> ➤ Makes the supply chain adaptable and thus enables it to quickly shift gear when necessary ➤ Capability to be <i>ahead of the competition</i> |
| Enabling factors | <ul style="list-style-type: none"> ➤ Stable business context, e.g. with respect to <ul style="list-style-type: none"> - Product portfolio - Customer needs - Competitive pressures - Supply chain benchmarks - Supply chain costs - Supply chain quality | <ul style="list-style-type: none"> ➤ (Potentially) dynamic business context ➤ High barriers to supply chain adaptation (e.g. requirement of costly production assets) ➤ Soft factors that constrain frequent supply chain adaptation (e.g. hiring / firing people) | <ul style="list-style-type: none"> ➤ (Potentially) dynamic business context ➤ Low barriers to supply chain adaptation (e.g. relying on contract manufacturers) ➤ Exposure to unpredictable change, which cannot be accommodated by robust design ➤ Industries with high cost pressures where robustness is not an alternative |
| Implementation | <ul style="list-style-type: none"> ➤ Stability analysis of the firm's business context and industry analysis ➤ Measures to further increase business context stability, e.g. <ul style="list-style-type: none"> - considerate new product introduction - product portfolio renovation - careful supplier selection | <ul style="list-style-type: none"> ➤ Possible design elements are: <ul style="list-style-type: none"> - Multi-sourcing (from different regions and suppliers) - Dispersed manufacturing footprint (geographically) - Excess capacity - Multi-channel distribution - Multiple logistics providers - Short-term capacity utilization (e.g. refurbished products) | <ul style="list-style-type: none"> ➤ Possible design elements are: <ul style="list-style-type: none"> - Outsourcing of sourcing, manufacturing, logistics, distribution, e.g. use of contract manufacturers - Flexible machine setups (e.g. possibility to shift production of a product across facilities) - Short-term contracts despite potentially higher prices |

4.1.4 Supply chain realignment versus business context adjustments

However, there is not only one *right* realignment strategy. Although often neglected, not only can supply chains be aligned to match a firm's business context, but also can the vice-versa approach be followed. Adjusting product portfolio heterogeneity, product turnover policies, or internal strategies, can change supply chain requirements. Key is to commit to a strategic direction and then align the broad range of initiatives with this overall objective in mind.

Consider two very successful clothing companies, the Spanish company Zara and the German CBR Fashion Holding. Zara brings out a large portfolio of both innovative and functional apparel items and maintains a supply chain portfolio with both market-responsive and physically-efficient capabilities to meet its products' requirements. The CBR Fashion Holding, a smaller competitor of Zara with brands such as StreetOne, maintains only a single, physically-efficient, supply chain capability to reduce complexity. As a consequence the firm solely delivers functional mainstream products that match this physically-efficient supply chain. Other product types are not considered for production. Although operating in the same market with strikingly different supply chain approaches both firms' strategies have led to excellent performance.

So, what role does the supply chain play to earn sustained profit? Figure 5 illustrates supply chain related profit drivers: factors determining long-term revenue, as well as a variety of cost categories determining static supply chain costs and supply chain adaptation costs. Different strategies interrelate these profit-drivers in different ways: While Zara boosts long-term revenue with its diverse product segments, the CBR Fashion Holding economizes static supply chain costs, such as acquisition costs or inventory costs due to its narrow product portfolio. Both firms have aligned products and supply chains and thus attain a healthy long-term profitability.

Furthermore, consider a firm that delivers mainly innovative products and additionally a few functional products – all delivered via the firm's market-responsive supply system. Due to the improper supply chain, the functional products show poor profitability. The firm has two realignment options: Either it can install a physically-efficient supply chain that delivers the

functional products at acceptable costs. Or it adapts its business context towards its supply chain capabilities and prunes the functional products from its portfolio to refocus on innovative products – for which a well-running supply chain is already installed.

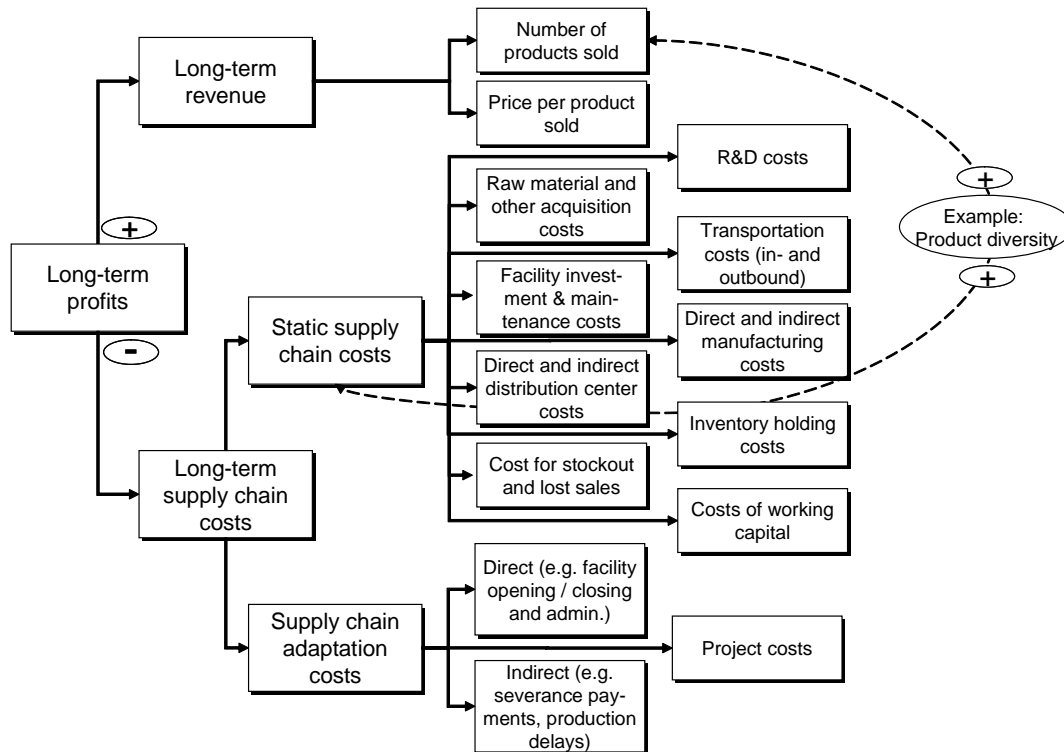


Figure 5: Supply chain cost categories

IBM capitalized on such strategy for its laptop division: When the portable computer industry commoditized and price pressures increased, the firm sold its laptop division to the Chinese computer manufacturer Lenovo. This enabled IBM to refocus on its strong innovative product lines without having to build up entirely new physical-efficient supply chain capabilities.

As the examples manifest, adjustments in a firm’s business strategy can be valuable substitutes for supply chain realignment.

5 Pursuing the project: Do’s and don’ts

The next step of the process is to pursue the realignment project and implement the strategic choices made. This step is less generic and depends on operational factors, such as the firm’s

experience with realignment projects and the manpower available. While thus not the main focus of this manuscript, we would nevertheless like to share some insights we attained from the interviews we pursued.

- **Differentiate problems into symptoms and root causes**

When analyzing the reasons for degrading poor supply chain performance, be aware to well distinguish symptoms from root causes! Excessive inventory costs, for example, are a symptom for weak supply chain performance, yet, the underlying root causes may be as diverse as poor inventory management, wrong sourcing policies, and inappropriate product portfolio management.

- **Consider a broad option space**

Not always is the initially most promising avenue for realignment the best option to pursue. Instead, be creative and build a large option space before narrowing your perspective! A European beverage producer, for example, struggled to balance capacity to master peak demand as well as periods of low demand in a cost-efficient way. Today, the firm has allocated sufficient capacity to accommodate peak periods. To nevertheless keep fixed costs low the firm produces rebranded beverages for a cheaper “while supplies last” label in periods of low capacity utilization.

- **Avoid silo decision-making – challenge your metric system**

Take a bird’s eye view on your supply chain and avoid silo-decision-making. Tactics that slightly increase sales may lead to sky-rocketing supply chain costs (see also Figure 5). It’s the supply chain wide benefit that counts when evaluating choices. Seven-Eleven Japan, for example, increased supply chain efficiency by reducing the number of SKU’s carried by its stores from an average of 3000 items in 1995 to 2500 items in 2003 (Matuso; 2007). A well defined system of metrics overarching divisions, however, is the foundation for such holistic decision-making. Silo-metrics, in contrast, inevitably lead to silo-decisions.

- **Factor in hidden costs**

When evaluating realignment alternatives it's imperative to factor in all major costs – both obvious and hidden cost categories. When Hilti, for example, moved parts of its production to Asia, utilization rates of specialized machinery for plastic parts decreased in the original production facilities. This, in turn, made per-part capacity costs elevate. Also, splitting tasks across several locations reduced expert knowledge at some production facilities, as specialized workers could only remain at one location. Neglecting such considerations during the conceptual analysis may lead to wrong decisions.

- **Set incentives right: short versus long-term planning**

Is your agenda dominated by responding to short term pressures? What is your time horizon for supply chain planning? Suboptimal incentive systems draw managers' attention to incremental short-term supply chain improvements rather than developing a long-term supply chain strategy. In light of the capital-intensity and the long-lasting impact of many supply chain decisions, e.g. costs and life-time of production facilities, such focus leaves tremendous potential untouched. To create top-notch supply chains, firms must hence explicitly consider both short and long-term goals and redefine manager's incentives accordingly.

- **Time realignment right**

How should you time realignment? Should you favor radical implementation, when changes are implemented immediately and at once or rather a step by step implementation? Both strategies have their goods and bads. A radical strategy signals management's determination to the firm's work force and may be indispensable, if the firm is under high pressure, as it was the case with Lego. A step by step implementation, in contrast, allows exploiting natural discontinuities, such as times of new product introduction. In addition, it may mitigate budget constraints and may significantly decrease complexity and risk.

Furthermore, realignment is a major restructuring initiative and requires time and commitment. For its recent supply chain footprint review, Hilti, for example, attributed 9 months of planning and, subsequently, 2-3 months of implementation.

- **Build a powerful team**

At its core the realignment project requires a powerful team. A cross-functional team brings in diverse project perspectives and naturally facilitates cross-functional decisions. Whirlpool, for example, reports positive experiences from recruiting from sales, manufacturing, distribution and sourcing. Another driver for project success is to involve people that are later affected by project decisions. A plant manager in charge of assessing the benefits from moving his plant to a low-cost country will pursue a conservative analysis including all relevant cost drivers. In addition, he will also understand potential benefits of the project, which facilitates project implementation. Hilti and Lego, for example, have both benefited from such transparency.

To maintain a high level of motivation throughout the team despite the massive workload involved, it may prove beneficial to communicate that people's work will indeed result in actual change. Team members that believe in the goals of the project will be much more willing to dedicate extra-energy.

6 Outlook

Sustained supply chain strategy is about managing change and constant adaptation. It requires tough choices aligned and executed across the organization. An initial supply chain realignment project is thus only the starting point. The far bigger challenge is to preserve alignment in the future – despite the internal and external changes a firm constantly undergoes. During a realignment project Hilti, for example, estimated its growth rate at 3% for the years to come and got struck by surprise, when an annual growth rate of 8% later materialized. The firm quickly reacted and set up an additional production facility in South America to meet local demand.

Sustaining alignment hence entails constantly reviewing potential change drivers, assessing their impact on your firm's supply chain strategy, and acting accordingly. In essence, you have to constantly challenge your firm's supply chain strategy, which requires firm-wide efforts and stringent commitment. Yet, being ahead of change is the critical element in building an institution capable of sustaining success. Neglecting it, might put your firm's success at risk. Supply chain realignment should hence be an integral part of strategy making, informed by careful market analyses, competitor benchmarks, as well as product and technology roadmaps.

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