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# Why Finance Transformation Matters in Global Manufacturing



A Deloitte Research Global Manufacturing Study

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# Introduction

Business transformations in pursuit of performance improvements are nothing new. Despite large-scale investments in management practices, processes and technologies, however, results for most companies have been less than stellar. Our analysis of 500 of the world's largest manufacturing companies shows more than 30 percent had negative average economic margins over the last five years.<sup>1</sup> In effect they were destroying capital.

Moreover, our ongoing global benchmark research, involving more than 860 companies to date, shows that changing business drivers and the ever-increasing complexity of global operations are making business improvement through transformation even harder year over year.

How should companies respond? While there is rarely one recipe for the “secret sauce” that goes into a successful business improvement and transformation, there is a growing recognition that finance is an indispensable ingredient. Financial management holds the key to resolving some of the most intractable problems and capitalizing on the valuable opportunities facing global manufacturers today. Through a process often known as “finance transformation.”

**Finance transformation:** defined as an umbrella concept that focuses on improving performance, stewardship and control of the company by enabling chief financial officer (CFOs) and their finance organizations to have greater impact on strategy formulation and execution across the enterprise — companies have begun to realize the value of finance in transforming their business operations.<sup>2</sup>

It's about time, shareholders might say. Companies are paying a steep price for shortcomings in financial management across a range of areas:

- **Meeting investor expectations for profitable growth.** Thirty-two of the 100 largest manufacturers listed on United States stock exchanges had a negative average economic margin over the last five years.
- **Reaping the rewards of globalization.** We estimate that more than 85 percent of the world's largest and most complex manufacturers are unable to maximize the returns on their global investments.

- **Profiting from innovation.** The link is missing between expenditures on research and development (R&D) and profitability.
- **Transforming through services.** While services are driving the growth of manufacturing industries, most companies are left behind when it comes to managing and prospering from the service business.
- **Coping with structural cost.** Established manufacturers are sitting with a time bomb in their laps — the inability to manage the growing burden of structural cost.
- **Making M&A work.** Few companies have found a way to consistently create value through mergers and acquisitions.
- **Realizing returns on risk.** While globalization, outsourcing and offshoring are increasing the enterprise risk for global manufacturers, most are challenged with just measuring risk, let alone controlling and managing it. Profiting from taking risk is yet another opportunity few companies are fully prepared to take on.

On the plus side, focused efforts on improving financial management have unearthed its promise as a catalyst in resolving the problems common to global manufacturers. Finance transformation is rarely a panacea, but it does have the potential to provide the underpinnings of successful enterprise transformation and help put the company on a path to sustainable, profitable growth.

But finance transformation, to be worthy of the term, must extend well beyond the four walls of the finance function, which typically focuses on its standard role as the steward and operator of financial accounting, control and reporting for the company. The transformation must not only encompass key roles of corporate strategy and execution, but also support competitive capabilities across operational business departments such as marketing, sales, and service; supply chain; research and development (R&D); information technology (IT); and human resources.

Without finance support in driving performance in those areas, companies will face an uphill and often losing battle in transforming their business. Much as the caterpillar morphs into a butterfly, financial management is transforming from an uninspiring albeit necessary function of doing business to one of the most promising levers of enterprise transformation.

# Why Finance Transformation Matters in Global Manufacturing

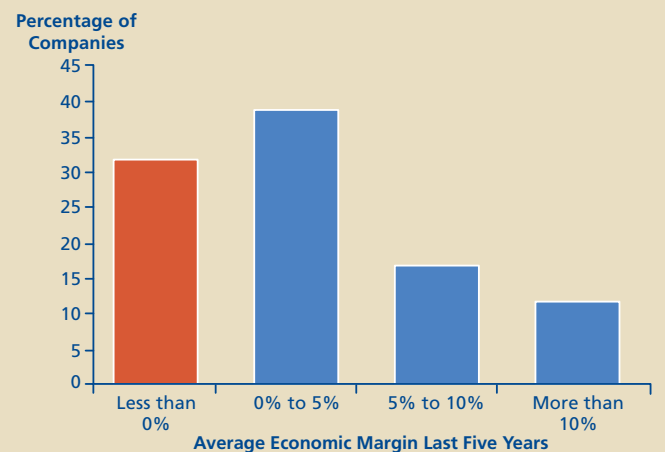
It has never been easy to manage, much less transform, manufacturing companies operating on a global scale. But one could argue that it has never been harder. And for many, it has become increasingly difficult for a number of reasons.

## Meeting investor expectations for growth and profits

In a world of round-the-clock scrutiny, capital markets are putting enormous pressure on companies to grow and increase capital returns in order to improve valuations and share prices. Making the right investments for the future is as important as improving current operations. To a great extent, investor valuations are driven by their expectations about a company's future performance. Thus, to justify the confidence of the investor community, it is of critical importance to ensure that future investments will lead to profitable growth. That is, of course, a tall order. For some leading companies such as Harley-Davidson, Dell, Johnson & Johnson, Ingersoll-Rand and Unilever, more than half the enterprise value (the market value of equity, debt and minority interests) is due to investors' expectations about the return on future investments, not past ones.<sup>3</sup> Increasing shareholder value means meeting and exceeding those expectations. This places enormous pressure on companies to find profitable investment targets — which puts finance on center stage.

Many companies fail to create any value for investors — recall the earlier statistic that nearly one-third of the 100 largest manufacturers listed on stock exchanges in the United States and Canada destroyed value over the last five years (Figure 1).<sup>4</sup> Similarly, in our global benchmark research across 860 manufacturers to date, we found that 28 percent failed to achieve goals on return on capital/assets, and 27 percent missed their goals for return to shareholders. Yet, it is reasonable to assume that none of these underperforming companies deliberately would undertake major investments that did not have a business case showing annual returns significantly higher than the cost of capital. At the end of the day, however, the returns in most cases are much lower.

**Figure 1. The Challenge of Meeting Investor Expectations**  
Of the top 100 manufacturers 32 had negative average economic margin over last five years



Notes: Data from top 100 manufacturers listed on stock exchanges in the United States and Canada; data downloaded March 2006. "Economic margin on Invested Capital" equals (Cash flow – Capital Charge including intangibles) divided by Inflation Adjusted Productive Capital.  
Source: Deloitte Research, based on data on companies from Applied Finance Group Ltd., 2006.

Core financial management challenges include identifying the key drivers that link investments across the enterprise to shareholder value and using that information to improve investment allocation.

Owens-Illinois (O-I) is the world's largest manufacturer of glass containers. A critical part of its broader "One O-I" effort involves transforming the company's finance function into a modern, global, world-class finance organization. Initially, O-I's efforts were focused on Sarbanes-Oxley compliance. The second stage — supported by lessons learned from the Sarbanes-Oxley compliance program — focused on developing the policies, standards, and operating and competency models of the new globally integrated finance organization. The third stage — and arguably the most important — focuses on how to use finance to transform the business. A key aspect is the need to align operational strategies and investments with overall drivers of business performance, such as revenue growth, operating margin and asset efficiency, and broadening

the financial goals of the firm beyond a previously single-minded focus on earnings per share (EPS) towards more urgent financial measures such as free cash flow.

While the results rarely show overnight, O-I's finance function is increasingly being perceived as a proactive leader in the company's quest for change.

## Reaping the rewards of globalization

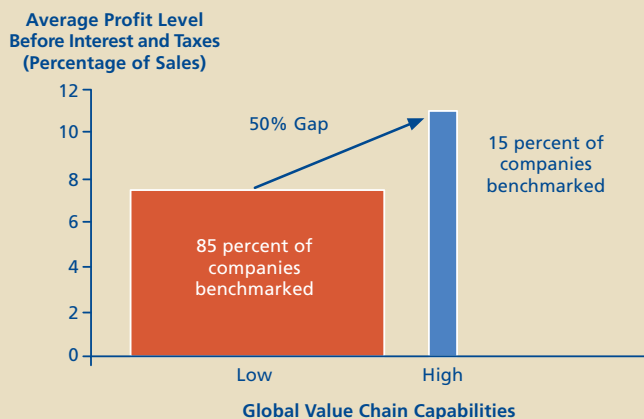
Rampant globalization is dramatically increasing the complexity of value chains spread around the world. Our ongoing global benchmark research shows that, to date, the vast majority of manufacturers benchmarked sell outside their home regions; more than half have shifted their manufacturing operations to low-cost locations; and almost two-thirds outsource pieces of manufacturing, distribution, logistics and engineering. New market entry, new product launches and new supply chains that source from lower-cost locations all add to the complexity.

Managing this complexity is a formidable challenge for even the best companies. Making sure that investment decisions are well-conceived and vetted; supply chains are properly designed and optimized; and compliance requirements for reporting, taxation and trade are properly and efficiently handled puts an enormous burden on management. Finance transformation can play a central role in alleviating this burden. By supporting management in developing better performance metrics, decision-making and information processes, finance can help provide underpinnings for more successful globalization.

For most companies, however, global value chain complexity is a shackle to improving performance. More than 85 percent of the largest global and most complex manufacturers we have studied are unable to get the real value out of their global investments. The remaining 15 percent or less of these companies possess the strongest global value chain capabilities — from customer service to manufacturing and product development — and are 50 percent more profitable on average than their global peers (Figure 2).

Despite the large potential advantages of designing supply chains and other operations from a global perspective, manufacturers are sub-optimizing the advantages by focusing on the local level of individual plants, functions or geographies.<sup>5</sup> Coordinating and optimizing operations across manufacturing locations, R&D centers, customers and suppliers on a global scale not only calls for superior technology and infrastructure, but also the right performance measures in sync with the company's global strategy. Finance can play a fundamental role in putting these foundations in place and supporting the successful globalization of the company.

**Figure 2. Getting Value from Globalization is Hard**  
More than 85 percent of largest and most complex manufacturers have insufficient capabilities for managing global value chain and low profitability



Notes: The largest and most complex companies are defined as those with a value chain complexity score higher than 20. Value chain complexity is measured as the spread of 4 main parts of the value chain (sourcing, R&D, manufacturing, and sales/marketing) parts across 13 geographies around the world. Minimum score is 1 and maximum score is 52. For more details on the definitions of global value chain complexity and capabilities, see also Deloitte Research, *Unlocking the Value of Globalization: Profiting from Continuous Optimization* (New York and London: 2005)  
Source: Deloitte Research, based on the Global Benchmark Survey

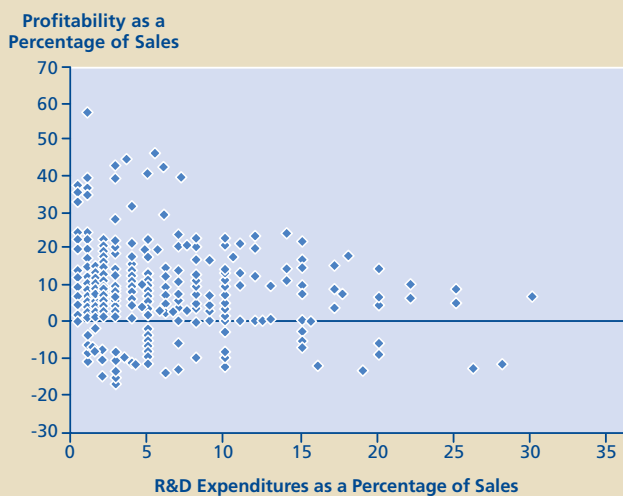
In the case of the Chinese operations of chemical giant BASF, finance played a vital role in making the marketing, sales and service organization more customer-focused. With a deep understanding of the costs and benefits of winning and serving customers, finance helped create a foundation of metrics around the notion of “customer lifetime value” and developed a sales and service approach focused on serving better the most valuable customers. Linking compensation to key financial metrics like cash flow and days sales outstanding (DSO; a measure of how fast companies are turning sales into cash) was an important aspect of making the transformation work. The result was higher revenue growth as the sales force systematically focused on higher-opportunity customers. Better service led to better customer retention, and DSO and cash flows improved as BASF China's customers became more loyal with better payment records<sup>6</sup>.

Building effective financial management processes and practices into decisions on investments in new markets, new products, new supply sources and new supply chains is crucial as companies keep expanding their global footprints. Other important factors to consider are in the domains of tax, regulation, trade and risk. For example, research across a number of companies suggests that when tax (direct and indirect) is built into the supply chain network optimization up front, the net profit impact is nearly twice as high as when tax is treated as an afterthought.<sup>7</sup>

## Profiting from innovation

“I know half the money I spend on advertising is wasted, but I can never find out which half,” John Wanamaker, a pioneering founder of his eponymous department store, allegedly said long ago.<sup>8</sup> The problem is similar with innovation spending. In all the industries we have studied through our ongoing global benchmark program — ranging from aerospace and defense (A&D), chemical and process, to automotive and industrial products—new product and service innovation rates as the top driver of growth. Yet the great majority of companies are facing huge challenges in making innovation the sure thing that they would like it to be. Our analysis across more than 860 manufacturers benchmarked around the world suggests that there is little or no correlation between R&D investments as a share of revenue and profitability (Figure 3).<sup>9</sup> While this may be a shock to some, to others it is, unfortunately, not so surprising. Many companies recognize that the level of R&D spending is not in itself sufficient to guarantee success in innovation.

**Figure 3. Finding Profits in Innovation Is Difficult**  
Where is the positive relationship between R&D spending and profitability?



Source: Deloitte Research, based on the Global Benchmark Survey

A central problem is the lack of measurement and integration of innovation across the value chain. Despite shorter product life cycles and new products generating an ever-larger share of revenues for most manufacturing companies we have studied, few companies are putting a priority on designing a supply chain to support and foster innovation over the life cycle of new products and services.

At the heart of this “innovation paradox” is the lack of solid measures around cost and profitability shared across the value chain.<sup>10</sup> Financial management can play a central role in developing a holistic set of metrics that track innovation expenses and the impact of innovation on products and services over their life cycles. But few companies are doing this well. A 2004 survey of manufacturers found that only 30 percent believe they have both strategic and financial control over their new product development and introduction (NPDI) process.<sup>11</sup> A follow-up study showed that finance plays a role in NPDI processes in only 42 percent of manufacturing companies surveyed.<sup>12</sup>

Indeed, few companies understand the real financial impact of their innovation machines. For example, to date, only a few of the executives participating in our global benchmark program say they are highly satisfied with the information available on forecast and demand plan (4 percent), product profitability (9 percent), and customer profitability (4 percent). This makes it extremely difficult for most companies to make good decisions around investments in idea generation, product development, launch, marketing, sales and service efforts, new market entry, and product life cycle management.

Often companies face difficulties in developing effective performance measures for innovation and end up using lagged, or historical, measures that are too outdated to affect positive change in a timely manner. The challenge is for companies to clearly understand how to derive performance measures that link actions to results. Finance, along with R&D, marketing, production and sourcing, can play an important role in creating a common set of innovation metrics that can be shared across the relevant decision makers. Taking a life-cycle view of innovation is essential as most sales, costs and profits are generated after the initial launch period. This includes not only product sales, but also related service and parts sales that support the product through its life cycle (see next section). Indeed, our benchmark research shows that companies with better visibility across key innovation performance metrics are better able to manage the innovation paradox and generate higher returns in terms of profitability, growth and other targets.<sup>13</sup>

To make the challenge even harder, companies need to develop financial and operational performance measures that can be used to drive both breakthrough and incremental innovation. Dow Corning, a global leader in silicon-based technology and innovation, not only has targets for new products as a share of sales, but also for new products to bring in a certain level of sales. Says Gregg Zank, chief technology officer at Dow Corning, “We have this added hurdle to keep the pipeline balance between major innovations and smaller ones. If you are not careful you can get a lot of incremental products coming along, but do they really add a lot of value? We want to make sure we have the right balance and keep an eye on the big opportunities.”<sup>14</sup>

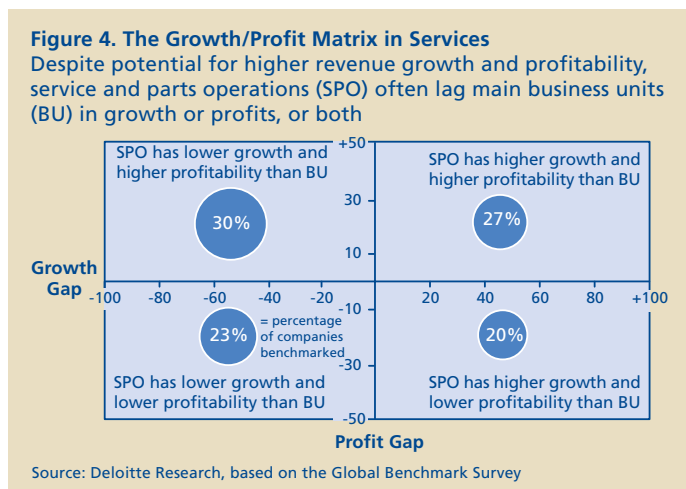
## Transforming through services

From A&D and industrial and medical equipment to consumer electronics, industries are increasingly relying on services to form a significant part of their revenues and an even bigger share of their profits. However, with services-led growth comes increasing complexity. Selling and delivering services to customers entails integrating product, installation, customer service, field service, parts, financing, warranty and repair, supply chain, information, and many other components.

Creating effective strategies and processes for delivering complex service packages is hard enough. What makes it tougher is figuring out what the real costs are — and what the prices should be — for service contracts that can range from several years to several decades. Appropriately considering the risks that multi-year service contracts entail is not for the faint of heart — it requires financial acumen that many companies have yet to acknowledge the need for and acquire.

Despite these challenges, our ongoing global service and parts management benchmark research indicates the services-led revolution of manufacturing is well underway. Among the multinational operations across more than 120 major service businesses studied, services account for an average 25 percent of revenue, and an astounding 46 percent of profits.<sup>15</sup>

But the research also indicates that many companies have yet to effectively join the service revolution. Despite the huge opportunity for services-led growth in manufacturing, more than half the companies benchmarked report services profitability lower than or at par with the main business; nearly three-quarters of the service businesses are lagging the main business in either revenue growth or profitability, or both (Figure 4).



Examining the underlying problems indicate how financial management can become a lever in transforming the service business. For example, many of the “service laggards” benchmarked lack full insight into their service operations and have yet to build a coherent and integrated strategy around their service business. Less than 20 percent of companies benchmarked say they have extensive visibility into key areas of service and parts profitability and service customer and channel profitability. Less than 10 percent say they have “high performance” around integrated global network and tax optimization capabilities.<sup>16</sup> Finance can and should play a key role in improving the visibility and capabilities in these areas.

For leading manufacturers such as Rolls-Royce, finance plays a critical role in developing and implementing service strategies. More than 53 percent of Rolls-Royce’s revenues come from services. Like many of its competitors, the jet engine and power generation equipment maker is increasingly focused on selling “power by the hour” — letting the customer pay for the hours engines are running through multi-year contracts.<sup>17</sup> As this emerging business model is developing at Rolls-Royce and elsewhere in the industry, there is a recognised need to concurrently develop financial management processes so that effective financial planning can be undertaken, profits and costs can be managed, and commercial decisions made more rapidly and consistently across the service business. This means that companies must integrate financing, products, field services, parts, information and other essential ingredients in one package and price it according to the usage, risks and returns expected over a number of years. That is a profound challenge, one that requires the utmost in financial management excellence.

## Making mergers and acquisitions work

Mergers and acquisitions (M&A) in global manufacturing reached US\$584 billion over the last year, up from US\$370 billion in 2002.<sup>18</sup> Driven by industry consolidation and the desire to access new technologies, products, markets and sources of supply, manufacturers around the world are constantly on the lookout for new M&A opportunities.

Making money in a merger, however, is hardly a sure thing. Research suggests that M&A pays for most shareholders of target firms, but that the payoff for shareholders of buyers are often less than certain.<sup>19</sup>

Overestimating an acquisition target’s worth; strategic incompatibility with the acquired business; inability to effectively integrate the merged entities: these are all typical reasons why a buyer may gain less from an M&A than expected.<sup>20</sup>

Another frequently overlooked aspect in the M&A integration process is the management of alliances. Finance clearly has a significant role to play in carefully examining the existing alliance agreements of both merging companies, analyzing the agreements' impact on the business of the merged entity, and rationalizing and consolidating the management of alliances by mapping them to the combined entity's new product and service mix.<sup>21</sup>

In all of these areas, financial management capabilities are crucial in making M&A work — from improving due diligence and valuation methods, and assessing strategic fit, to supporting the planning and integration of the acquired operations.

For Mittal Steel, acquisition targets are evaluated based on multiple factors, such as synergies in marketing; production and purchasing; profit growth potential; raw material self-sufficiency; complementarity in product and market mix; potential risk reduction through higher margins and diversification; and potential for consolidation in the industry.<sup>22</sup> This means that finance needs to collaborate closely with business management teams to understand and evaluate the possible synergies from a strategic and operational perspective and their financial impact. As part of the Arcelor-Mittal integration efforts, about 35 teams of managers from the two companies have started working together in areas like marketing, research and development, and purchasing to gather the best ideas from both entities. The teams are under pressure to deliver: "We can't waste time, we have to get results immediately," said Mr. Mittal, pointing to the promise he made to investors that, by uniting the two businesses, he would achieve synergies of at least US\$1 billion a year by 2009.<sup>23</sup>

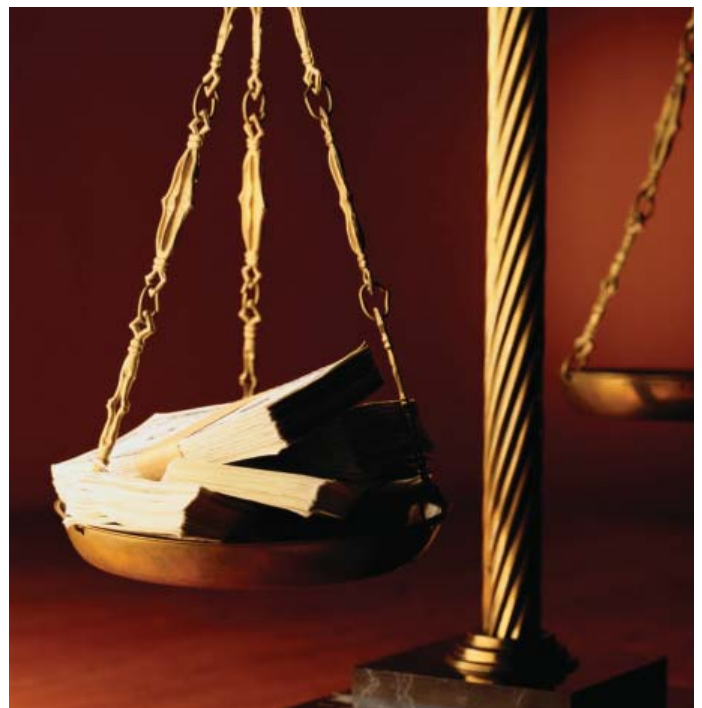
## Coping with structural cost

Structural costs are like a ticking time bomb to many established companies. These costs are in essence the accumulated results of past internal decisions and external conditions: investments in plants, equipment and distribution networks; agreements on wages; mandated and voluntary health benefits and pensions expenses; direct (corporate) and indirect tax (sales and value-added tax, tariffs and duties); energy costs; regulatory compliance costs; litigation and tort costs; and pollution abatement costs, among others.

The problem of structural costs is severe in many mature markets. By one analysis, the non-production structural costs of U.S. manufacturing companies increased by 42 percent over the last three years, making them 32 percent greater than similar costs faced by non-U.S. trading partners.<sup>24</sup> In comparison, over the past decade, manufacturing prices in the United States have increased by only 4 percent. This makes it very difficult — if not impossible — for manufacturers to pass on higher costs to customers through higher prices.<sup>25</sup>

Often, new competitors emerge with lower structural costs, posing a real threat to the survival of developed-market incumbents. Yet many companies from emerging markets face this problem, too, as they grow and globalize. TAL Group, based in Hong Kong and founded more than 60 years ago, is a global leader in garment manufacturing and a supplier to many of the world's leading brands. Yet because the company has focused on developing more advanced products and building higher quality into its products and processes, it has in effect created a higher cost structure (in high-skill people, tangible and intangible assets, and infrastructure) than many of its low-cost competitors. Typically based in low-cost locations such as mainland China, these new companies focus almost exclusively on delivering low-cost products. To remain competitive, TAL Group is intensely focused on managing overhead cost and showcasing the additional value it can create for customers.<sup>26</sup> Efforts include better and faster joint product development with customers, and global synchronization of the supply chain to ensure optimal inventory management and availability on retail shelves around the world.<sup>27</sup>

Avoiding — or escaping — the trap of structural costs can seem impossible for mature companies in long-established industries and markets. Finance transformation, however, can help these companies consistently make better, more sustainable decisions across the enterprise. The transformation includes taking a more holistic view of the enterprise (including business, regulatory and tax issues), weighing financial and operational decisions early before major investments are committed in the wrong places, and developing processes for continuously optimizing the business.<sup>28</sup>



## Realizing returns on risk

The increasing complexity of global value chains is making it harder for manufacturers to manage risk.<sup>29</sup> New market entries, new product introductions, new sources of supply, far-flung supply chains, and myriad complex physical, information and financial flows around the world make integrated risk management seem elusive.

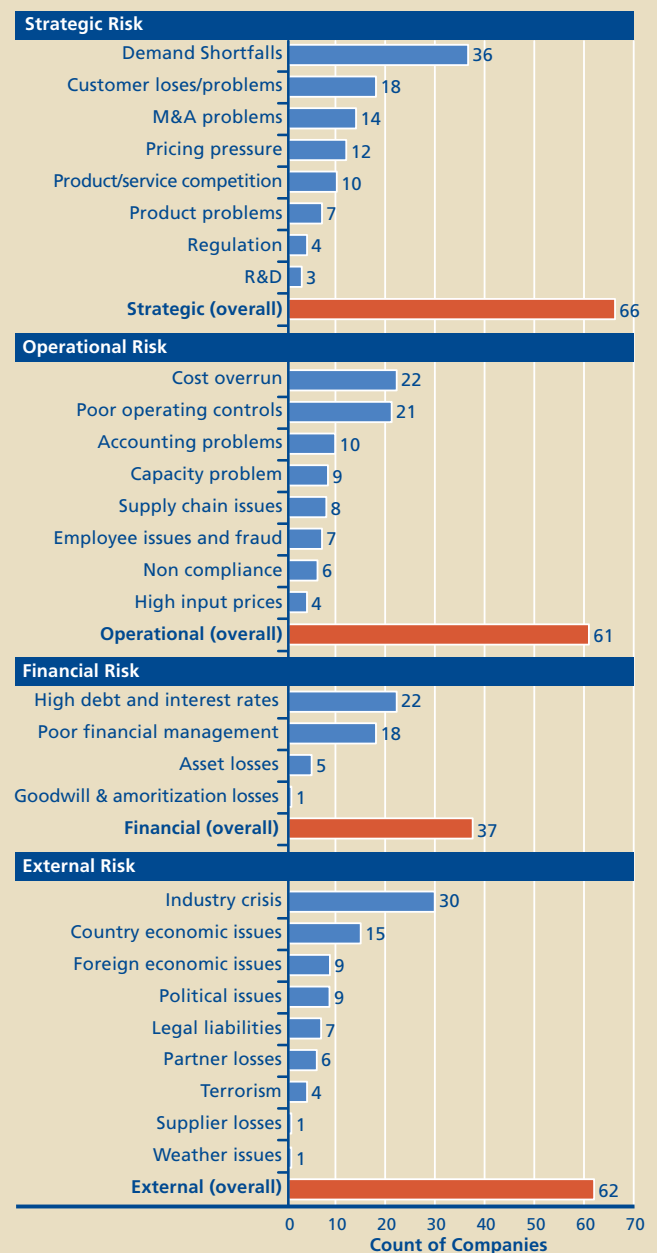
Stung by currency swings, trade restrictions, changing regulations, disrupted supply chains and increasing customer demands for secure supply, companies are looking for new ways to manage and control risk. Exploiting risk would be even better, although few are able to do that in an integrated fashion.

The challenge and cost of managing risk across a complex global manufacturing company can seem insurmountable. Yet, the costs of doing nothing may be even greater. A research study across Global 1000 companies over a decade found that over half of the companies experienced a drop of 20 percent or more in share price that lasted for at least a one-month period (relative to the Morgan Stanley Capital International World Index) because of one or more risk events, ranging from strategic, operational and financial risks to external (for example, political and economic) risks (Figure 5)<sup>30</sup> Many of the companies took months or even years to recover. Some never did.

Through better financial and risk management processes, combined with financial and operational hedging tools, a company can improve risk mitigation and hedging techniques to make better decisions. This is becoming increasingly important as companies assume greater complexity through internal expansion and external networks.

Indeed, going beyond merely avoiding risk to exploiting it through strategic risk management can provide the underpinning for new strategies and better investments, as shown by Apple.<sup>31</sup> When Apple launched the iPod Nano MP3 player, it secured the supply of flash memory through a forward-buying contract worth more than US\$1 billion to lock in adequate flash memory capacity. Not only did it hedge the supply risk for a potentially hot product, by locking up a significant part of global flash memory capacity, it also constrained competitors from ramping up production of competing products.<sup>32</sup>

**Figure 5. The Complexity of Risk Management**  
Contributing causes to the one hundred largest value drops among the Global 1000 – an illustration of the frequency of different types of risks



Notes: Analysis based on the 100 companies among the largest 1000 international companies that experienced the greatest declines in share price in a one-month period relative to MSCI. The numbers do not total to 100 since companies experienced more than one type of risk. Four companies were omitted from the top 100 list for this analysis because of the lack of reliable information.  
Source: Deloitte Research, *Disarming the Value Killers* (Boston, MA: 2005).

# Conclusion: Rethinking the Role of Finance Across the Enterprise

Disappointing shareholder value creation; unprofitable innovation and acquisitions; structural cost traps: the challenges for global manufacturers in creating and sustaining superior performance are daunting.

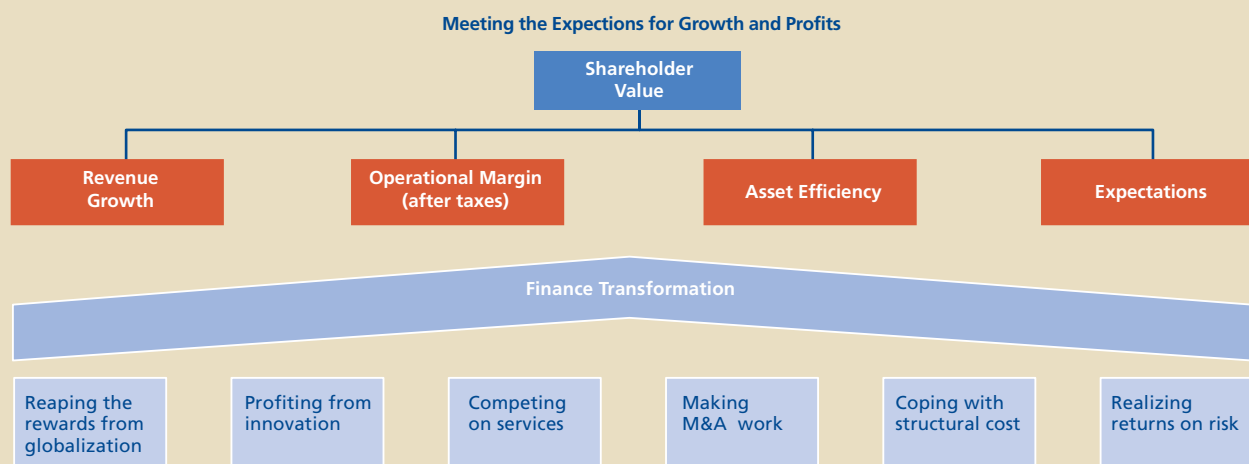
Yet, there is a growing recognition that the transformation of finance, combined with greatly improved systems and processes for managing information, provide a real opportunity for improving strategies and operations and driving business performance (Figure 6).

While financial management is widely regarded as a means to help drive enterprise performance, it has turned out to be easier to applaud than to implement. By some accounts, the focus of finance over the last five years has often been more about control and compliance (Sarbanes-Oxley legislation, for example) than about enabling and steering business strategy and performance. As a result, most financial transformation efforts have often been confined primarily to the transactional and compliance processes, such as order-to-cash and procure-to-pay processes.

But this is starting to change. Research indicates that increasingly financial management in leading companies is going beyond its traditional roles of steward of the company and operator of the finance function. Gradually more companies are starting to leverage finance as a strategist and catalyst for driving enterprise performance.<sup>33</sup> But even for the best companies, a number of obstacles stand in the way of enabling finance to become a true driver of enterprise transformation and performance.

As our global benchmark research shows, global value chain complexity makes transformation through finance even more difficult. New markets, new products and new sources of supply around the world mean exponentially growing complexity in managing the pieces and optimizing investments.<sup>34</sup>

**Figure 6. The Missing Links**  
The role of finance transformation in global manufacturing



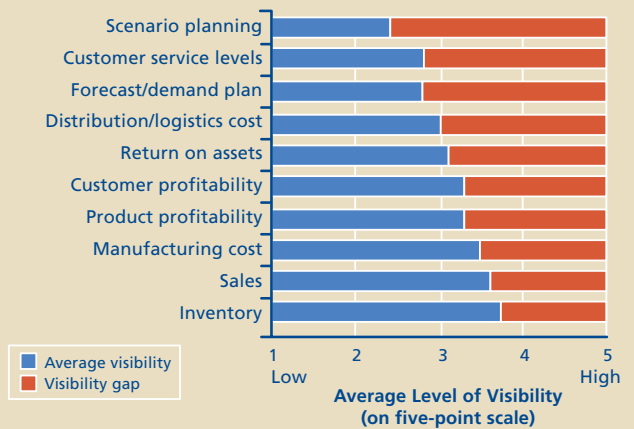
Source: Deloitte Research

At the strategic and operational levels, companies lack insight into how and where finance transformation can drive business performance, rather than just recording it. Our global benchmark research shows that most companies have only limited insight into key metrics of business performance, such as product and manufacturing cost, customer and channel profitability, and business scenarios (Figure 7).

Indeed, there is a fundamental role for finance in helping to identify key metrics, establishing a common framework and language for business performance, and making sure they are shared across the enterprise. A common language for business performance creates a foundation for monitoring, managing and optimizing operations, and for developing and checking corporate and business strategy.<sup>35</sup> Leading companies are making financial management more central to developing and executing their corporate and business strategies, underlining the growing importance of finance for driving business performance in global manufacturing.



**Figure 7. Finding the Missing Links**  
Strategic, operational, and financial visibility across the global value chain a challenge for most manufacturing companies



Note: Visibility is measured as the average level of satisfaction with information visibility in each area, based on a 5 point scale where 1 = very dissatisfied 3 = neutral, and 5 = highly satisfied.  
Source: Deloitte Research, based on the Global Benchmark Survey

## Endnotes

- <sup>1</sup> “Economic Margin on Invested Capital” equals (Cash Flow minus Capital Charge including Intangibles) divided by (Inflation-Adjusted Productive Capital). Based on an analysis of the largest 500 manufacturing companies listed on stock exchanges in the United States and Canada. For more details on the Economic Margin, see Daniel J. Obrycki and Rafael Resendes, “Economic Margin: The Link between Eva and CFROI,” The Applied Finance Group, Ltd. (<http://www.economicmargin.com/PDF/EMwhitepaper.pdf>). See also analysis in Deloitte Research, *Global Manufacturing 100* (New York: 2002), which indicates that of the world’s 1,000 largest manufacturing companies, more than half of them destroy shareholder value.
- <sup>2</sup> See also CFO Research Services and Deloitte Consulting, *Different Paths to One Truth: Finance Brings Value Discipline to Strategy and Execution* (Boston, MA: 2006).
- <sup>3</sup> For an explanation, see Deloitte Research, *Performance Amid Uncertainty in Global Manufacturing: Competing Today and Positioning for Tomorrow* (New York: 2002).
- <sup>4</sup> “Economic Margin on Invested Capital” equals (Cash Flow minus Capital Charge including Intangibles) divided by Inflation-Adjusted Productive Capital. For more details on the Economic Margin, see Daniel J. Obrycki and Rafael Resendes, “Economic Margin: The Link between Eva and CFROI.” The Applied Finance Group, Ltd. (<http://www.economicmargin.com/PDF/EMwhitepaper.pdf>).
- <sup>5</sup> See Deloitte Research, *Unlocking the Value of Globalization: Profiting from Continuous Optimization* (New York and London: 2005).
- <sup>6</sup> See Simon Littlewood, “Lean, Mean, Growing Machine,” *CFO Asia*, November 2003.
- <sup>7</sup> See Deloitte Research, *Unlocking the Value of Globalization: Profiting from Continuous Optimization* (New York and London: 2005).
- <sup>8</sup> See Ralph Keyes, *The Quote Verifier: Who Said What, Where, and When* (New York: St. Martin’s Griffin, 2006).
- <sup>9</sup> In this analysis, we looked at the simple relationship between R&D expenditures as a percentage of revenue, and profitability measured as earnings before interest and taxes as a percentage of revenue. As figure 3 indicates, there is no apparent correlation between these two variables.
- <sup>10</sup> For more on the “innovation paradox,” see Deloitte Research, *Mastering Innovation: Exploiting Ideas for Profitable Growth* (New York: 2004).
- <sup>11</sup> Strategic control is defined here as the ability to reach time, margin and market share goals. Financial control is defined as the ability to stay within budget and assess resource requests systematically. See Kevin O’Marah, “Design is the Sizzle, PLM is the Steak,” AMR Research Alert on Product Lifecycle Management, January 7, 2004.
- <sup>12</sup> Based on Kevin O’Marah, *Trends in New Product Development and Introduction Processes*, AMR Research, 2004. Manufacturing industries included in the calculation: high-tech (including semiconductor), consumer products, pharmaceuticals, automotive, A&D, chemicals, oil and gas, and general manufacturing.
- <sup>13</sup> For example, see Deloitte Research, *Mastering Innovation* (2004); also Deloitte Research, *The Service Revolution in Global Manufacturing Industries* (New York: 2006).
- <sup>14</sup> See “Innovating Innovation: Dow Corning’s Head of Vision Takes a Holistic View of Innovation—and It Works,” *ICIS Chemical Business Americas*, October 16-22, 2006.
- <sup>15</sup> See Deloitte Research, *The Service Revolution in Global Manufacturing Industries* (New York: 2006).
- <sup>16</sup> Ibid.
- <sup>17</sup> Ibid.
- <sup>18</sup> Based on analysis of data from Thomson Financials M&A database, 2006. Manufacturing industries included are those defined by the 2002 North American Industry Classification System.
- <sup>19</sup> Research suggests that the average benchmark-adjusted return to corporate investment in M&A is close to zero, with a wide variation indicating that many buyers in M&A transactions should be disappointed. See Robert F. Brunner, *Deals from Hell* (New York: John Wiley & Sons, 2005).
- <sup>20</sup> For a discussion, see Robert G. Eccles, Kersten I. Lanes and Thomas C. Wilson, “Are You Paying Too Much for That Acquisition?” *Harvard Business Review*, July-August 1999.
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- <sup>23</sup> See Marsh, “A Feel for Steel,” *Financial Times*, 2006. See also Stanley Reed, “Mittal & Son: An Inside Look at the Dynasty That Dominates Steel,” *BusinessWeek*, April 16, 2007.
- <sup>24</sup> See Jeremy A. Leonard, *The Escalating Cost Crisis—An Update on Structural Cost Pressures Facing U.S. Manufacturers*, Manufacturers Alliance/MAPI, National Association of Manufacturers and The Manufacturing Institute, 2006. “Non-production structural cost” included corporate tax, employee health and pension benefits, regulatory compliance costs, tort costs, natural gas, and pollution abatement costs.
- <sup>25</sup> See Leonard, *The Escalating Cost Crisis*, 2006.
- <sup>26</sup> Based on interviews with Dr. Harry Lee, CEO, TAL Group.
- <sup>27</sup> See also Deloitte Research, *The Power of Synchronization: The Case of TAL Apparel Group* (New York: 2005).
- <sup>28</sup> See also Deloitte Research, *Unlocking the Value of Globalization: Profiting from Continuous Optimization* (London and New York: 2005).
- <sup>29</sup> For more on this “risk paradox,” see Deloitte Research, *Mastering Complexity in Global Manufacturing: Powering Profits and Growth through Value Chain Synchronization* (New York: 2003); and Deloitte Research, *The Challenge of Complexity in Global Manufacturing: Critical Trends in Supply Chain Management* (New York and London: 2003).
- <sup>30</sup> See Deloitte Research, *Disarming the Value Killers: A Risk Management Study* (New York: 2005).
- <sup>31</sup> Mark Hillman, “On the Front Lines of Risk Management: Case Studies from the Stanford Supply Chain Forum,” *AMR Research*, January 2007.
- <sup>32</sup> Based on a presentation by Eunice Lee, Senior Business Program Manager, Apple, at the Deloitte Research-Stanford Global Supply Chain Management Forum roundtable on enterprise risk management, “Proactive Supply Chain Risk Management”, November 14, 2006. See also Hillman, “On the Front Lines of Risk Management”, *AMR Research*, 2007.
- <sup>33</sup> See Deloitte Consulting and CFO Research Services, *Different Paths to One Truth: Finance Brings Value Discipline to Strategy Execution* (Boston, MA: CFO Publishing Corp., 2006).
- <sup>34</sup> See also Deloitte Research, *Mastering Complexity in Global Manufacturing* (2003).
- <sup>35</sup> A recent survey of 200 companies shows that 31 percent of respondents indicate that there was no or only some alignment of strategy with processes and systems. Also, only 30 percent of respondents stated that project approval is based on a clear understanding of the project’s value-creating potential; only 23 percent indicate complete alignment of projects with strategy. For more details, see Deloitte Consulting and the Economist Intelligence Unit, *Adopting the Value Habit (And Unleashing More Value for Your Stakeholders)* (New York: 2006).

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