

# Beyond cost savings\*

How to transform a supply chain through anticipating risk



Globalization has put increasing operating and economic pressures on businesses to reduce costs to remain competitive. As a result, businesses have put more and more reliance on suppliers and sub-suppliers around the world as a means to deliver on the promise of efficiencies and cost savings. But now these benefits are being tempered by a combination of forces: greater regulatory scrutiny, an altered manufacturing landscape, fluctuating currencies, shortages of raw materials, and volatility in energy prices.

These issues have spread vertically through the supply chain and the landscape is changing rapidly. Companies are responding, but if tactics are reactive and hasty rather than strategic, their responses may open the door to new and unanticipated risks. Achieving supply chain integrity—which we define as balancing operational objectives with brand reputation risks—is a more complicated puzzle than ever.

Yet, solving it has become a business imperative. Today's supply chains are stressed because they must deliver the right product at the right place and time while responding to changing stakeholder demands around issues such as environment, quality and safety. A few leading companies now rightly view the integrity of their supply chain as a source of competitive advantage. But even these companies are finding that today's tough economic climate is a barrier to modifying the traditional role of the supply chain as a reliable source of cost savings.

# Research

PricewaterhouseCoopers' (PwC) analysis of 600 companies that experienced supply chain disruptions shows that their average shareholder value plummeted when compared to their peers, their stock prices experienced greater volatility, and they suffered sharp declines in return on sales and return on assets.

The traditional emphasis of supply chain management has been to squeeze out costs. It is one thing to demonstrate the financial benefits of cost-reduction activities, but far more difficult to make a business case for investments that improve the resilience of supply chains. It is hard to establish a direct link between supply chain integrity and competitive advantage. But there is clear evidence that companies with weak supply chains face harsh consequences that better managed companies avoid.

This is the view of global businesses that have designed their supply chains to support organizational objectives instead of simply wringing out costs. Senior executives in these

companies have a shared understanding of how supply chain processes, risks, and transformational opportunities affect corporate goals. They are focusing less on historical data and more on understanding the evolving supply chain environment and its impact on their future. They understand that turbulence is imminent, but integrity will be their insurance against financial loss from mishaps as well as a foundation for growth.

PwC sponsored an analysis in which supply chain expert Dr. Vinod Singhal<sup>1</sup> estimated the financial impact of supply chain disruptions on public companies. We found companies that experienced supply chain breakdowns were far more prone to financial setbacks than a benchmark group of companies reporting no similar disruptions. As shown in Figures 1–4 on the following two pages, the affected companies suffered a loss in profitability, and sharp declines in shareholder value and public confidence. For many companies, the after-effects lingered for at least a year.

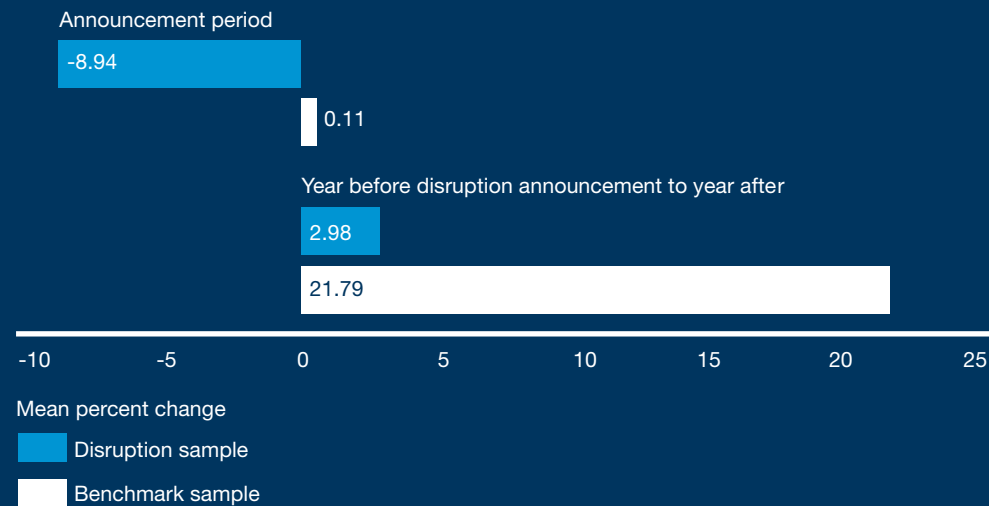


1. Dr. Singhal is Knoll Professor of Operations Management and Associate Dean for MBA programs at the College of Management, Georgia Institute of Technology. His work for PwC updated and confirmed an earlier study, *The Effect of Supply Chain Disruptions on Long-Term Shareholder Value, Profitability and Share Price Volatility*, in which Dr. Singhal and Dr. Kevin Hendricks of the Wilfrid Laurier University in Ontario, Canada, analyzed the financial impact of supply chain disruptions for 800 public companies between 1990 and 2000.

These disruptions included numerous highly publicized instances of product recalls, delays in product launches for safety and quality concerns, and late deliveries because of part shortages and shipment problems. Dr. Singh tracked the fortunes of 600 US public companies that announced such disruptions in *The Wall Street Journal* and via the Dow Jones News Service between 1998 and 2007.

## Figures 1–4: Impact of supply chain disruptions

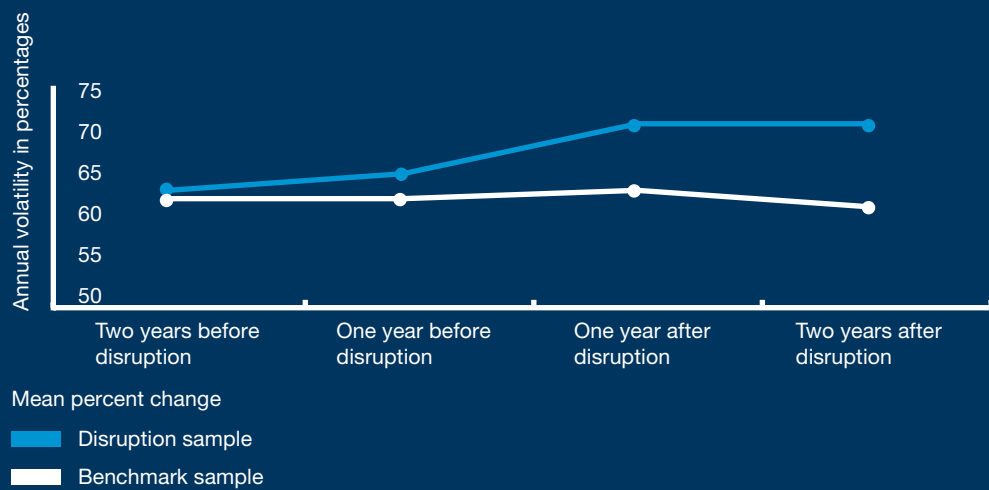
**Figure 1. How supply chain disruptions affect stock prices**



The market is quick to punish companies that report supply chain disruptions. On average, affected companies' share prices dropped nine percent below the benchmark group during the two-day announcement period (i.e. the day before and the day of the announcement).

Companies do not recover quickly from a supply chain disruption. Two-thirds of affected companies were lagging their peers in stock price performance a year after the disruption. The average stock return of those suffering from disruptions was almost 19 percentage points lower relative to the benchmark group over a two-year period (i.e. one year before to one year after the disruption announcement date).

**Figure 2. How supply chain disruptions affect share price volatility**



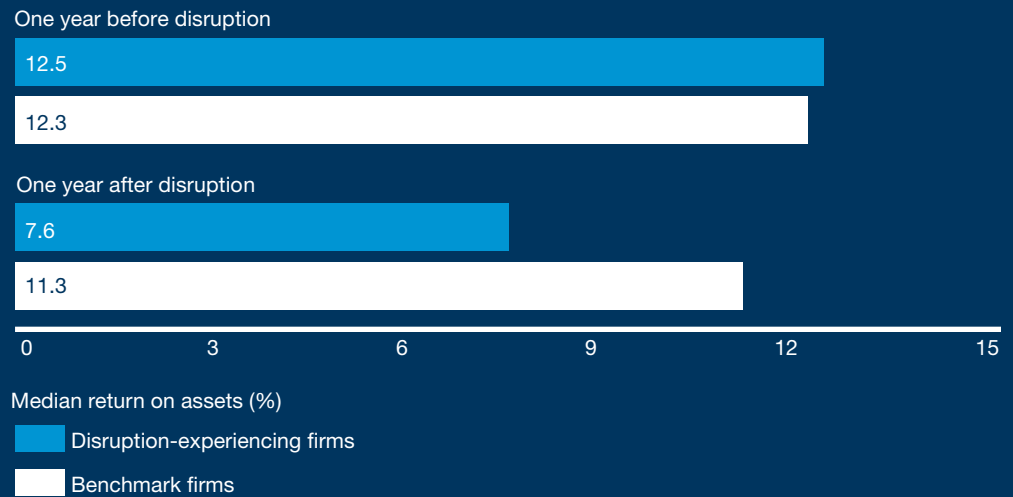
The investment community views disruption-experiencing companies unfavourably, and this uneasiness is likely to spread to employees, consumers, and suppliers. Compared to benchmark stocks, more than half of the affected companies experienced greater volatility for at least two years—a sign of diminished confidence among stakeholders. After controlling for normal market movements, the share price volatility in the year after the disruption of affected firms was around eight percentage points higher than the benchmark. Two years after the disruption, the affected firms were underperforming the benchmark by an even higher ten percentage points.

In some instances companies in our analysis blamed suppliers for disruptions. But many realize that finger pointing is not a winning strategy. As Dr. Singhal has said, “It does not matter who caused the disruption, what was the reason for the disruption, what industry the firm belonged to, or when the disruption happened—disruptions devastate corporate performance.” In the final analysis, it is the brand owner and not a remote supplier that is held responsible for the quality of the product and the reliability of its delivery.

A close analysis of the research, together with our firm’s experience, suggests that disruptions and quality control issues are often caused not by a single factor, but by the convergence of many.

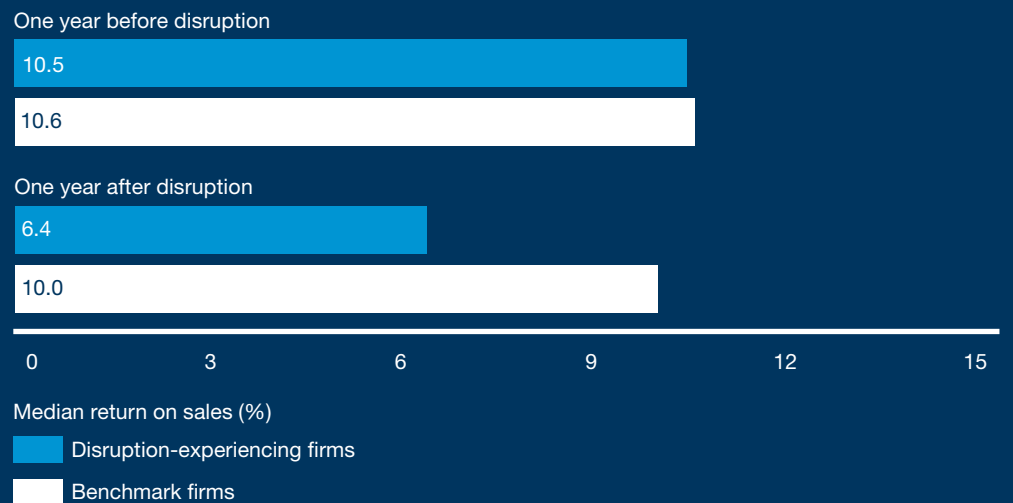
Disruptions take a significant toll on profitability as reported by standard accounting measures. More than 60 percent of affected firms experienced lower returns on assets and sales. After controlling for normal industry and economic effects, the average return on assets for disruption-experiencing firms was found to be down by five percentage points.

**Figure 3. How supply chain disruptions affect return on assets**



Return on sales suffered an average drop of four percentage points for companies that experienced disruptions. On both measures, the returns of benchmark companies were stable over the two-year period while those of disrupted companies fell significantly.

**Figure 4. How supply chain disruptions affect return on sales**



# Cross-functional approach

Increasingly, companies have to consider all aspects of integrity and strike the appropriate balance when managing their supply chains. This leads to greater operational discipline and increases the likelihood of actually realizing the cost savings that were sought in the first place. Such an approach has long been desirable, but dramatic changes in the business environment have now made it an absolute necessity.

Supply chain managers cannot assure supply chain integrity in isolation. The knowledge of supply chain risks and opportunities resides across the organization—in marketing, finance, operations, procurement, logistics, and information technology. In fact, many organizations already possess a substantial amount of information related to suppliers, however, rarely do these groups collaborate to execute a comprehensive supply chain strategy.

A direct link to organizational objectives makes supply chain risk management forward-looking. Instead of focusing excessively on historical data, companies can

start monitoring changes in the business environment and analyzing their implications for corporate goals. With an eye on the future, companies are better able to evaluate the adequacy of existing controls and deploy the right resources to address gaps before they become major problems.

Often, companies are looking ahead for innovative practices to make supply chains more efficient and lean, but their risk mitigation activities remain backward-looking, based on events they have already experienced. This risk management approach is lagging in nature and almost ensures that new risks will be spotted only when they become serious issues. Realizing this, a few companies have started making organizational changes that underscore the importance of supply chain performance to business success.

Companies that view supply chain as a direct contributor to the strategic goals of their entire business are more likely to deploy cross-functional teams of executives, truly in a position to understand the evolving operational and reputational aspects of supply chain integrity.

## Supply chain manager research

Companies are aware that their extended global supply chains are vulnerable to risks. But how well are companies *prepared* to manage those risks? Research shows that supply chain managers are uneasy about the future.

Recently, PwC surveyed supply chain managers from 59 global consumer and retail companies, large brand-owners particularly sensitive to both the reputational and operational risks of supply chains.<sup>2</sup>

Figure 5 shows that more than two-thirds of all respondents believe product safety is the greatest risk to supply chain integrity, but less than half are “very confident” of their company’s controls to manage this risk. Even fewer are very confident about their companies’ ability to manage risks around

business ethics, working conditions, carbon emissions, and local economic development.

Even though the principal objective of most supply chains was to lower costs, many of the managers were unable to quantify the real savings generated. Almost three-quarters of respondents said that reducing costs was the main reason for sourcing globally, yet one-fourth of the companies did not know what their savings were, and half could not measure the hidden costs caused by monitoring suppliers, and complying with social and environmental standards.

Significantly, only one-third of the managers said that their compensation programs required meeting goals related to corporate social responsibility. Clearly, despite the high cost of failure, most companies have not fully linked supply chain integrity to overall corporate strategy.

2. PricewaterhouseCoopers, *Global Sourcing: Shifting Strategies, Survey of Retail and Consumer Companies (2008)*.

Key performance indicators (KPIs) are necessary and useful for understanding the current level of performance in terms of cost, quality, and reliability. But the lagging nature of typical KPIs such as net inventory, customer lead time, and customer complaints does not allow management to mount an early response to the risks on the horizon.

A more forward-looking approach is needed.

Figure 5: Sample early warning signs

Leading risk indicator	Examples of sources of information about the indicator	Functions holding the information	Examples of qualitative indicators	Examples of quantitative indicators
<b>Financial risk indicators</b>				
Cash flow: Insufficient cash flow	<ul style="list-style-type: none"> <li>Industry reports</li> <li>Conversations with suppliers</li> <li>Supplier data</li> </ul>	<ul style="list-style-type: none"> <li>Finance</li> <li>Supply chain management</li> </ul>	<ul style="list-style-type: none"> <li>Complaints about supplier from other suppliers</li> </ul>	<ul style="list-style-type: none"> <li>Supplier has non-recurring engineering investment requirements exceeding forecast cash flow</li> </ul>
Working capital: Decreasing inventory turns	<ul style="list-style-type: none"> <li>Supplier self-reporting</li> <li>Supplier reviews and assessments</li> </ul>	<ul style="list-style-type: none"> <li>Finance</li> <li>Program managers</li> </ul>	<ul style="list-style-type: none"> <li>Supplier reports build-up of work in progress and accelerating material reimbursements</li> </ul>	<ul style="list-style-type: none"> <li>Supplier's sub-tier supplier inventory levels exceed plan by 15%</li> <li>Material buffers exceed material requirements planning (MRP) standards by 25%</li> <li>Progress payments invoiced 15 days earlier than expected</li> </ul>
Equity: Erosion of shareholder value or equity	<ul style="list-style-type: none"> <li>News and analyst reports</li> <li>Public filings</li> <li>Conversations with analysts</li> </ul>	<ul style="list-style-type: none"> <li>Finance</li> <li>Corporate strategy</li> </ul>	<ul style="list-style-type: none"> <li>Announced or rumoured takeover of supplier</li> </ul>	<ul style="list-style-type: none"> <li>Price-to-earnings ratio or market is more than 25% below industry comparables</li> <li>Market capitalization dropped 25% in one year</li> </ul>
Debt: Inability to service or refinance	<ul style="list-style-type: none"> <li>News and analyst reports</li> <li>Public filings</li> <li>Debt tracking services</li> </ul>	<ul style="list-style-type: none"> <li>Finance</li> <li>Corporate strategy</li> </ul>	<ul style="list-style-type: none"> <li>Upcoming refinancing event</li> <li>Secondary debt market trading levels</li> <li>Upcoming bond or interest principle payments</li> </ul>	<ul style="list-style-type: none"> <li>Trend of debt to equity ratio is increasing</li> <li>Trend of interest coverage ratio is decreasing</li> </ul>
<b>Operational risk indicators</b>				
Management: Key management changes	<ul style="list-style-type: none"> <li>Supplier reviews and supplier self-reporting</li> <li>Conversations with supplier contacts</li> <li>News reports/releases</li> </ul>	<ul style="list-style-type: none"> <li>Program manager</li> <li>Supply chain management</li> <li>Finance and contracting</li> <li>Operations</li> </ul>	<ul style="list-style-type: none"> <li>Key supplier contacts change</li> <li>Announcement of reduction in force or plants</li> </ul>	<ul style="list-style-type: none"> <li>Supplier's attrition rate exceeds 9%</li> <li>Supplier's sub-tier supplier base forecasts reach 75% of capacity</li> </ul>
Supply chain: Supply chain instability	<ul style="list-style-type: none"> <li>ERP system data</li> <li>Supply chain management metrics (delivery schedules, lead times)</li> <li>Supplier scorecards and self-reporting</li> </ul>	<ul style="list-style-type: none"> <li>Supply chain managers</li> <li>Program managers</li> </ul>	<ul style="list-style-type: none"> <li>Inability to get lead times from suppliers</li> <li>Increasing amount of expedited material</li> <li>Increasing changes in delivery plans</li> </ul>	<ul style="list-style-type: none"> <li>Lead times exceed plans by 10%</li> <li>Supplier's sub-tier supplier forecasts exceed plans by more than two weeks for two months running</li> </ul>
Process/quality: Process instability	<ul style="list-style-type: none"> <li>Operations meetings</li> <li>Quality management system</li> <li>Supplier reviews and self-reporting</li> </ul>	<ul style="list-style-type: none"> <li>Operations</li> <li>Quality control</li> <li>Supply chain management</li> </ul>	<ul style="list-style-type: none"> <li>Variable production outcomes (e.g. some lots integrate well and some do not)</li> <li>Unpredictable schedules and deliveries</li> <li>Increased communication between supplier and quality control</li> <li>Manner in which the supplier responds to purchase orders is significantly different from past</li> </ul>	<ul style="list-style-type: none"> <li>Actual to schedule is inconsistent by more than two weeks for two months running</li> <li>Increase in the number of outstanding quality corrective actions and average age increase of greater than 30%</li> <li>Sub-tier supplier production yield rates are more than 10% below targets</li> </ul>

# Driving down costs

A risk-based approach to supplier management enables businesses to make decisions that balance price and risk while reducing the direct costs of dealing with troubled suppliers.

A proactive approach fosters a spirit of greater collaboration which may result in a number of indirect benefits, including a lower cost of capital, lower indirect taxes, and greater innovation.

Consider the cost of capital benefits provided by a strong supplier relationship. Suppliers help finance several elements of a business from developing new components to holding stock to covering the costs of the period between billing and payment. These expenses are buried in the prices suppliers charge, however, borrowing costs for a supplier are typically higher. Greater collaboration between businesses and their suppliers from the start of the process reduces risks suppliers face, and thus, reduces their overall cost of capital.

In addition to such financial advantages, greater collaboration also encourages greater innovation. Toyota pioneered this strategy in 1939, when it began treating its suppliers as branch plants and making efforts to raise their performance. But Honda, Nissan, and several German automakers, including BMW and Porsche, also stress the importance of working closely with their suppliers. Therefore, it is no accident that these companies enjoy a reputation for first-rate design and engineering.



# Recommended actions

The focus of today’s companies should be on developing leading risk indicators, derived from continuously monitoring and analyzing changing conditions.

In the current economic environment, can your suppliers maintain the price and quality they committed to in a contract signed three years ago without distress?

Ultimately the answer resides within the supply chain itself.

Leading companies recognize that they are inextricably tied to their suppliers. They work with their suppliers to establish a common set of objectives and goals, so they can collaboratively identify risks to their mutual objectives. Linking with suppliers’ objectives provides a “front line of defence” and an “early warning system” that can expose possible threats to their supply chain.

Companies across all industries must identify leading risk indicators and continuously update and analyze this data for monitoring supplier performance. Those that understand risk interdependencies and consider risk mitigation throughout the life cycle of supply chain activities will be more successful than others at assuring supply chain integrity. Figure 6 illustrates this approach in the area of supply chain risk management.

Such a focus on early intervention rather than crisis management should be incorporated throughout

the risk management structure. That encompasses not only policies, procedures, and governance, but also the risk culture of the entire organization. Some essential characteristics of this approach are:

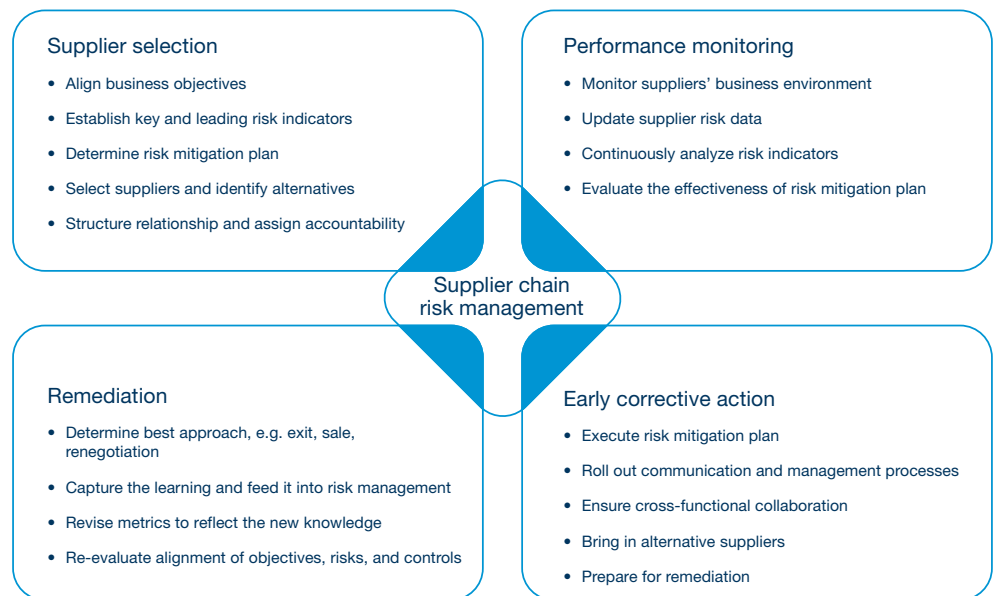
- **Risk assessment**  
Risk assessment begins by aggregating and prioritizing leading risks and estimating their probabilities and impact.
- **Risk response**  
Risk response is based on comparing this knowledge of risk to tolerance levels.
- **Risk monitoring**  
Risk monitoring involves evaluating the performance of risk mitigation

plans continuously as new information becomes available.

- **Improvement**  
Improvement is driven by identifying performance gaps and executing plans to address them.

Increasingly, value is created across a complex network of partners, suppliers, customers, regulators and stakeholders, and success depends on collaboration amongst them. When it comes to outsourcing, the challenge for organizations lies in finding the time and skilled resources needed to manage complex and often risky global arrangements. Is your business equipped with the insight, skills and resources to ensure success?

Figure 6: A leading approach to supply chain risk management



## How PwC can help

PwC's consulting team can help execute your business strategy with advice and implementation—locally and globally. As trusted advisors across the entire supply chain, we bring rigour and discipline to decision making, and drive value by understanding exposure to risk in the supply chain, managing distressed supplier situations, and linking organizational objectives with forward-looking supply chain risk management. We help our clients to formulate and implement strategies, reduce costs, increase efficiency and drive innovation.

We take the time to listen and have the courage to debate different points of view—based on independent and challenging insights, supported by facts and industry benchmarks. We give you the confidence to help you succeed in a connected world.

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