



Understanding risk assessment practices at manufacturing companies

A collaboration between Deloitte and MAPI
March 2015



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Executive summary

Deloitte¹ and Manufacturers Alliance for Productivity and Innovation (MAPI) conducted a risk assessment practices study to gain insight into how manufacturing companies are assessing and responding to risks today and how they plan to in the future. Executives from MAPI's Internal Audit and Risk Management Councils responded to questions regarding their leading risk assessment practices, the top business and information technology (IT) risks they face, and the intersection of risk management with strategic risk.

This research study was designed to contribute to a growing body of knowledge that can improve risk assessments, risk management, and ultimately position manufacturing companies to be more successful. The findings illustrate manufacturers have a keen awareness of the present and future risks their organizations face, and have opportunities to fine-tune their strategies to address what lies ahead. Analysis of executive responses identified four questions to explore:

- How is the risk landscape changing?
- What unique risk aspects should manufacturers consider?
- Is risk ownership aligned to address the needs of the organization?
- Can today's risk assessment techniques assess tomorrow's top risks?

In addition to considering these key questions, the study also contemplates the environmental factors manufacturers face and how those factors impact the way they respond to risk. For example, changing customer preferences, new products and applications of technology can rapidly make existing products, manufacturing practices, or even entire business models obsolete. Consequently, executives are increasing the pace at which they innovate and execute.

The quickening pace of technological advances presents significant challenges to risk professionals as well. Analytical tools and predictive modeling capabilities enable manufacturers to extract more meaning and direction from massive data sets. Cloud computing enables manufacturers to more fully benefit from robust IT capabilities without having to maintain related software, hardware, and infrastructure in house. Social media allow for easy posting and sharing of information, but those capabilities may also spur crises. Technological advances, in general, place greater emphasis on data security and other vulnerabilities.

The rapid and adverse nature of events, such as a data security breach, or an inflammatory social media post, illustrate the importance of assessing risks and designing appropriate response plans that adequately address risk velocity.

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The study results indicate many internal audit and risk executives are faced with a pressing need to evolve their capabilities. These factors demand a more analytical, a more agile, and a more clinical view of risk to effectively model the complexity and velocity of top risks and business disruptors. The evolution should focus on better use of technology, changes in the frequency of risk assessment cycles, and imbedding risk management practices within all levels of an organization. In short, risk assessment and management techniques should advance at a rate equal to or greater than the underlying business if they are to satisfy their business imperatives into the future.

Making even incremental improvements in risk management can yield substantial overall improvement for a manufacturer. Although the results will manifest themselves in things like fractions of market share realized through effective risk assessments, better success rates on large projects or improved decision making, it will naturally make its way to earnings. Overall, better decisions drive activities that protect and enhance value. Shareholders and other stakeholders place more confidence and trust in management's ability to address the uncertainties that arise in the course of doing business. In such a setting, the capability to better manage risk becomes a substantial competitive advantage.













How is the risk landscape changing?

A look to the future—top risks of tomorrow

Executives envision strategy-related risks as important now, and becoming increasingly vital in the future. When asked to priority rank future business and IT risks, innovation and cyber security risks topped the lists respectively (figure 1).

Figure 1: Top priority ranked business and IT risks surveyed executives projected for their organizations three years from now

Top business risks three years from now		Top IT risks three years from now	
	Product design/development innovation		Cyber security risk management, including compliance with critical infrastructure executive order
	Transforming the business model to access emerging sources of demand (JVs, M&A, and alliances)		Mobile device (smart phones and tablets) security
	Pricing/margin pressures resulting in overhead cost constraints		Cloud computing risks
	Talent and succession planning		Sensitive data loss prevention
	Fraud and corruption risks in emerging markets		Maintenance/viability of complex, disparate, and/or antiquated systems

Top risks were identified by aggregate ranking of risks by all respondents in order of assigned weighted average of risk ranking.

Addressing strategic risks requires manufacturers evaluate whether risk assessments are conducted in a manner that benefits the organization to the fullest extent possible. This evaluation should prompt questions as to whether or not risk assessments need to be conducted more frequently to detect emerging risks; whether risks are discussed in an ongoing fashion or just at formal, periodic presentations; and what methodologies beyond traditional interview and survey techniques may be needed.

The pace and impact of innovation

Innovation is a crucial strategic concern, with mounting pressure to meet anticipated return on investment (ROI) for manufacturers. Product innovation can rapidly make existing products obsolete. Innovation in the manner and pace at which products are developed, produced, and taken to market has the potential to deliver considerable value to the innovator while leaving the unprepared facing substantial competitive disadvantages.

Technological innovation enables the manufacturing business model more every day and it can present a

strategic risk as well. Among other benefits, technological advances enable companies to more effectively manage expansive international supply chains and adjust production plans to meet changing market conditions. Increasing reliance upon technology also means that technological risks can morph into strategic risks for manufacturers. To survive and thrive amid such a changing risk landscape, a company’s risk assessment focus and practices should align with those changes.

The manufacturing industry, as a whole, is a leader in research and development (R&D) and innovation across all industries in the United States. According to the National Science Foundation, manufacturers (excluding pharmaceutical companies) spent over \$160 million on R&D in 2012, a number that represented 53% of all R&D spend in the United States. On a per company basis, this amounted to about 3.8% of revenue for manufacturers compared to about 2.5% for nonmanufacturers.ⁱ Moreover, approximately 80% of this spending was self-funded showing the impressive level of reinvestment made through R&D in the US manufacturing industry.ⁱⁱ It also highlights the strategic importance of R&D, choosing the correct level of investment and effectively measuring return on those investments can have meaningful impacts on future positioning.

Internal audit can play an important role in providing an independent assessment to the organization of the processes and controls related to innovation and R&D decisions; measurement and metrics used to determine effectiveness of investments, and monitoring of progress, timelines, and budgets. Internal auditors should consider building projects related to innovation in the annual audit plans to bring greater value to the organization, with a focus on key risks to the processes involved.

Managing cyber risks

Almost every top IT risk of tomorrow has a cyber impact element. Given organizations cannot prevent all cyber incidents, the traditional discipline of security, isolated from a more comprehensive risk-based approach, may no longer be enough to protect an organization. Through the lens of what is most important to the organization, investment in cost-justified security controls to protect the most important assets is necessary, but the organization should focus equal—in some cases greater—effort on gaining



Beyond intellectual property concerns, manufacturers face the risks of attempts to access nonpublic information that so many other businesses face as well. The costs associated with the aftermath of such an attempt can be very high. In the United States, the average cost of a data breach is \$188 per lost or stolen record, or an average of \$5.4 million per organization breached.ⁱⁱⁱ

more insight into threats, and responding more effectively to reduce their impact.

Understanding the risks involved with protecting company assets and containing such costs is essential. In addition to an effective risk management program, which includes cyber security education programs and monitoring, internal audit can help the organization better understand its preparedness by using analytics to detect breach patterns and reviewing cyber-controls in a regular cadence.

Cloud computing has taken the business world by storm—and with it comes a potential deluge of risks. As confidentiality, security, service continuity, and regulatory compliance become even more critical in the digital enterprise, what role should internal audit play in addressing these risks? Internal audit should make sure it understands the organization's current cloud footprint, conducts cloud audits by starting at the procurement process, and recognizes the conditions that prompt business users to bypass the IT shop and sign up for cloud services directly. It should also develop and leverage a customized framework tool to help identify the organization's top cloud risks and drill down to key statements.

The Secure.Vigilant.Resilient.™ imperative^{iv}

Through an ongoing program to become secure, vigilant, and resilient, organizations can be more confident in their ability to reap the value of their strategic investments:

- **Being secure:** You cannot secure everything equally. Being secure means focusing protection around the risk-sensitive assets at the heart of your organization's mission.
- **Being vigilant:** By carefully plotting the motives and psychology of adversaries, and considering the potential for accidental damage, cyber risk strategists anticipate what might occur and design detection systems accordingly.
- **Being resilient:** If response to cyber incidents is viewed as primarily a technical function, you will likely not be equipped for decisive action.

In the pace of today's climate, organizations cannot afford to slow innovation simply because it cannot be perfectly secured, but neither can they innovate without appropriate regard for the inherent risks being generated. Cyber risk and innovation are inextricably linked; rather than subordinating one to the other, senior executives should harmonize these important elements of business performance through a program to become secure, vigilant, and resilient.^v



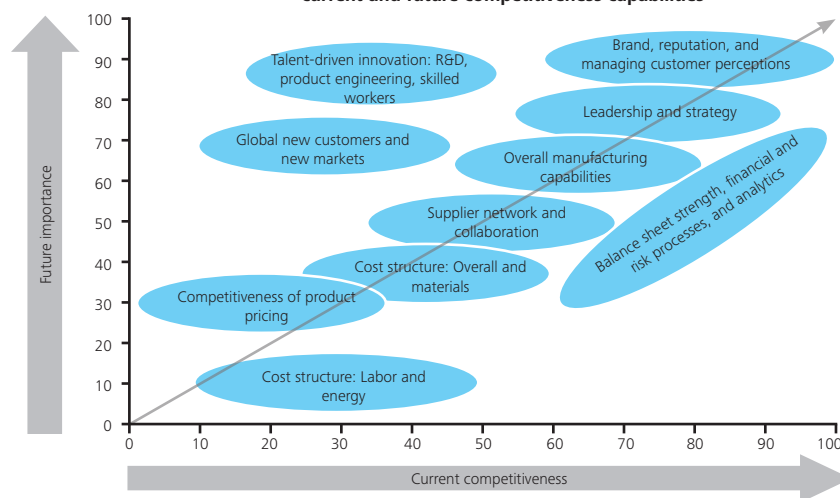
What unique risk aspects should manufacturers consider?

Competitiveness drivers

Understanding what can set a company apart competitively—today and in the future—is critically important for risk management. Product innovation, spurred by changing customer preferences, technology, or other factors, means that incremental improvements to an existing product may not be sufficient to address changes in demand. Maintaining competitive advantage can be costly and realizing acceptable ROI may prove to be challenging. For example, 3D printers promise to help companies revolutionize how prototyping and perhaps even how production takes place. However, capturing this opportunity will require substantial investments in R&D, where effective governance and appropriate risk assessment practices will be called upon to realize acceptable ROI.

A recent Deloitte Review article—*Cracking the Genetic Code of High-Performing Manufacturers*—examines the perceived importance of current and future competitiveness capabilities, and how those capabilities differentiate high performing manufacturers from the rest. The findings were derived by executives rating both their company's current competitiveness in each capability relative to its closest global rivals and each capability's importance to their company's competitiveness in the future.^{vi} The findings are illustrated in the clusters of capabilities chart in figure 2:

Figure 2: Defining characteristics—clusters of capabilities—of current and future competitiveness capabilities



Graphic: Deloitte University Press | DUPress.com

Among the capabilities plotted on the chart, those in which high performers stand apart from the pack and in which they likely will continue to lead are “game changer” capabilities. Along the current competitiveness scale, high performers are significantly better than their counterparts today on game-changing capabilities, and along the future importance scale, high performers place considerably more weight on game-changer capabilities than do the other companies in the study. *Notably, top risks identified based off responses to the MAPI and Deloitte internal audit study align with high-performer game-changing capabilities.* For example, innovation and talent management are among the game-changing capabilities that were also ranked as priority business risks by respondents to this study, indicating leading practices in these areas may set a company apart. What’s more, risk management and data analytics—areas where internal audit and risk executives are making significant investments—were also classified as game-changing capabilities that set high-performance manufacturers apart.

Complexities of supply chain

Manufacturers' supply chains are highly complex and continuously exposed to a variety of risks, emanating from within and outside of their value chains. There are macroeconomic risks around geopolitical pressures, regulatory requirements, environmental/social responsibilities, and challenges faced in emerging markets. There are also extended value chain risks related to third-party service providers, and operational risks related to development planning, sourcing, production, and distribution. In addition, the supply chain should consider functional risks related to financial investments, human resources, and IT. All these factors increase the complexities of supply chain management and, if not managed carefully, can result in potential adverse impacts to sales and brand reputation.

In light of the risks of operating a complex supply chain, manufacturers should consider how to build resiliency into the supply chain. Resilient supply chains can address critical vulnerabilities proactively, with a more targeted approach than attempting to predict and prepare for every risk type. A resilient supply chain balances risk and costs to prevent or recover quickly from a multitude of dynamic and simultaneous risk-related disruptions. This is generally

achieved through having visibility and transparency in the supply chain, flexibility in sourcing, collaboration within and outside of the organization, and a strong control environment.

Internal audit can play an important role in the supply chain processes by assessing related regulations across jurisdictions and monitoring processes on a global basis, evaluating import and export processes, and assessing third-party risks. Internal audit can also consider the risk management framework methodology, tools, and technology leveraged by the business. Other areas to consider include measurement techniques for monitoring supplier performance, availability and delivery of materials, and risk sensing analytic capabilities established by the business to monitor risk exposures within the supply chain.

The growing manufacturing skills gap

The Manufacturing Institute and Deloitte Consulting LLP 2015 Skills Gap Study^{vii} reveals the talent issue is growing—over the next decade, nearly three-and-a-half million manufacturing jobs likely need to be filled and the skills gap is expected to leave 2 million of those jobs unfilled. With CEOs and manufacturing executives around the world identifying talent-driven innovation as a top determinant of competitiveness,^{viii} it stands to reason the implications of such a talent shortage are significant and can have a material impact on manufacturers' growth and profitability. For example, 82% of executive respondents indicate they believe the skills gap will impact their ability to meet customer demand, and 78% believe it will impact their ability to implement new technologies and increase productivity. In addition, executives indicate the skills gap impacts the ability to provide effective customer service (69%), the ability to innovate and develop new products (62%), and the ability to expand internationally (48%).

Eighty percent of manufacturing executives reported they are willing to pay more than the market rates in workforce areas reeling under talent crisis. Still six out of 10 positions remain unfilled due to the talent shortage. This clearly indicates there are not a sufficient number of workers in manufacturing to fill these positions. Additionally, executives reported it takes an average of 94 days to recruit employees in the engineer/researcher/scientist fields and an average of 70 days to recruit skilled production workers. Facing these numbers, it comes as no surprise why manufacturers report the most significant business impact of the talent shortage is their ability to meet customer demand.

To address the skills gap, manufacturers not only have to find workers with the requisite skills needed to meet today and tomorrow's advanced manufacturing requirements, but they should also develop and engage their existing workforces. Creating a supply of workers with manufacturing skills—engineering, skilled trades, and production—will be critical to the future competitiveness of manufacturing companies, as well as the industry as a whole. An important component of addressing the talent crisis is designing strategies that optimize talent acquisition, development, and deployment; and, with seven out of ten surveyed executives reporting a shortage of workers with adequate technology and computer and technical training skills, it is understandable this is a pressing concern.

Internal audit can play a key role in assessing the human resources (HR) and talent processes in place designed to address anticipated talent shortage and skills gaps risks. An opportunity exists to play a strategic role in identifying weaknesses and assessing an organization's ability to identify resources capable of enabling the organization to meet its objectives. This may involve assessment of areas, such as recruiting and retention programs, HR IT systems, and deployment of data analytics capabilities to monitor trends.



Considerations for manufacturers

Manufacturers should consider the following important questions in addressing the changing risk landscape:

- How will the changing risk landscape affect future planning for internal audit and the organization?
- Is the outside-in view of risk same as the view from the inside out?
- Is ROI of innovation and R&D programs effectively monitored?
- How is velocity measured to identify rapid onset in the organization, including:
 - Cyber-attacks
 - Talent marketplace for key roles
 - Global supply/demand changes
 - Onset of geopolitical risk
 - Raw material/energy price volatility
 - Pricing
 - Fraud and corruption
- Has an appropriate cross-functional ownership been identified for mitigation strategies for risks that cross organizational boundaries?
- How will IT risks be identified and addressed timely in the future (e.g., security, social media, data loss, and other emerging risks)?

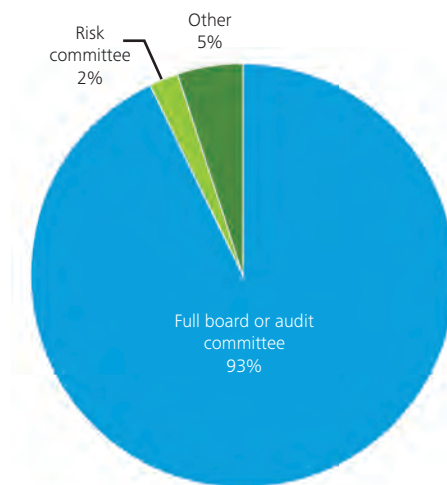


Is risk ownership aligned to address the needs of the organization?

The time is coming for manufacturers to consider a risk committee of the board

Ninety-three percent of survey respondents indicate risk management oversight rests with the full board or audit committee. Only 2% of respondents reported having a risk committee (figure 3) and the chief audit executive (CAE) is most frequently indicated the owner of Enterprise Risk Management (ERM) (figure 4).

Figure 3: Percent of respondents indicating where risk oversight of company's risk management activities rest



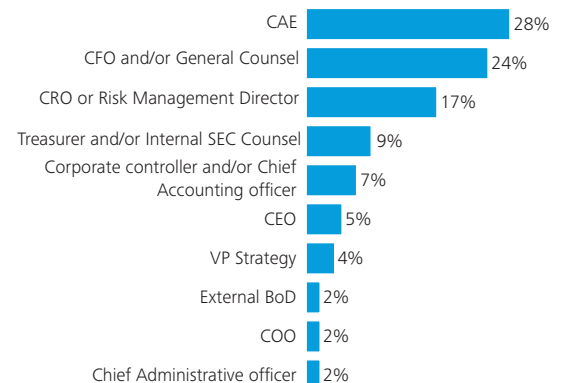
As the ultimate home of strategic direction, the board of directors is where the risk “buck stops.” However, given the risk complexity facing most manufacturing organizations, the competing priorities of modern boards (especially in public enterprises) and the reasonable time available to consider risk, it may be time to give risk management a clear subcommittee. Many manufacturers already do this, calling upon the audit committee. However, this home should be carefully considered.

The audit committee has a key responsibility for overseeing financial risks, but the committee’s acumen may not transfer to vulnerabilities beyond financial reporting. For example, a strategic or operational risk may be deemed less critical by the audit committee. Given the volume of specific responsibilities audit committees face, coupled with the pace at which risks change, it may be time to give risk a specific and dedicated home at the board

level. Giving risk management a dedicated home at the board level allows for clearer oversight and accountability for management, implementation of sound governance practices, and focus on transforming risk management to a value creating endeavor.

Considering the complexity and velocity of risks facing manufacturers, as well as the growing importance of understanding strategic risks for the board, consideration should be given to whether it is time for a risk committee of the board. In many respects, it becomes a question of when, and not if, for manufacturers. Undoubtedly, there may be issues, such as overlap of responsibilities for board committees to be addressed, how to allocate skills and the very nature of the type of board member to be recruited. Each of these issues, however, may ultimately enhance the company’s risk governance and consequently the corporate governance.

Figure 4: Percent of respondents indicating who in the organization has primary responsibility of ERM



Similar to the board level, risk needs a clear owner that is involved in operating the business. Internal audit can then provide an objective evaluation of management’s effectiveness in managing risk.

Internal audit and ERM

Internal audit absolutely has a role in an effective ERM program; however, in every situation, that role should stop short of responsibility for the program. When an internal audit team is responsible for ERM, two related problems are presented. First, it can pull internal audit

into an operational role with day-to-day management-related responsibilities. Second, as a result of being in an operational role, the objectivity of the internal audit function is undermined for risk management, thus rendering a capability looked to by the board to provide assurance, potentially incapable of doing so.

If ERM should not rest with internal audit, then who should be responsible? The answer to this question is nuanced, depending on the individual skills of those being considered and the needs of the organization. Therefore, there is not a “right” answer to the question; rather, certain characteristics should be present. ERM should be championed by someone who:

- Has sufficient seniority and credibility to be effective driving actions that result from the ERM program
- Has the broadest possible understanding of all the different types of risks that face the organization (financial, operational, compliance, and strategic)
- Has the appropriate executive and board support to marshal all resources necessary, internally or externally, to pursue the program

For some organizations, this may mean creating a chief risk officer (CRO) role. Other industries, primarily financial services, are creating this role. For manufacturers, the focus should be on maximizing the effectiveness of risk management and finding the proper executive champion.



Considerations for manufacturers

Manufacturers should consider the following important questions in addressing risk management governance:

- Does risk have a dedicated home at the board level with ample time and capability?
- Does the board receive frequent updates on the effectiveness of key risk actions?
- In management, who owns risk and ERM and who should own it in the organization?
- Do they have sufficient authority and credibility to drive action on key risks?
- Is risk identification/mitigation integrated with the strategic planning process?
- Does management meet frequently enough to identify and address material changes to the company’s risk profile?
- Are senior leaders held accountable for achieving their commitments related to risk identification and mitigation strategies?
- Is internal audit objective to monitor effectiveness of risk management functions?



Can today's risk assessment techniques assess tomorrow's top risks?

Whether today's risk assessment techniques can assess tomorrow's risk is a difficult question to answer and, ultimately a question that can only be answered within the context of an organization given the first-hand knowledge of the culture and capabilities. What is clear is this is a question organizations should be examining regularly, looking inside and outside the organization. Today, risk assessments at manufacturers we surveyed fit the following profile (figures 5, 6, and 7):

- Annual or semiannual events (70% of respondents)
- Generally consuming less than 500 hours of time (or on average about 2% of internal audit's available hours)
- Focused on the entire organization globally
- Heavily based on interviews, workshops, or questionnaires
- Predominantly focused on evaluating the impact and likelihood of risk events
- Top risks rarely change from one assessment to the next—two-thirds reporting that zero or less than 25% of risks change

Figure 5: Percent of respondents indicating frequency of risk assessment

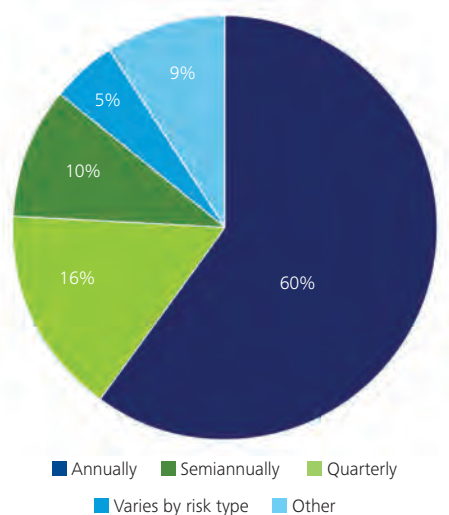


Figure 6: Percent of respondents indicating total hours spent on risk assessment annually

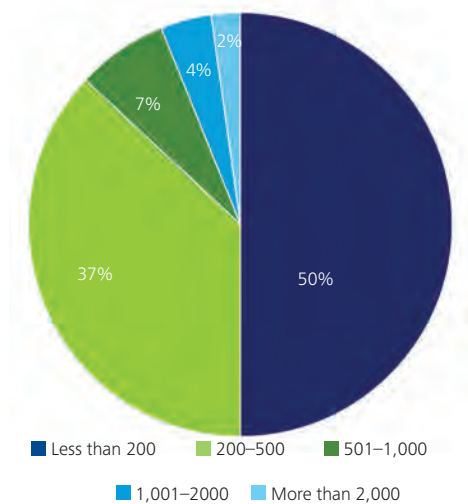
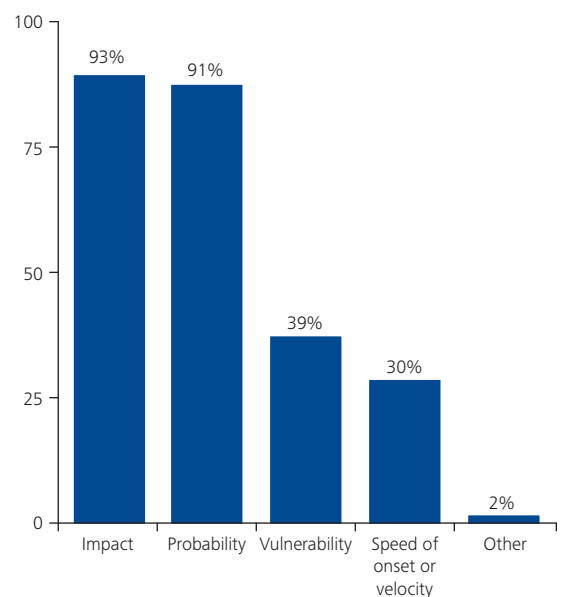


Figure 7: Percentage of respondents indicating dimensions of risk rated by risk assessment



Risk and strategy

Strategic risks present unique challenges to risk assessors. They are difficult to evaluate, incredibly important to the future success of the organization and are frontier to which good risk management should travel. As noted in the 2013 Deloitte Touche Tohmatsu Limited (DTTL) and Forbes Insights global study—*Exploring Strategic Risk* global risk study, business executives around the world say their understanding of the universe of strategic risk is changing. Managing risk effectively has always been a touchstone of the most successful companies. But in today's risk-filled business environment, it can be hard for executives to have confidence their plans and strategies will play out as expected. A big reason is strategic risks—those that either affect or are created by business strategy decisions—can strike more quickly than ever before, hastened along by rapid-fire business trends and technological innovations, such as social media, mobile, and big data. Companies that fall behind on the innovation curve may quickly fall prey to innovation's evil twin—disruption. This is just one of the reasons managing strategic risk has become a high priority for many executives.^{ix}

Thought should be given to whether the organization's risk assessment techniques can illuminate "blind spots" around core business assumptions or sufficiently acknowledge other risk landscape changes. Use of analytics and other IT capabilities can provide objective data indicating impending change to fundamental business assumptions that may not be identified through interviews and surveys. Those responsible for risk assessments should be considering the following:

- The strengths and weaknesses of the risk assessment techniques employed—for example, interviews are effective at gathering perspectives, but may not adequately identify emerging risks
- Whether the frequency of risk assessment activity is sufficient to meet the needs of the organization
- Whether there is sufficient dialogue about risk topics at board and management levels
- Whether the dimensions of risk should be enhanced to include additional areas, such as velocity

Further, staying abreast of the unique impacts trends, such as availability of required human talent, changes in available materials for production, the shifting nature of supply chains or even global economic events will remain important in planning the approach to assessing risks. The rate of change in areas, such as these may drive considerations around risk assessment frequency or on the frequency of risk reviews. Also, the regular evaluation and follow up on internal audit findings may begin to shift the organizations focus from conducting periodic risks assessment to a more fluid source of intelligence in identifying and assessing change, and identifying emerging risks.

Surviving and thriving requires keen recognition and response to change. A manufacturer's risk assessment practices should incorporate agility and flexibility, so the company can recognize and respond to risks that were not evident a year or two earlier.

Moving risk management from presentation to action

Making risk assessment more of an ongoing conversation rather than a periodic presentation benefits the organization in a number of ways. This transformational approach may also be aligned and supported through performing risk assessment activities more frequently. Additionally, fully leveraging available technology and data analytics tools can allow better risk insights that benefit the organization.

Internal audit has undergone significant evolution in recent years. In the mid-2000s, corporate adherence to the Sarbanes-Oxley Act increased demand for many internal auditors and increased their focus on compliance testing and financial controls. More recently, companies have been demanding more business insight and better risk anticipation from internal auditors. This cannot be accomplished by internal audit alone and often hinges on active lines of communication among and between capabilities, such as operations, finance, legal, compliance, and HR, to name a few. Some manufacturers have established management-led risk councils to enable this communication and seed risk thinking throughout the organization.

Embedding risk management practices throughout the organization makes identifying and responding to vulnerabilities part of the business culture. Based on an organization's unique circumstances, current practices should be challenged to determine whether there are more efficient or more complete ways to gather risk information to enhance the periodic assessment.



Considerations for manufacturers

Manufacturers should consider the following important questions in moving risk from an event to an ongoing process:

- Is once a year enough for risk assessments to keep key risks top of mind?
- What is the board and executive management's expectations in developing and effectively monitoring risk indicators?
- Should a management-led risk council be established to enable risk conversation?
- What are some challenges in collecting relevant data to determine if risks are occurring and/or emerging?
- Does the organization spend sufficient time analyzing the external view of the organization's risks?



The value and benefits of enhanced risk management

Top risk assessment practices

Survey respondents were asked to describe both the most successful as well as the least effective risk assessment practices and identified a number of practices respectively (figure 8).

Figure 8: Most successful risk assessment practices identified by respondents and least effective risk assessment practices identified by respondents

Most successful risk assessment practices	Least effective risk assessment practices
<ul style="list-style-type: none"> • Interviews • Periodic presentation of specific risk topics to board committee tasked with governance • Integrate risk assessments into strategic planning process with business units • Leveraging ERM or risk assessment committee with broad representation • Involvement of executives (CEO, CFO, and other C-Suite members) in planning, execution, and review • Risk scenario modeling • Quantifying impacts 	<ul style="list-style-type: none"> • Questionnaires or surveys (too long and/or sent to too many) • Risk models with too much complexity, detail, or subjectivity • Too narrowly focused, e.g., only financial • Failure to educate about the importance of risk assessment prior to its execution • Accepting canned or repetitive risk mitigation responses • Not including failures in risk management from previous years in current risk model • Determining probability of risk and trying to quantify residual risk after risk mitigation

The manner in which an organization establishes a risk assessment program should fit the organization's culture and risks. With that in mind, change is constant and may occur at unpredictable rates. Therefore, with regard to the role risk assessment can play in strategic planning and the anticipated direction of the business and the industry, a sound risk assessment program should also be established (and regularly reevaluated). There should be a regular, albeit measured, effort to continually enhance the sophistication of the risk assessment techniques to meet the needs of the business. This may mean experimenting with a variety of techniques, such as risk scenario modeling, core assumption identification, or deep dives on specific emerging risk areas.



Considerations for manufacturers

Manufacturers should consider the following in elevating the value of risk assessments:

- Integrate risk identification into the strategic planning process
- Research potential disruptors to strategy, such as innovation
- Identify mitigation and/or monitoring strategies for the highest priority risks
- Prioritize action-oriented mitigation strategies to change behavior
- Define ownership of key mitigation strategies and drive accountability for results
- Pay attention to how to monitor changes to strategic plan assumptions
- Define risk indicators and determine available information
- Remove bias through the use of both internal and external data to provide objective benchmarks to monitor key assumptions and strategic risks
- Focus dialog on continuous improvement to anticipate a changing risk landscape
- Make strategic risk a standing topic with the board and senior management

The path forward

Manufacturing companies have been involved in risk management since before the industrial revolution—each generation has brought new challenges and new opportunities. Today is no different. Based on the survey responses, there are several factors those responsible for risk can consider to position risk management as an advantage rather than a liability.

Manufacturers today should consider their entire approach to risk. Strategic risks may be the most crucial risks facing many manufacturers, and each company should consider how well its current approach identifies and assesses such risks. Changing that approach may mean making risk a standing topic at board meetings and/or having a CRO or other champion at the senior management level. Internal audit can then support that approach by evaluating the effectiveness of risk efforts and adding insight into risk governance and evaluation.

A holistic approach to risk and risk assessment is needed. Continual attention from a board risk committee, a CRO or other champion, and internal audit supports that holistic approach. That structure helps embed risk consideration within a manufacturer's business culture. Critical risks may trigger additional risks within the company and will likely require the ability to deliver a coordinated response due to the number of areas affected.

Identifying and monitoring key risk indicators supports a holistic approach because it places greater emphasis on detecting risks surrounding core business assumptions at an early stage, rather than responding to such risks once they are much more evident and more difficult to mitigate. Internal audit's focus should encompass vital high-impact areas of possible emerging risk, such as R&D or marketplace changes, so its risk assessment role is left as a routine activity, primarily focused on assessing known risks.

Even incremental improvements in risk management can lead to significant value enhancement. Modest improvements in addressing strategic risk may mean the

Improved risk assessment provides greater agility and greater protection against disruptive and potentially catastrophic events that characterize prolonged periods of decline. A manufacturer becomes more agile and able to recognize and respond to such events, and to capitalize on the opportunities such events reveal.

difference between a quarter or a year where performance dips, versus a longer decline that becomes difficult to reverse. Improved risk recognition and response enables a manufacturer to retain a long-term focus on differentiating its products on elements besides price, and on revenue enhancement, rather than cost-cutting measures.

The enhanced ability to recognize and effectively address strategic risks can give a manufacturer a competitive advantage, an advantage that enables it to not only survive, but thrive amid change.

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Acknowledgements

We would like to give special thanks to Megan Knox, senior research associate and assistant council director, from MAPI for her unique insights and guidance throughout the effort.

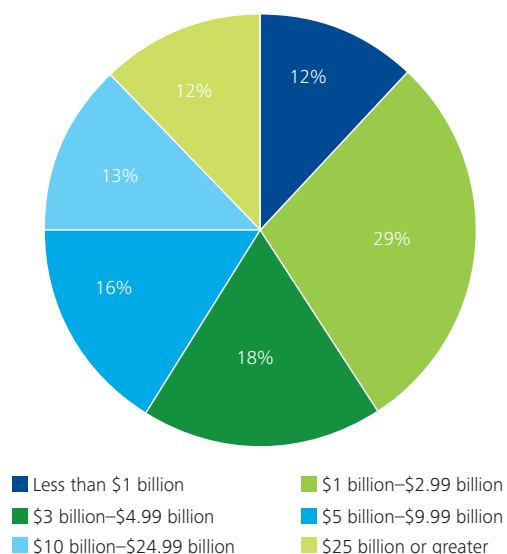
We would like to give special thanks to Suresh Parepalli and Dushyant Mehta from Deloitte and Touche Assurance and Enterprise Risk Services India Pvt. Ltd., as well as René Stranghoner and Prema Mirwani Graper from Deloitte Services LP for their contributions to the research.

Survey methodology



This survey was commissioned by Deloitte and MAPI, and was conducted online by MAPI during June of 2014. Respondents consist of 68 members of MAPI's Internal Audit and Risk Management Councils, and the majority of respondents range in revenue size of \$1–\$10 billion in annual revenue.

Size of organizations that responded to the survey



Endnotes

ⁱ National Science Foundation, Business R&D Performance in the United States Tops \$300 Billion in 2012; <http://www.nsf.gov/statistics/2015/nsf15303/>

ⁱⁱ *ibid*

ⁱⁱⁱ Data collected from the Ponemon Institute research report: 2013 Cost of Data Breach Study: Global Analysis, 2013.

^{iv} Changing the game on cyber risk, the imperative to be secure, vigilant and resilient, Deloitte, 2014, http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/AERS/us_aers_cyberrisk_changingthegameoncyberrisk_022014.pdf

^v *ibid*

^{vi} Cracking the genetic code of high-performing manufacturers, Deloitte Review, Issue 14, 2014 <http://www2.deloitte.com/content/dam/Deloitte/mx/Documents/manufacturing/cracking-genetic-code-high-performing-manufacturers-dr14.pdf>

^{vii} Deloitte LLP and The Manufacturing Institute, The Skills Gap in US Manufacturing: 2015 and Beyond, 2015

^{viii} Deloitte LLP and US Council on Competitiveness, 2013 Global Manufacturing Competitiveness Index, http://www.deloitte.com/view/en_US/us/Industries/Process-Industrial-Products/manufacturing-competitiveness/mfg-competitiveness-index/index.htm

^{ix} DTTL and Forbes Insights, Exploring Strategic Risk, 2013 http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/us_grc_exploring_strategic_risk_093013.pdf

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