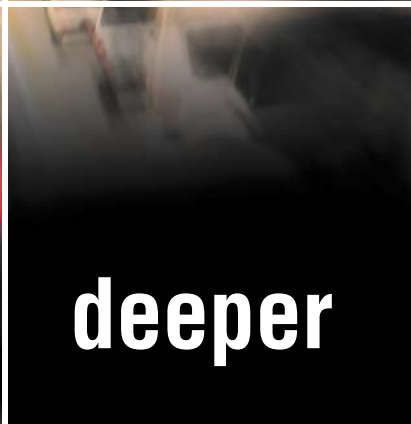
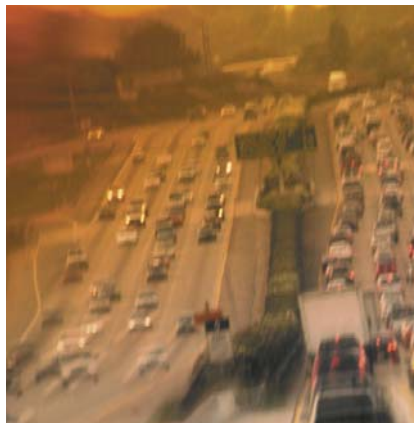


## Pull away from the pack

*The key to transformational growth in the electronics industry*



**deeper**

*An IBM Institute for Business Value executive brief*

The IBM Institute for Business Value develops fact-based strategic insights for senior business executives around critical industry-specific and cross-industry issues. This executive brief is based on an in-depth study created by the IBM Institute for Business Value. This research is a part of an ongoing commitment by IBM Business Consulting Services to provide analysis and viewpoints that help companies realize business value. You may contact the authors or send an e-mail to [iibv@us.ibm.com](mailto:iibv@us.ibm.com) for more information.

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## Introduction

It may seem like the worst is over for the electronics industry. Many companies have had a chance to catch their breath and catch up with quickly changing market forces. But how well are electronics companies positioned to tap into future opportunities and beat market threats as they arise?

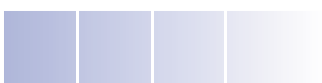
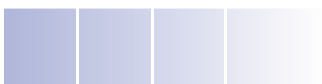
A recent IBM Institute for Business Value survey shows that, in general, the majority of electronics companies are not well positioned to adapt to new opportunities and threats that arise through rapid market changes. However, there are companies that shine in a few areas, outperforming the competition and already seeing bottom-line results. IBM researchers identified these areas of success and put them into perspective for electronics companies that want to be prepared for both the best and worst of times – before they happen.

### *Say good-bye to business as usual*

The past few years have been some of the toughest in recent memory for the electronics industry. When the technology bubble burst, it left behind an intolerant and unforgiving market. Survivors of the bust have restructured – some more successfully than others – and are making long-term capital investments very cautiously, if at all. As the economy recovers, companies that have made severe cuts will need to make difficult decisions to position themselves for growth.

Despite recent upturns in the industry, electronics companies will continue to face both unpredictable demand and unrelenting competition. Profit margins are still tight but can also vary greatly; though the industry average is only three percent, the range for the major players is between -16 and +21 percent.<sup>1</sup> To pull away from the pack, electronics companies will have to think in broader terms than basic survival with slim margins, and develop leading-edge practices that help them maneuver quickly and react dynamically to future booms and busts in the electronics market.

In a recent study, IBM Institute for Business Value researchers interviewed 35 electronics executives from 20 major electronic firms and gathered insights from numerous discussions with clients and from financial analysis of various companies. They then assessed each company's performance to identify what made some firms industry front-runners and others followers. In what was possibly the most important



survey finding, researchers found that no major company scored perfectly in their ability to both tap into opportunities afforded by an upbeat economy and remain prepared for unforeseen market challenges and threats. Even though the gap between the companies that scored best and worst in the assessment was, on average, a significant 11 percentage points in earnings before interest and taxes (EBIT), the front-runners still have a good distance to travel to reach the leading edge.

### ***Front-runners: A case for business flexibility***

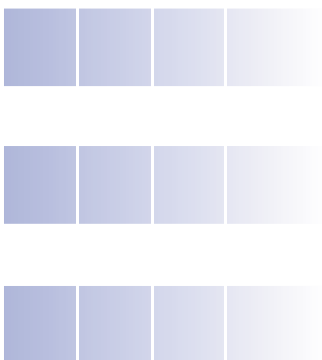
In an increasingly competitive industry, only companies that are flexible enough to respond quickly to business opportunities and threats will succeed. The following scenario details the transformation of one company that turned a threatening business environment into a positive marketplace position, realizing significant bottom-line results.

#### **The Lam Research Corporation story**

The Extreme volatility in demand for semiconductors leads to highly cyclical demand for Lam's products among semiconductor manufacturers. As a result of this cyclical demand, Lam's management had expended much of its valuable time on the ramping up and ratcheting down of its production, staffing and administrative resources to either cut costs (in a downturn) or meet demand (in an upturn). This drag on management focus made it harder for them to guide the company through a demanding competitive environment, marked by increasingly shorter technology cycles. Lam's industry is also marked by increased consolidation driven by the consolidation of the overall semiconductor manufacturing market. This had led to increased competitive intensity in Lam's market, and the resulting strategic importance of cost control.

The As a result of this challenging environment, Lam has made some significant changes. But how did these changes affect the bottom line? Financial benefits came from a number of areas within the business:

- Lam was able to offset a 60 percent decline in revenue with a 42 percent reduction in operations costs and a 52 percent reduction in property and equipment spending, making it one of the few companies to post a profit in the last industry downturn.
- In its core etch segment, Lam was able to increase market share by focusing more energy on customer-centric issues and new product development.
- In the future, Lam expects its new outsourcing business model to enable both increased levels of cash generation and to improve its retained earnings performance over the course of an entire cycle.



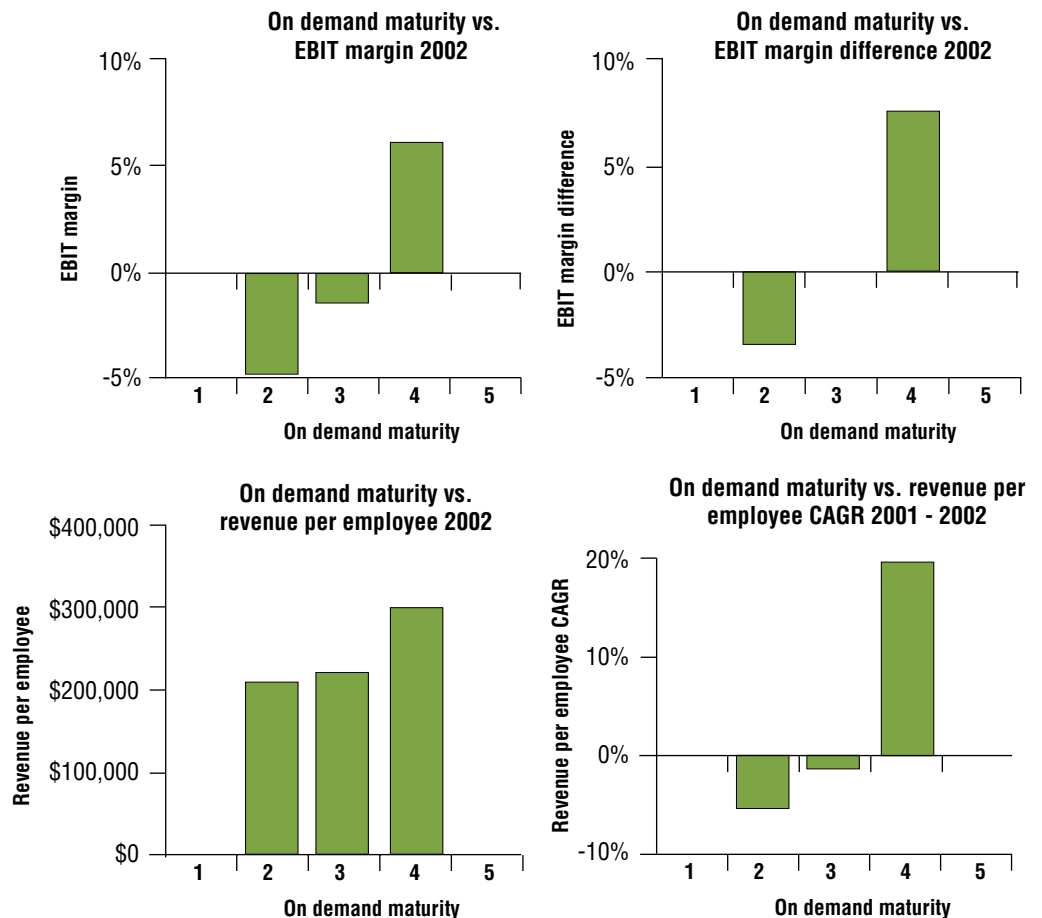
## Focused, responsive, variable, resilient: Ready for the future

Electronics companies are fighting increased market volatility on one hand, and stringent requirements for earnings stability on the other. While most companies have already begun to assess ways in which they can become more flexible – grabbing opportunities and preparing for the unknown – they’ll have to go much farther to navigate this challenging era safely, and profitably.

IBM researchers found that the financial front-runners in the survey had four key attributes in common: they were more *focused, responsive, variable* and *resilient* than their less successful competitors. IBM calls a company with a fully mature corporate strategy, business processes and infrastructure aligned to these key attributes an "on demand" business (see Figure 1). The following sections detail the study findings, as well as leading practices that will be imperative for electronics companies to implement in the future.

Figure 1. Companies that operate more on demand enjoy better financial performance.

An on demand business is an enterprise whose business processes – integrated end-to-end across the company and with key partners, suppliers and customers – can respond with speed to any customer demand, market opportunity or external threat.

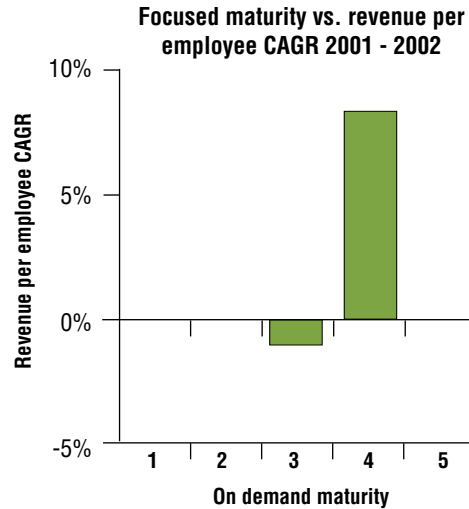


Source: "On demand and business value in the electronics industry." IBM Institute for Business Value, October 2003.

## Focus on core competencies while partners manage non-core business activities

A *focused* company concentrates on core competencies, tasks and assets that drive productivity, innovation and return. A clearly defined strategy and innovative products are required to achieve focus. The research showed that focused companies enjoyed better revenue growth than less focused companies (see Figure 2).

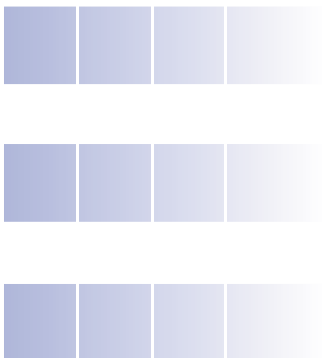
**Figure 2. More focused companies benefited from greater revenue per employee growth.**



Source: "On demand and business value in the electronics industry." IBM Institute for Business Value, October 2003.

Truly focused companies link strategy to execution. In unpredictable and volatile markets this requires relevant, timely and accurate measurements of key financial performance indicators and business processes that are designed to respond as required without failure. For example, a focused company is able to constantly measure the value-add of business processes and compare that knowledge to business strategy to periodically decide if particular processes are still core competencies. Such a focused company can reevaluate decisions and adapt their strategy to changing market conditions, and bring new products to evolving and emerging markets faster.

As enterprises get bigger, and products and markets become more complex, maintaining focus may require collaboration across an ecosystem of business partners. Each partner focuses on what they do best and shares capabilities with others to the advantage of the entire business ecosystem. Some companies surveyed have already established such partnerships to help maintain revenue growth. This can have profound implications for the business model, which becomes based on a portfolio of interrelated components – some of which are owned by the company, and some of which are shared with or outsourced to partners.



### **Focusing on operational excellence**

A specialized capital equipment manufacturer that participated in the survey focuses on operational excellence combined with superior technical leadership. Though the company maintained research and development targets during the downturn, some highly technical business components are sourced from partners. The company works closely with them to make sure that the right products are developed and delivered on time in order to meet the company's strategy. This company is a market leader in its niche, but must maintain focus to grow revenue in a highly competitive market that requires increasing levels of capital investment.

The company also works with suppliers to improve speed to market. It has long-term supplier agreements that include the availability of firm orders in four weeks, with 100 percent commitment to take delivery within one year. Trade-off orders must be called off within two years, or the company is charged a penalty. Agreements like these help both the supplier and the manufacturer to focus on delivering to end-user needs.

The surveyed companies that scored high in their ability to focus also scored high in strategy and innovation processes. These companies had a more clearly defined and communicated strategy to drive revenue performance. As one Chief Procurement Officer said "R&D cost is responsible for more than 20 percent of total sales. So, R&D is considered as core, with the same [absolute] investment level in downsizing times!"

### **Communicating clearly and concisely**

A surveyed semiconductor manufacturer has a clear one-page strategy document used by all site managers in communications, which includes a balanced business scorecard that links to the appraisal process. In addition, a biweekly letter from the CEO is sent to all employees via e-mail. Although strategy is clearly communicated, the CEO has said that the company could benefit from the use of strategic partners so that the company can focus more intently on what it does best.

### **Anticipate and respond – before others can**

A *responsive* company anticipates customer needs, business changes and unpredictable events and responds across an extended and global enterprise (e.g., internal divisions and trading partners) to scale to market opportunities and increase revenue growth. The IBM study found that companies who scored high in responsiveness also scored high in customer and financial management processes (see Figure 3). These companies do a better job of sensing what their customers demand and how customers will react to products, services and solutions. They use that knowledge to meet demand within financial constraints.

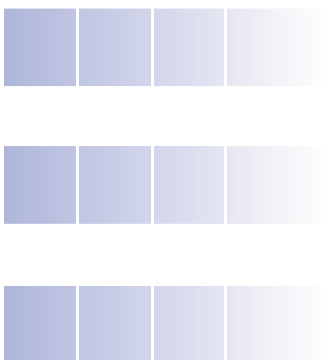
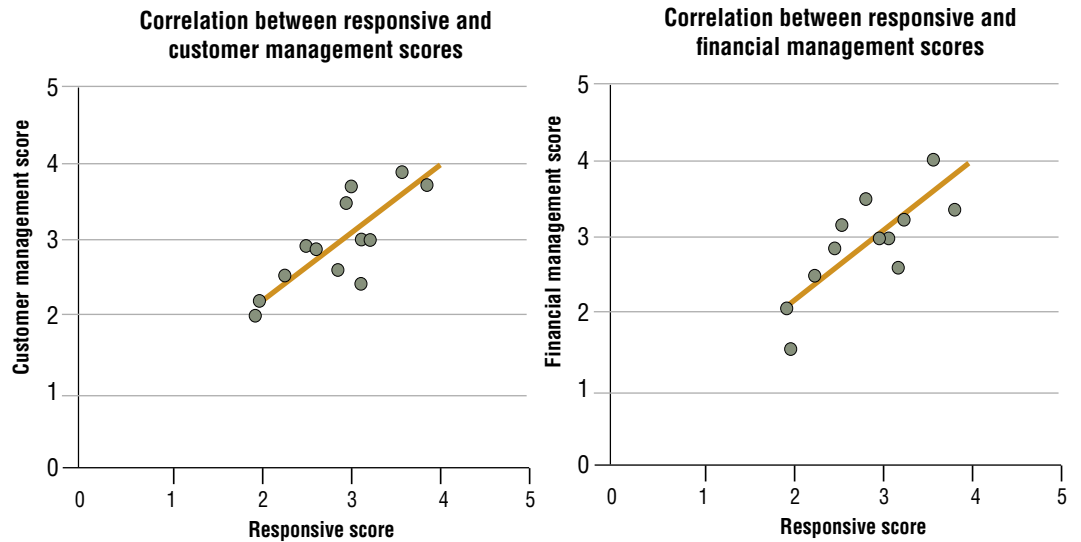


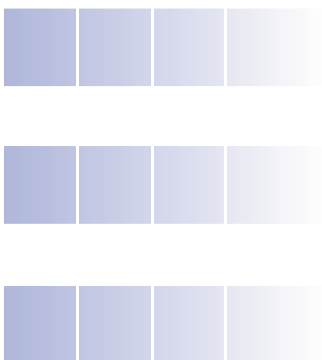
Figure 3. Responsive companies tend to excel at customer and financial management.



Source: "On demand and business value in the electronics industry." IBM Institute for Business Value, October 2003.

However, market fluctuations can make knowing the right numbers to optimize response extremely difficult. Some companies have already successfully adopted methods from retail, including collaboration with distributors and sharing tools and information to better sense changing customer requirements. They are responding with sophisticated marketing programs aimed at shaping customer demand, with the goal of operating at full capacity. One surveyed contract manufacturer is able to accomplish this through what that company calls an "adaptive governance system."

But for several of the telecommunications and consumer electronics companies that were surveyed, customer demand and buying behavior is so volatile that forecast accuracy is below 50 percent.<sup>2</sup> Statistically, a roll of the dice would produce better results. Today, these companies score very low on responsiveness, and would benefit from creating end to end processes that link supply management to demand management, and using promotions to increase demand.



### **Providing local responsiveness through a common governance model**

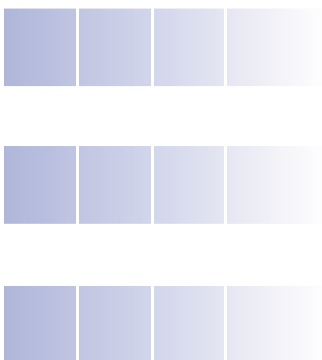
An industrial electronics manufacturer that was surveyed needs to be responsive to a diverse set of customers through a diverse set of businesses. To do this, they established a governance model, which allows the businesses to operate with relative freedom in their own markets, but with consistency across the corporation. This is particularly important where technology and business fuse, as applications must be implemented rapidly to support new business opportunities in changing markets. Rather than spend time and resources on extensive in-house application development, the company has developed core competencies in implementing and using new applications. Interfaces between application packages and legacy systems are generalized as much as possible. Rapid implementation is critical to help ensure that the businesses continue to be responsive to customers. The approach is dependent upon a flexible infrastructure, is governed by a group of Chief Technology Officers (CTOs) – one for each business – and led by the Corporate CTO.

As a result, any executive across the corporation can view company performance against critical customer and financial performance indicators. This not only allows the company to respond fast to customers and markets, but also to know when to vary operational costs and make investment decisions.

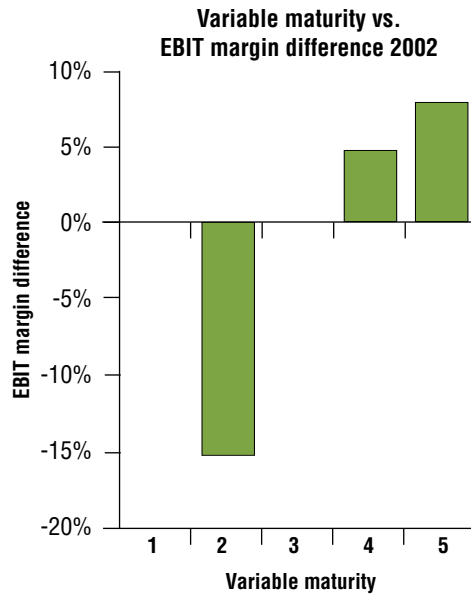
The company stays responsive by using multiple suppliers to prevent stock outages. Contracts with trusted suppliers are negotiated at very competitive rates, and suppliers are managed to very strict service level agreements. But as demand and prices fluctuate, parts with long lead times can cost the company money. Despite being ahead of the pack in financial performance, the company needs to achieve even more variability in the supply chain in order to truly operate on demand.

### **Adapt capacity and cost to volatility at the right time**

A *variable* company is able to adapt all business process capacity and cost structures to respond at the right time to volatility, and to reduce risk while doing business at higher levels of productivity. Although some companies in the survey were able to sense changes in the market, they lacked the capability to scale up and scale down operations. For example, a company that is responsive but not variable might run joint marketing programs with distributors to shape customer demand at the point of sale, but then be unable to deliver goods in sufficient quantity as demand increases. In volatile markets, truly variable companies optimize capital deployment to deliver more consistent profits (see Figure 4).



**Figure 4. More variable companies in the study maintained profitability, while less variable companies suffered losses.**



Source: "On demand and business value in the electronics industry." IBM Institute for Business Value, October 2003.

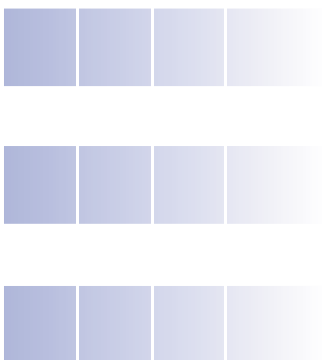
Variable companies can adjust capacity and costs for all resources including property, plant, materials, labor, IT, marketing and distribution in such a way that they are aligned with revenue from quarter to quarter. Even with increased variability in human capital management, a lack of variability in other business areas can leave companies vulnerable. Surveyed companies' strategies to become more variable appeared to depend on industry segment. For example, in capital intensive industries, a decision on where to site a factory is crucial: placing it near key customers or suppliers decreases logistical risk and costs and can better a company's local political standing. Alternatively, a factory may be sited in a more

remote and low-cost labor area, reducing costs overall despite increased distribution costs. The impact of decisions like these must be weighed carefully and embedded into the overall strategy for variability.

#### Positioning factories so that production can scale to equal demand

One surveyed electronics manufacturing services provider maintains a large number of plants in order to cluster them in alignment to their corporate strategy – siting plants near customers, suppliers or low cost labor pools to optimize profits across a range of market conditions. This allows the company to be better prepared to scale up rapidly with increased demand while maintaining profitability when demand falls.

The company also trains their employees to be flexible. All critical functions are performed in-house. Flexibility and quick response are extolled from the executive level down and are mandated through stretch targets. The company achieves flexibility locally with temporary resources, and reallocates priority orders depending on capacity worldwide. They do not plan a buffer of employees but rather move the work to where they have capacity – a plan they consider to be less risky than using a buffer. However, in some situations, reallocation can take three to six months to have an effect (due to retooling and training), and therefore constrains variability.



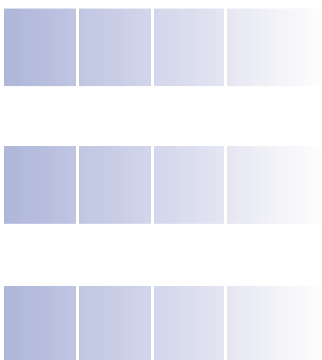
IT support for business processes must be as variable as the business processes themselves. In most companies, internal IT departments can be considered a core competency only for very few functions – so most services could easily be sourced externally. Many companies that participated in the survey outsource IT in a predefined manner with long-term contracts (five years or more) to free up the fixed cost baseline and enhance variability. This is a way to begin to rid themselves of "the big black box" of IT infrastructure and operations. But real excellence can only be achieved when the variability of IT, the business processes and the organization are in sync.

#### **Making fixed expenses variable**

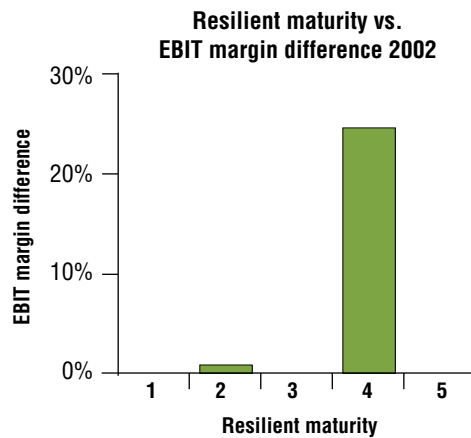
A client that manufactures medical equipment decided it was in the business of creating new technology and growing through acquisition, not maintaining legacy systems. It outsourced hosting and maintenance of all legacy applications and IT infrastructure. As a result, the company simplified and standardized IT processes. Now, IT is an expense on the income statement, not a capital expense. With variable contracts, the company pays a base fee for services and a variable rate depending on usage. This variable IT rate is adjusted on a monthly basis, so that when the company purchases or divests, it pays for only what it needs.

#### **Maintain continuous operations**

A *resilient* company is prepared for changes and threats – be they technological, economic or political – and operates consistently with the required capacity, privacy and security features. Companies that scored well in resilience were able to achieve higher profits – front-runners had over 20 percentage points more EBIT than companies that aren't as prepared for unforeseen market challenges<sup>3</sup> (see Figure 5). As one surveyed CEO put it: "You react and make decisions before the floor falls out on you. Protect the profit through a variety of actions – including budget planning with insurance built in."



**Figure 5. More resilient companies were also more profitable.**



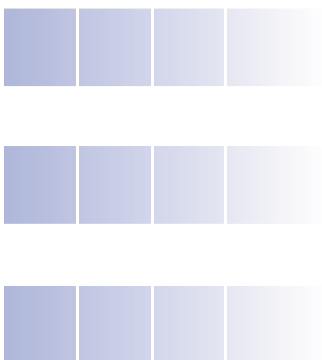
Source: "On demand and business value in the electronics industry." IBM Institute for Business Value, October 2003.

Resilient companies institutionalize planning for the unexpected, to prepare for any possible scenario. They see financial benefits from reduced risk and improved return. Some companies learn the hard way. One semiconductor company suffered a major loss of production capacity through a natural disaster. In such circumstances, customers go elsewhere or – in a single source situation where no alternative supplier is available – might even go out of business. Potential lost sales usually justify investment in a resilient business infrastructure.

### Budgeting for the unforeseen

An industrial electronics manufacturer that participated in the survey utilizes corporatwide management processes and financial controls to help ensure that the business can react quickly. Even though financial management is decentralized, all the divisions comply with the central governance directions. The business planning process requires managers to create a contingency budget; when unforeseen challenges occur, the "headroom" in the budget enables managers to take action and avoid trouble, or choose not to act and still hit their targets. Risk is spread with decentralized operations across 60 divisions. In addition, all engineering and manufacturing is based in Asia to reduce costs.

High scores in resilience also correlated well with IT management process capabilities for companies in the study. The IT infrastructure of more resilient companies adapts easily to business needs and supports on demand operations. It is also designed to run continuously without failures severe enough to negatively impact the business. The head of application management for one company was adamant about this point, "IT applications are considered mission critical. So we can't accept a business discontinuity, ever. Therefore we are open 24/7. To minimize downtime we have centralized support. IT support can be available within an hour." Resilient companies also measure executives through linking IT performance directly to business results.



## Taking the next step: Are you ready for on demand?

Is your company an industry front-runner or a follower? Where does your company shine, and which areas need more work? The questions below are designed to help electronics executives begin to assess how far they have to travel to become on demand.

### Supply chain:

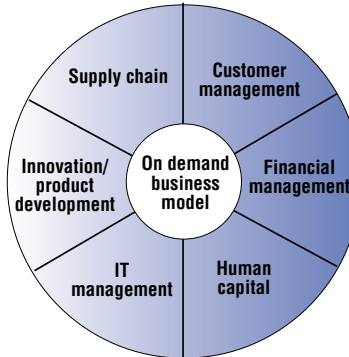
- Can your supply chain respond dynamically and rapidly to changes in customer demand, supply fluctuations and market and environmental conditions?
- Can you dynamically configure and deliver product/service bundles based on actual demand and market conditions?
- Are your supply chain infrastructure components scalable to be able to respond quickly to market changes?

### Innovation/product development:

- Is product development designed to eliminate risk?
- What processes are in place to help marketing and R&D collaborate to engineer products that reflect and shape demand?

### IT management:

- How well does your IT infrastructure adapt to business needs?
- When customer, market and user demands change, how flexible is your IT capacity?



### Customer management:

- How well do you anticipate and shape customer demand?
- What processes do you have in place to anticipate and proactively respond to customer issues and problems?
- How profitable is each of your customer segments?

### Financial management:

- How well informed are c-level financial management decisions?
- How effectively does your company manage risk?
- What processes are in place to manage volatility?
- Are you capable of managing volatility to the quarter?

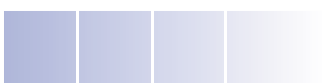
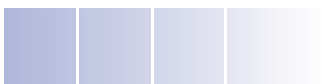
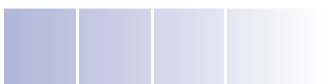
### Human capital:

- Which human capital management decisions can your company make in realtime, assured that all pertinent information is included in the decision making process?
- How well do you match people to work, and work to people without a noticeable time lag?
- Are your sourcing and manufacturing strategies organized around solutions, instead of product components?

## Conclusion

The more on demand an electronics company operates, the better it performs financially. The IBM Institute for Business Value study of the electronics industry proved that companies that are more focused, responsive, variable and resilient were more profitable, despite the last few lean years. But even though the front-runners have made forays into increasing efficiency and effectiveness, becoming a fully on demand business is still ahead of them.

In fact, most of the companies in the survey are herded together in mediocrity. Many companies are surviving, but to break out of the pack and thrive, they will have to think in broader, more transformational terms. The initiatives most companies are implementing are fine first steps toward becoming an on demand business. But sustained leadership in the electronics industry will come from those companies that focus on truly differentiating capabilities – and begin to look not only at what is



best practice today, but what is possible to achieve tomorrow. The path toward on demand will mean changes that impact everything, from the supply chain to the business model. To get started, determine where you are on your on demand journey today, identify the areas of greatest opportunity for your company – and take a step ahead of the competition.

Opportunities to benefit from becoming on demand exist in all areas of the electronics enterprise, from financial management to IT infrastructure. To explore the ways in which we might help you begin to chart your course to on demand, please contact us at [iibv@us.ibm.com](mailto:iibv@us.ibm.com). To find other resources for business executives, visit our Web site:

**ibm.com**/bcs

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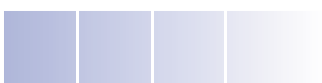
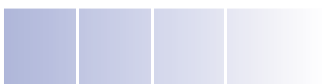
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## *References*

- <sup>1</sup> IBM Global Electronics Industry analysis.
- <sup>2</sup> "On demand and business value in the electronics industry." IBM Institute for Business Value, October 2003.
- <sup>3</sup> Ibid.





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