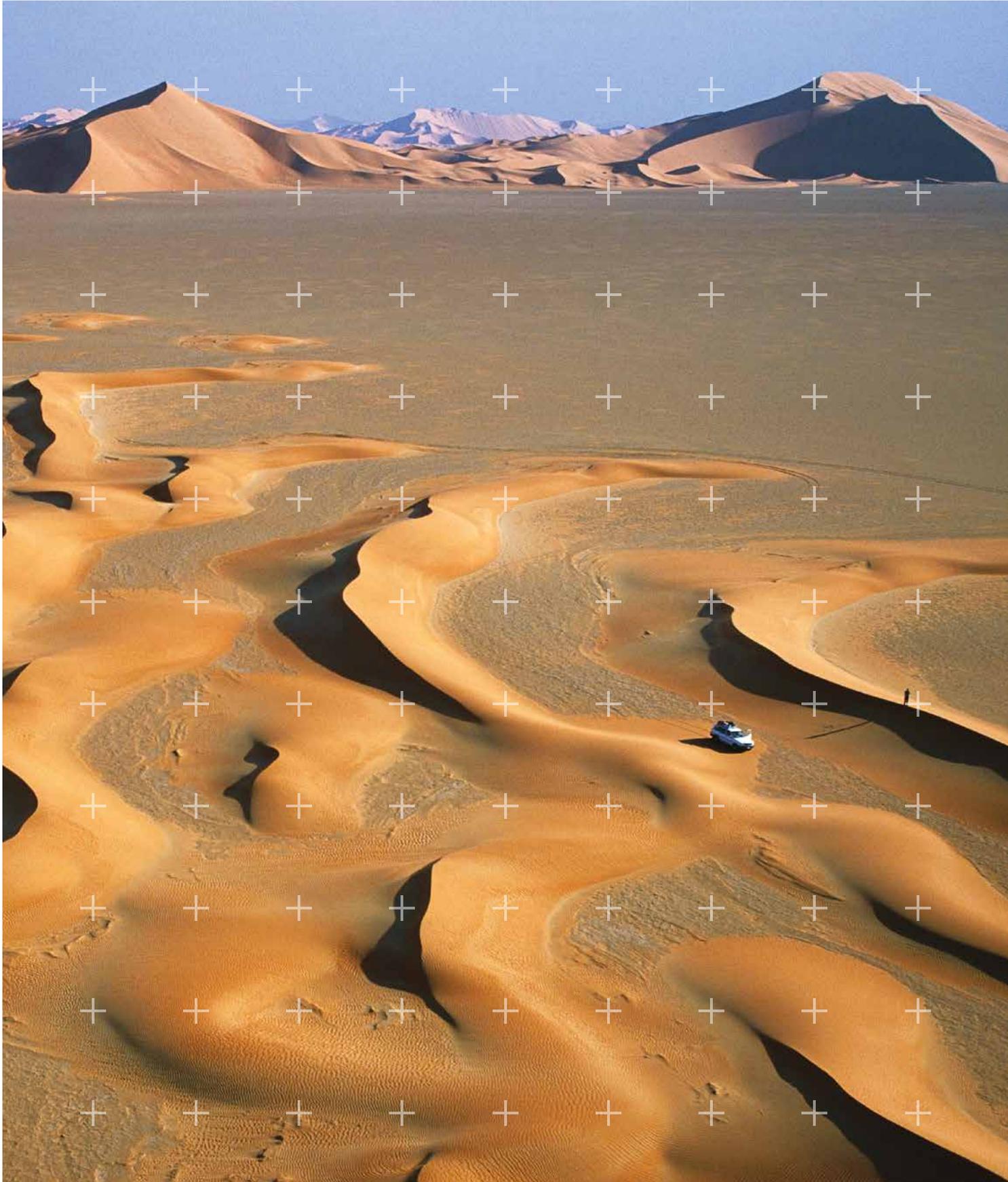




**Innovation and ERM:
partners in managing
the waves of disruption**



The Future Today



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Executive summary

A wave of change and disruption is coming. Disruptive factors such as Big Data, increased competition, the Internet of Things, and commodification are causing increased risk and uncertainty for companies, and leading to pressure to rethink the business model and value proposition on a regular basis.

Traditional ways of doing business and thinking about strategy seem less relevant. Strategy texts and thinking have not quite caught up with the pace and the need for managing risks from an enterprise-wide perspective that views risks from multiple dimensions. Companies must get better at seeing, understanding, and interpreting these waves. Smart companies — those with keen risk acumen — see the wave and interpret the risks sooner than others. These companies also assess its impact on their business and adjust their business accordingly to ensure greater value and success. These companies develop their sensing skills and challenge their thinking to ensure they get it right.

To enhance the ability to see and understand risky waves, companies have also developed new tools. The tools include business model calibration, value killer workshops, black swan workshops, strategic bow-tie analysis, game theory workshops, and other workshops designed to challenge thinking about the risks facing the business and how those risks impact its specific business model. Opportunity workshops and emerging risk analysis are tools that are growing in significance. Emerging risk analysis can examine disruption and create opportunity from a view not usually seen by traditional strategy and innovation processes. Ultimately, these tools help a business know where to innovate. Innovation is a response to strategic risks.

Other companies create their own wave — a wave of strategy, change, and innovation that can disrupt and create risks for others. These innovation waves are largely a response to the strategic risks they are facing themselves. However, as innovation blazes new trails where others have not trodden and the regulators have

not considered, adopting an enterprise-wide, holistic risk approach might be more important than ever. Successful innovation requires that companies manage risk. Companies that are critical risk thinkers have developed approaches that factor in risk during innovation. These approaches include:

- + building a culture of innovation
- + incorporating risk into the innovation processes
- + requiring risk acumen
- + risk post-mortems
- + risk-adjusted analysis
- + innovating the business model
- + putting innovation on the risk map
- + building innovation governance, and
- + changing thinking.

No one business has adopted each of these approaches. Instead, companies have found the risk technique that works best for their innovation process. Innovating without knowing the full spectrum of risks seems foolish. Innovation teamed with managing the associated risk should lead to greater success in innovation.



‘How do we manage innovation risk? That’s a hard but important question.’

Ben Mulling, CFO, TENTE Casters, Inc.



+

‘In Chinese philosophy, the yin and yang symbols depict how seemingly opposite or contrary forces can actually be complementary. In terms of innovation governance, an example might be ERM tied to effective strategy, governance, and innovation. If ERM is viewed only as mitigating risk defensively, is it not contrary to the envisioning,

experimentation, and prototyping that is part of the innovation mindset? Probably. But the premise is false. ERM, applied properly and strategically, is also about creating opportunities to grow the business in a differentiated and sustained manner that aligns nicely with innovation.’

Jeffrey C. Thomson, President and CEO, IMA

The risky waves of disruption

The waves

According to recent work, the US economy stumbles about every 16 years (Kelly 2015)¹. Other work reveals that hundreds of companies suffered massive shareholder value drops from 10% to 90% within a 30-day period; and these 'value killers' were in both a good and a bad economic environment (Deloitte 2014). It's not just drops in value — the average life of a Fortune 500 company has declined from 75 to 15 years (Foster 2001). The business environment is unstable. It seems that no one economy or company is immune to dramatic change. In fact, a recent IMA member survey showed that 75% admit to the need to evolve or reinvent their business value proposition every five years (Stroh 2015).

The waves are coming and can seem relentless. The drivers of the waves could be increased competition, commodification, cheap technology, Big Data, the Internet of Things, or perhaps a belief — a belief that if some companies can get 'Amazon'd' or 'Ubered,' then new opportunities are out there for others that were not seen before, inspiring even more to join in the pursuit of not just developing the next Tesla or iPhone, but also of disrupting already existing businesses with a new approach.

Some see the risks and bet the company to combat the change (as IBM's Watson did in the early 1960s). Yet others seem to see the wave but misunderstand it and the impact on its current (and soon-to-be outdated) business model, as did Circuit City in its battle with Best Buy. Few boards or shareholders today would be very excited about any of these reactions. To this point, in a recent study on board risk oversight (Walker et al. 2012), one board member noted that his job was to determine whether the CEO knows the business and the business model or whether the CEO is just lucky.

+ Emerging risks and innovation are two staple topics today and need to become a standard part of the corporate conversation. Firstly, what events are coming over the horizon and how will they impact us? Secondly, how do we not just change, but leap forward by developing the discipline to commit to and the ability to successfully innovate?'

Bob Hirth, Chairman, COSO

Traditional guidance

Unfortunately, traditional strategy guidance is not much help in addressing risk. A current textbook on strategy does not mention risk identification at all and only mentions risk assessment on a single page in the entire text. Older strategy concepts such as production differentiation or cost competition also seem dated. While risk appetite is about how much risk companies will accept, take, or avoid, companies must first understand the changes coming before they can make that decision. Some new tools and critical risk thinking are required.

New strategy work suggests that today's strategy models need to incorporate the diversity of environments and consider the predictability of business situations (Reeves et al. 2015). Furthermore, today's companies should incorporate into strategy whether the company is trying to survive, shape or change.

The key issues for companies during this disruption and change are:

- + seeing and interpreting the waves of risk
- + creating waves and responding to the waves (through new strategies, risk assessment, innovation, mergers, and other methods), and
- + identifying and managing the risk and uncertainty caused by the waves along the way and, in the waves created, not limiting the outcome, but achieving greatness or perhaps surviving.

¹ Drops from peak to trough of at least 10%.

Seeing and interpreting the waves

Companies must get better at seeing the current disruptive waves. Recent work by Deloitte shows that companies are not using risk-sensing tools to detect threats to business strategy as much as they could. Deloitte's Ristuccia notes that these risk-sensing tools are 'critical to success' (*The Wall Street Journal 2015*). A recent strategy book explains the importance of understanding the coming changes:

'To react to and harness change, firms need first to observe and to try to make sense of it. When observing change, firms need to capture the right information and decode it to discriminate between trivial and significant changes (the latter changes being those that might be threatening or constitute opportunities), and between forecastable, knowable factors and currently unknowable ones that require exploration and experimentation. To understand the significance of change, firms need also to question and challenge what they think they know by uncovering and reconsidering blind spots and hidden assumptions.' (Reeves et al. 2015)

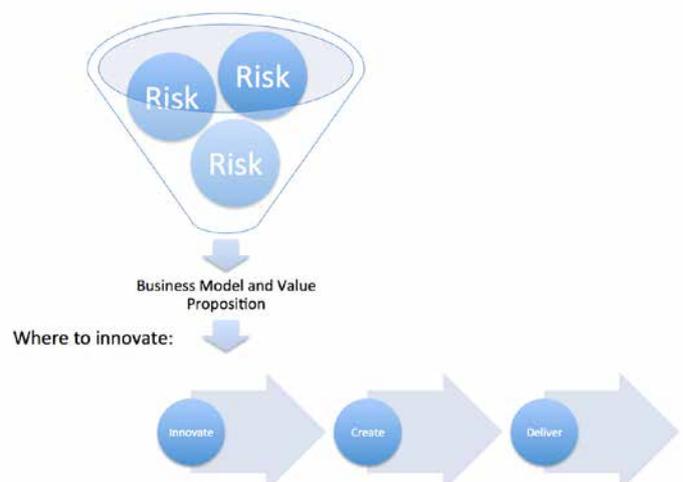
Additionally, companies need to develop their risk acumen. Risk acumen is similar to critical thinking but from a risk perspective. Risk acumen is about the ability to see the business model, risk, uncertainty and options, and then make good decisions. Unfortunately, risk used to be the dirty word for innovation. Some traditional risk people were primarily trying to protect the company's downside. But if risk is both uncertainty and understanding the distributions around a goal and objective (the upside and downside), then managing risk around innovation enables companies to do more than they ever imagined.

It is critical to see and understand the waves of risk because innovation is a response to strategic risk. Innovating without first knowing how risk and disruption are impacting the business model, environment and value proposition seems foolish and likely leads to greater risk in innovation. Figure 1 illustrates the relationship between the risk in waves created by others and the innovation path. Companies must first interpret the wave of risks coming at them, and these risks should be carefully assessed to see how they impact the current business model and value proposition. Once this is understood, companies can then decide where to explore, innovate, create, shape, adapt, and so forth. Otherwise, they may be innovating in the wrong places.

+ **'In the old days, companies used strategy mostly to look for opportunities to grow. Today, many companies are looking to not be disrupted.'**

Blake Eisenhart, Chief Audit Executive, Unisys

Figure 1: Filtering the wave of disruptive risks





Rethinking strategy and new tools

An example of one company that is rethinking strategy and risk is IBM. Part of IBM’s enterprise risk management mission is to increase the odds of success, and that includes a focus on strategic risks (Horn 2012). Their approach breaks out strategic risk identification, assessment, and management as follows:

- + formulation of strategy
- + execution of strategy (the strategy pursued), and
- + operations of IBM.

The ‘formulation of strategy’ approach is an important distinction from just identifying the risk to objectives. This approach considers whether there are disruptive waves coming and how the company might need to rethink strategy and innovate more.

Improving risk identification and assessment in these areas sometimes requires new tools in addition to a new method of critical risk thinking. Table 1 provides a list of some potential risk tools that can be used to understand disruptive risks coming towards a company.

A review of the business model and value proposition is a great starting point. It is also important to consider where the risk wave is hitting your business model, and where the business model and value might be created in the future. Even Ford is calling itself a ‘transportation services’ company today and is looking at both new technology and new business models. Ford is ‘experimenting with ride-sharing and pay-by-mile rental cars, expanding its research fleet of driverless vehicles, and in April rolled out an app called FordPass that allows both Ford owners and non-owners alike to do things such as reserve and pay for parking spaces or rent out their vehicles to other drivers’ (Norton 2016).

Executives must understand the value in the business model as well as the risks. Making sure that company strategy factors in the business environment is an important consideration for companies today (Reeves et al. 2015). A key question is who is having these conversations at each company.

Other useful tools to address the waves of risk include strategic bow-tie analysis, opportunity workshops, strategy² analysis, game theory, emerging risk analysis, black swan workshops, scenario analysis, and value killer workshops (Carson and Walker 2015).² The toymaker Lego has received considerable coverage of its use of scenario analysis in addressing strategic risks. Additionally, deep risk dives can be conducted on any risk. One of the many techniques used by several large companies is to bring in external thought leaders to push the board and others to see anew the waves, risks, innovation, and how the company should react.

+ ‘Linking innovation and risk is a business model and strategy approach... it’s about success. If innovation is not on your top risks in your map — wake up.’

Blake Eisenhart, Chief Audit Executive, Unisys

Risk tools for understanding risk waves
Business model and value proposition calibration
Matching of strategy to expected competitive and economic environment
Strategy ² analysis
Value killer workshop
Black swan workshop
Strategic bow-tie analysis
Emerging risk analysis
Risk deep – dive
Scenario analysis
Game theory
Opportunity workshop

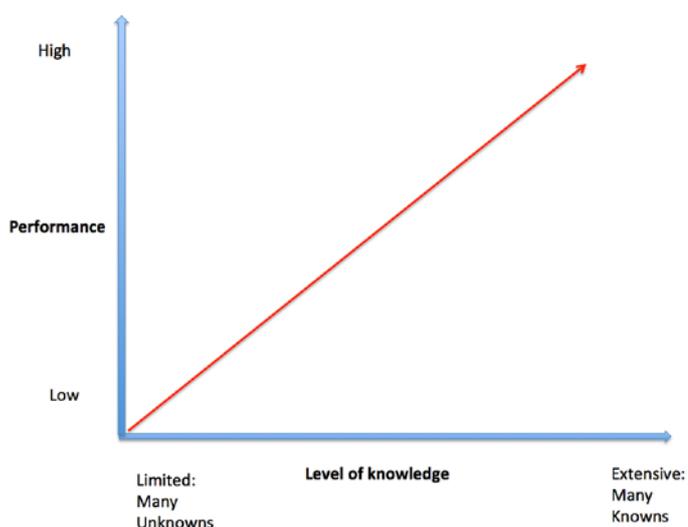
Table 1: Risk tools for understanding risk waves

² Strategy² is a unique approach that takes current strategic risks and then projects them forward using current strategic plans. The forward projection enables companies to see how the risk grows based on current strategy.

Highly unknown areas that are strategically important require more effort, more sophistication, and deeper critical risk thinking. One CEO of a NYSE manufacturer had a board member seriously challenge him not for missing the risk (he saw it as a financial risk to hedge) but for failing to see the strategic risk implications should the risk event occur. Questions such as ‘How do we avoid becoming the next Kodak or Hummer?’ can raise the conversation to risk-sensing levels not yet examined. These transformational risk questions can lead to a change in strategy and innovation, or a recommitment and escalation of innovation resources into the appropriate areas.

Some companies are using the emerging risk analysis process to flush out previously unseen opportunities, raising the value of the risk management process in influencing future strategy and innovation. This is a significant advantage the ERM view can offer because as ERM efforts lead to exploring the knowns, unknowns, volatility, velocity, impact, risk drivers, etc., they also lead to a consideration of paths less taken (rather than simply those trying to create a new product). Going down this path can be advantageous. Opportunity workshops are one technique to try to force this way of thinking. These opportunity workshops can naturally lead to companies identifying what wave they need to create to be disruptive.

Figure 2: The link between uncertainty and performance



³ There is a substantial and growing body of research that confirms that ERM adds value (leading to higher performance, increased odds of making profits, reduced volatility, etc.). Other research shows that it adds value because it enables companies to make better decisions (Gates et al. 2012). It seems obvious that it can add value to innovation too.



‘Identifying emerging risks as early as possible helps the company be better prepared to mitigate potential downsides, as well as better positioned to take advantage of the opportunities they may present.’

Stuart Horn, Director of ERM, IBM

Innovation is clearly a response to strategic risks facing the company. A big key to innovating in the right areas is to understand how risks are changing the company’s current business model and value proposition (again see Figure 1). Without that knowledge, it is harder to know if innovation is occurring in the right areas. Additionally, any risks seen from these tools must be tied back to current strategic plans to ensure adjustments are made.

Managing the risk, volatility, knowns and unknowns surrounding the business model and value proposition is ultimately about achieving performance. Figure 2 shows the link between uncertainty and performance. There should be a normal and positive relationship between performance and reducing the level of unknowns. Companies that achieve high performance but do not know that much about their business model or risks are lucky. The greatest chance to achieve consistent returns is to decrease the uncertainties and innovate in the right areas.³





Creating waves of disruption through innovation and risk management



‘Innovation is inherently risky, to be sure, and getting the most from a portfolio of innovation initiatives is more about managing risk than eliminating it.’

Marc de Jong, Principal, McKinsey & Company Strategy & Trend Analysis Center (de Jong et al. 2012, page 5)

Innovation risk perspectives

One perspective is that companies that are good at one thing and then try another are less likely to excel at the second thing (Levine 2016). This can occur because the companies are overconfident from prior success or because they do not understand the risk in the new concept. Another view is that the biggest risk is not innovating enough. Companies that fail to see waves of risk and disruption and only barely innovate will get overtaken. How much and where to innovate are difficult questions.

A third perspective is that the largest risk is innovating without knowing the risks. Consider the now bankrupt retailer, Borders, who missed the risk in their business model and innovation. They had a growth and innovation strategy that consisted of working with strategic partners, launching new divisions for selling CDs and DVDs, and expanding internationally. But Borders missed the risks and the related strategic inflection point.⁴ They doubled down on a former but outdated strategy and business model, while new models (and e-books) were coming into play. The Mexican fast food chain, Chipotle, had an innovative approach to fast food and healthy alternatives and grew aggressively, only to have multiple food poisonings and a lawsuit that suggests they did not identify and manage the risks associated with the new innovation. Not seeing the risk in innovation and strategic choices can be devastating.

Successful innovation

Managing innovation and risk is more about success than just downside negative thinking. Recent research confirms that the best companies (in the long run) do not necessarily take more risk. Instead they carefully

manage risk to ensure future success (Collins and Hansen 2011).

Research on successful innovation suggests some common themes (de Jong et al. 2012). First, innovative companies must aspire to innovate (similar to the way companies are aspiring to disrupt others). Second, companies must choose the right deals. In a riskier environment, choosing must include an understanding of the real risk dimensions associated with that choice. This includes an understanding of critical risk questions — does the company just bet it all on this one deal? does the company have the capabilities and right people to manage this risk?

One major retailer applied risk acumen to their strategy and peeled back a risk that they had not previously seen. The risk arose out of aggressive growth plans that failed to consider whether the right experience and knowledgeable people were in place. The significance of the missed risk was that the earnings numbers promised to the analyst community were not accurate without the right level of talent (and the risk deep-dive discovered the numbers to support the misassessed risk). The company enacted an aggressive plan to narrow the gap and increase the chances of meeting the performance goals.

Incorporating enterprise risk management into innovation

Innovation is a response to strategic risk. Companies want to do new strategic and innovative things to create their own wave of disruption but they must manage the associated risk and uncertainty (both the upside and the downside). This requires a new approach that captures new thinking and new risk tools. Examples include:

- + building a culture of innovation
- + incorporating risk into the innovation processes
- + requiring risk acumen
- + risk post-mortems
- + risk-adjusted analysis
- + innovating the business model
- + putting innovation on the risk map
- + building innovation governance, and
- + changing thinking.

⁴ This key insight is provided by Jim DeLoach at Protiviti.

A culture of innovation

To improve innovation, some companies try to create a culture of innovation. They provide environments, tools, free time and innovation challenges to encourage more innovation. Others, such as the animation studio Pixar, try to hire employees who embrace uncertainty and unknowns. Pixar is one of the most creative companies in America. Ed Catmull, Pixar's president, explains his view of risk and uncertainty and the level of effort needed to manage the risk. He likens it to a door that we must walk through. 'Imagine a door that, when you swing it open, reveals the universe of all that you do not and cannot know. It's vast, that universe — far larger than we are even conscious of. But ignorance is not necessarily bliss. This universe of unknown stuff will intrude in our lives and activities, so we have no choice but to deal with it. One of the ways to do that is to try to understand the many reasons why something may be difficult or impossible to see. To gain this understanding requires identifying multiple levels of the unknown, from the trivial to the fundamental' (Catmull and Wallace 2014).

This view suggests understanding innovation risk and uncertainty will take serious effort — effort that is focused on multiple levels of unknowns. This may not be easy for successful, established companies. It may take a culture change. During one exploratory black swan workshop designed to flush out the unknowns, the CEO of a NYSE manufacturer told his top 20 executives (most of whom were engineers), 'Look. You're a smart group, but you don't know your risks.' This group discovered numerous potential unknowns that day. Of the two largest unknowns, one had been in an executive's mind, but he had never verbalized it. The workshop provided the opportunity to share and discuss the potential significance, and to address whether the executive saw the risk correctly and whether it really was important. The other large unknown addressed a business model or value chain risk concerning changes in product design and technology by a vendor that used their product — a change that could potentially make one of their products obsolete within three years. This risk had never been identified or discussed at any level in the company.



'Innovation manages strategic risk. If you know the real risks, you can innovate more.'

Fortune 50 Risk Leader

Incorporating risk into the innovation process

Managing the risks of a company-generated wave of innovation requires a rigorous process. There are many innovation process tools, but one lays out the approach to innovation as (Edgett 2015):

- + idea generation
- + scoping
- + building the business case
- + development
- + testing, and
- + launch.

Innovation process models help with innovation risk because they impose some rigor and exit criteria at each stage of innovation. The process also has objectives. The process, while still not risk acumen, helps ensure rigor and metrics and thus does partially help with risk identification. For companies with limited ERM staff, such rigor plus a little risk application could go a long way. Having ERM as a part of the innovation process might be the ultimate approach. One common problem is that innovation teams tend to see things only from their perspective. These tendencies need to be overcome.



'There is a risk of bias. This is due to the focus and expertise of each function. Engineers are focused on the engineering aspect. Marketers are examining the market. Regulatory people are focused on regulations and laws. As finance professionals, our job is to manage the risk and minimize that bias.'

Christian Cuzick, Senior Director of Finance,
Johnson & Johnson



If an innovation process model does not consider risk beyond financial risks, it is a bit outdated and fails to apply risk acumen. For example, some models specifically identify financial risk metrics such as the long payback period but do not consider any other risk dimensions or risk connections (such as strategic or reputational risk).

Companies should adapt these models to incorporate risk dimensions and risk linkages to maps, and apply critical risk thinking. For example, companies can identify the objectives, assumptions and risks at each stage. Further, these risks can be linked to other risks the company is managing. Risks could be lack of consumer acceptance, customer stickiness and key employee retention, but also customer pushback, cost increases, untested inputs, or unknown impacts of regulations. The risk-thinking executive can also factor in health risk, reputation risk, digital risk, environmental risk, ethics risk, etc. Many ERM approaches have appropriately moved well beyond thinking of risks only in financial terms, and innovation process models should do the same.



‘You must think of risks at every innovation stage.’

Fortune 50 Risk Leader

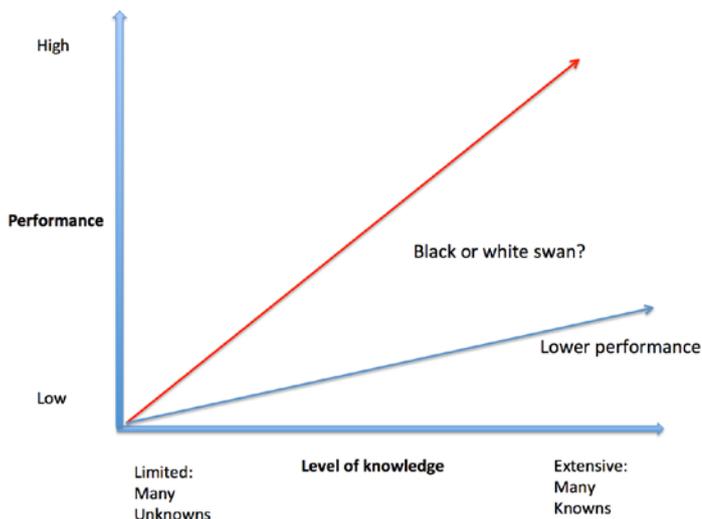
Of course, when using a COSO ERM framework, risks should then be assessed and placed in priority. A company that wants to gain X% market share should be required to think through the assumptions and the related risks. The easier risks to see are the dollars and quantity levels, but equally important are critical risk questions. Are we overestimating sales? Demand? How will this innovation cannibalize our current products? All companies want to identify and manage their biggest risks and this applies to innovation, too.



‘Companies, only to a small extent, understand all the risks associated with innovation.’

Dr. Klaus Möller, Chair of Controlling/Performance Management at University of St. Gallen

Figure 3 – Risk post-mortem



Requiring risk acumen

Another approach mandates risk acumen and an ERM approach on projects that meet certain thresholds. This approach includes mandatory consideration of non-financial risk and other risk dimensions and related plans to manage these other risks. This consideration can be required to be documented and submitted with the normal capital approval documentation, thereby tying a broader view of risk to all major capital decisions. The approach can lead to questions about necessary risk assessments for potential risks such as sourcing risks, safety risks, reputation risks, or even a look at the risk portfolio and correlation with other risks. Recent research shows that better-performing innovators 'use significantly more qualitative instruments such as technology roadmaps, scenario analysis, innovation scorecards or innovation assessments to manage innovation' (Möller, 2015).

In addition to the documentation, this approach could include a mandatory review by the chief risk officer or ERM team. Having an ERM team review all capital or innovation projects over a certain dollar amount sends a message to executives to think beyond meeting some simple financial metric. The other advantage of this approach is that the ERM team actually reviews the proposals and can provide essential risk input and analysis. Another variation of this approach is to require risk maps and analysis for new innovation projects (again, these maps consider substantially more than financial metrics). These maps can be linked to the larger risk portfolio and risk language of the company.

Risk post-mortems

One approach to incorporating critical risk thinking into innovation is to do risk post-mortems on strategy changes and innovations. Risk post-mortems can also raise the conversation about risk capabilities by leaders and innovators (see Figure 3). The post-mortem can address each major assumption, the accuracy of the assumptions, any missed assumptions, the reasons for the oversights, which stage failed, and which risks were misassessed, not identified, or not managed. Team comparisons can also be done to learn which teams are better at certain innovation and risk dimensions than others.

When performance is significantly below expected (see Figure 3), the company should explore whether the cause of missing the performance was due to a risk that was easy to see (a white swan) or difficult to see (a black swan). Missing white swans suggests a need to improve the risk capabilities of management. Missing black swans is more understandable, but still companies should seek to determine whether the risk was foreseeable. Management and leaders are now being judged on their risk capabilities. It is not acceptable to miss an obvious risk.

Risk-adjusted analysis

Some companies are experimenting with risk-adjusted analysis to enhance decision making on strategy changes and innovations. One approach has companies using probabilistic decision making to adjust revenues and, ultimately, metrics such as the internal rate of return. An initiative that believes it will generate \$1 billion in revenue with a 70% probability can have the revenue number adjusted downward to 70% of a billion. This impacts the final metrics and can make decision comparison more reasonable. Others have suggested calculating risk-adjusted returns on capital. One advantage of this latter approach is the ability to determine how much capital is needed to absorb downswings. Probabilistic decision making and the use of models are valuable methods for measuring uncertainty as they lead to better decisions and stronger resiliency.

+ 'Consistent performance around larger (blue ocean type) strategies requires executives to be opportunistic, to identify uncertainty, to measure and model that uncertainty with proven and known tools, so that they can get risk-adjusted performance.'

Karen Avery, Partner, PwC



Innovate the business model

While many companies are seeking to innovate more and create or adapt new technologies, this may not be enough for a couple of important reasons. First, companies must adopt a risk mindset using some of the suggestions above, but they must also make it a leader capability and not rely only on the ERM team or consultant.

+ **‘Looking at risk in innovation projects alone is too narrow a view. Risk thinking could be applied to any large-scale change, product, decision, new market, etc. We must get risk acumen into business decisions. Risk management may be a function, but it should be a capability. Growth and innovation leaders need that capability.’**

Lock Nelson, Marketing Director, PwC

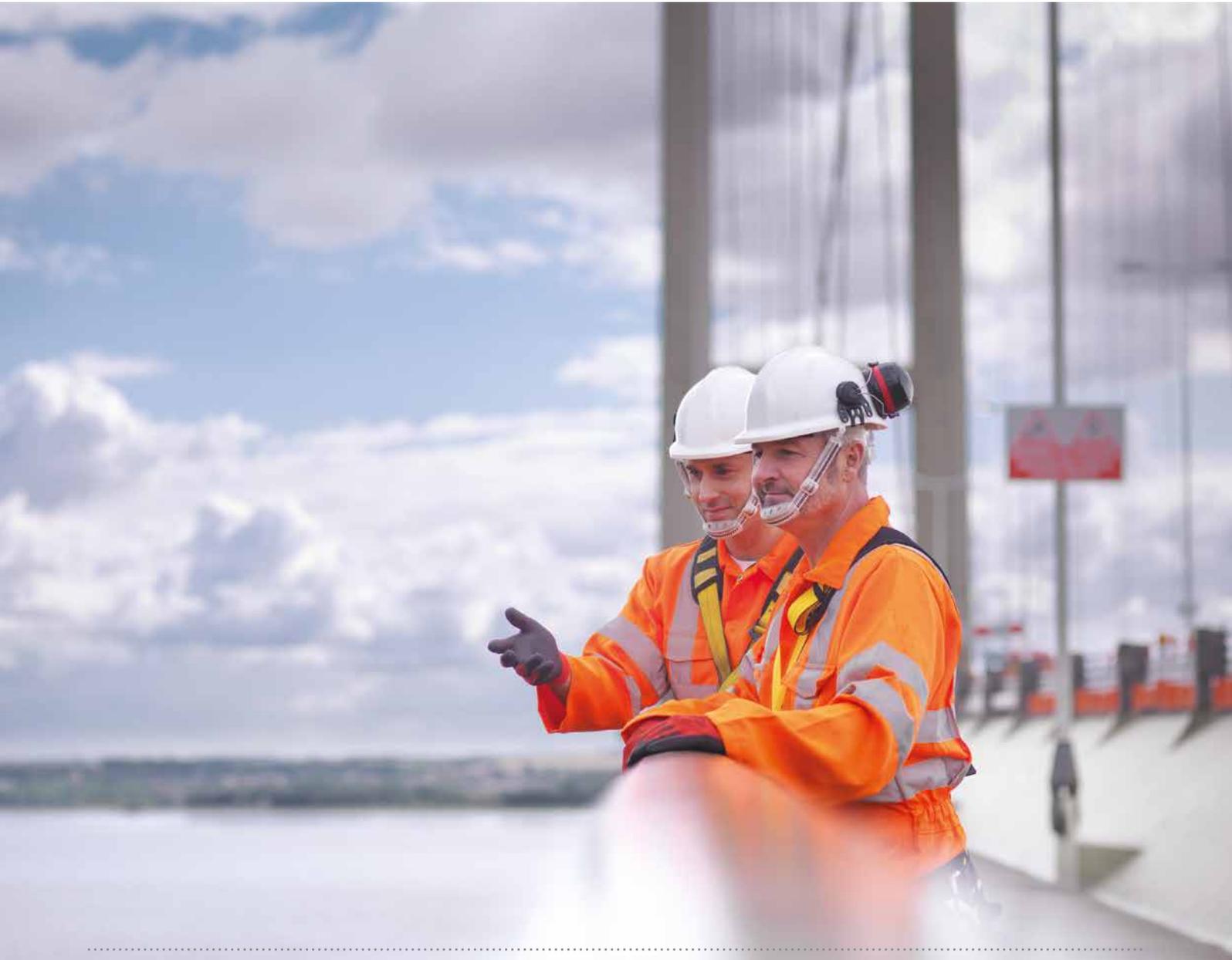
The second reason product and technology innovation is not enough is that the disruption may impact the basic business model itself. This is hard to see and understand because most business models used today (Canvas, Blue Ocean, Value Chains, 5 Forces, etc.) do not capture the risk, uncertainty, unknowns, or volatility in the model. Companies might see a wave of disruption, but they have a difficult time understanding how that wave impacts their business model and where it impacts their business model in the value chain (think of a shift in value).

For example, business models can be disrupted early in the value chain. Instead of competing on costs (manufacturing offshore) and turning over inventory, new suppliers come in and suggest selling to the customer on the web (e.g., new web-based furniture companies or Dollar Shave Club vs. Gillette). Other businesses view the value chain and business model and say the price should be based on willingness to pay (Uber) versus what customers currently pay (taxis). Others, such as Ford, seem to suggest that the value in the normal business model could be changing — from making money on the car margin to making money on controlling the data generated by the car, tires and consumer, and using that data for parking, traffic, weather, engine maintenance, safety, insurance, or other purposes. Companies must learn to adapt the business model and not just introduce innovation or technology changes.

+

‘Why do prominent firms, which have been known for their innovative products for years, suddenly lose their competitive advantage? Strong players such as AEG, Grundig, Nixdorf Computers, Triumph, Brockhaus, Agfa, Kodak, Quelle, Otto, and Schlecker are vanishing from the business landscape one after the other. They have lost their capabilities to market their former innovative strengths. The answer is simple and painful: these companies have failed to adapt their business models to the changing environment. In future, competition will take place between business models, and not just between products and technologies.’

Oliver Gassmann, Karolin Frankenberger, and Michaela Csik, ‘The St. Gallen Business Model Navigator’ (Gassmann et al. 2016, page 1)



Competing on price is one approach, but competing on business model may be significantly more important. It is often repeated that Steve Jobs believed companies cannot be afraid to change their successful business model and that they should rework their own businesses before someone else does. Most innovations in business models can be traced to a pattern. Companies should first understand their own business model. Next, they should consider adapting and innovating their model using known patterns of successful business model innovation (Gassmann et al. 2016). Adapting the business model without knowing the risk can be futile.

A quick check for today's executives and leaders is to ask the following questions about their current business models:

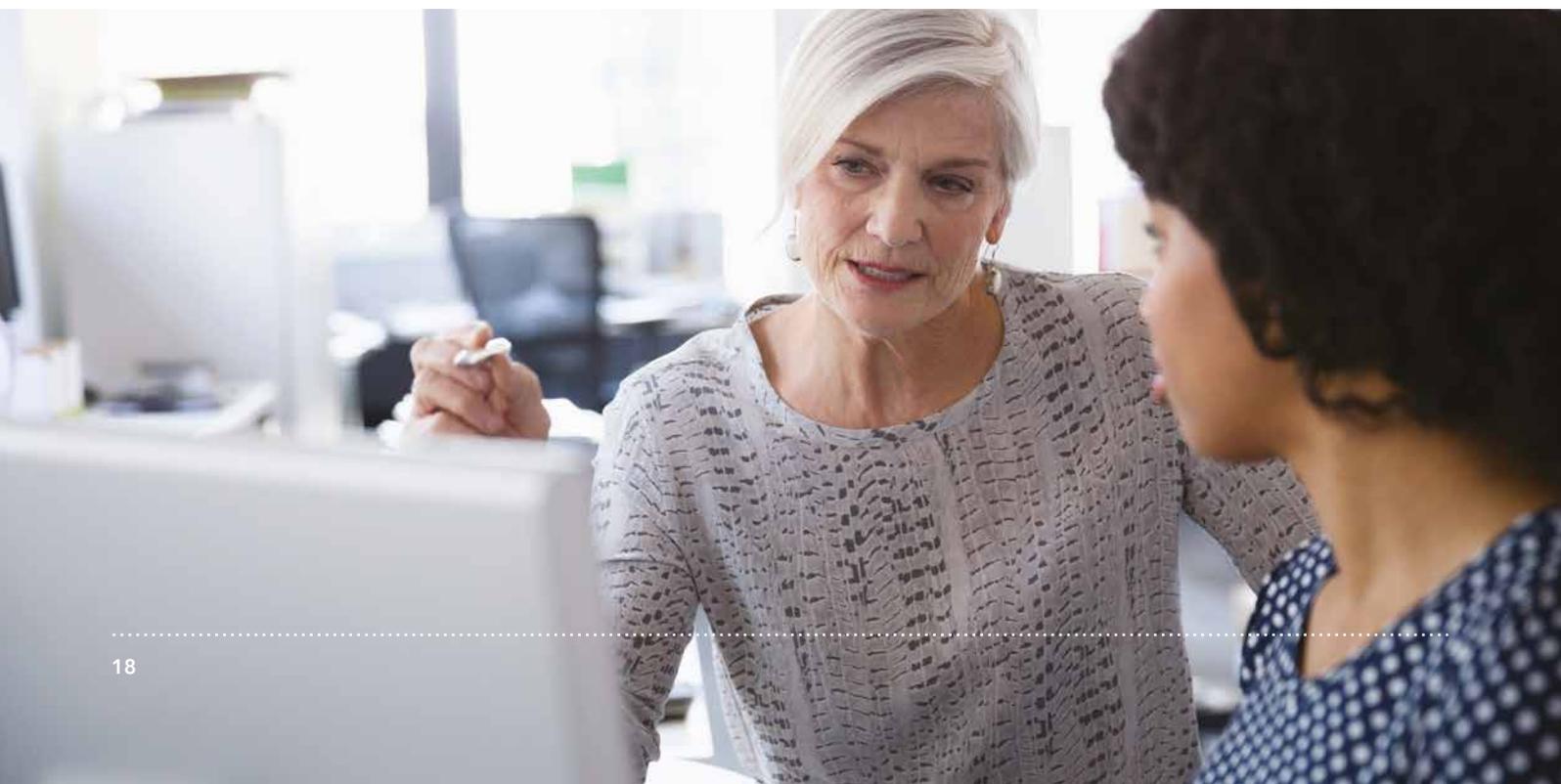
- + Do you know where the value is created currently?
- + Do you know where the value shift may occur in the future?
- + What are the current and future must-win battles?
- + Do you know where the uncertainty and volatility reside today and in the future?
- + Where can others compete on the same value chain?
- + How much of your current strategy change, or research and development (R&D) budget is invested in new technology and new products vs. new business models?
- + Have you compared your business model to known patterns of business model success to explore unknown areas of opportunities?

On the risk map

Many companies have innovation risk on their risk map or register and report this risk to their boards. Companies must identify the risk around innovation. Some companies identify the risk and then develop action plans to manage that risk and apply scenario analysis and other tools to both identify and understand the drivers of innovation risk. Management strategies to address the risk and drivers can be developed. Such strategies could include master calendars of products in the pipeline, portfolio management and sufficiency analysis, R&D allocation, and analytics. Analytics could look at industry, social, demographic, technology, geopolitical, and economic trends. A full pipeline might be great but if the market is moving elsewhere, the company has a problem.

Innovation governance

An additional approach (beyond having innovation risk identified) is to have an innovation governance process. Given that some innovation projects are larger than other companies' total revenue, this makes sense. Interestingly, the number one reason innovation projects are killed is a lack of business unit buy-in (Innovation Leader 2015). An innovation governance process can help manage such risks. For example, companies can apply the COSO ERM method to the innovation process, meaning they can identify the objectives of innovation, the related risks, and the business model and business unit tie-in, assess those risks, and monitor those risks.



They can also have an innovation strategy. If they have 20 innovation teams, they could further consider how they report to a larger innovation group or board. The innovation approach can have risks. It could focus on less significant risks or minor business model changes. It could not be linked to the risks from the coming waves or changes in the market. Some common innovation problems include having too many ideas, not having metrics that senior management wants, and not having a clear mission. One research project describes the innovation mission problem: 'It's hard to be a training company and an idea-development 'skunkworks'; to be a consultancy to innovators throughout the company and a rapid-prototyping group; to do both incremental and transformational innovation simultaneously. This all-you-can-eat buffet approach to innovation, trying to do a bit of everything, is not a long-term approach. Innovation teams will need to clearly define their mission if they hope to endure and deliver value' (Innovation Leader 2015, page 2).

Innovation governance is critical for true innovation (Stroh 2015). It helps companies avoid occasional hits, sets boundaries, and establishes the oversight necessary for clarifying capacity, funding, roles and incentives. It is about sustaining innovation long-term. Stroh notes three keys to innovation governance:

- + galvanizing
- + enabling, and
- + measuring.

Galvanizing covers goal setting, the innovation language, and other business structures for success in innovation. Enabling is part of the cultural change mentioned earlier, but it also addresses encouraging creativity, having appropriate channels, managing ideas, and setting protocols for testing.

Stroh has created an innovation metric to help companies measure, manage, and comprehend innovation success. The score follows a balanced scorecard approach and captures metrics in the areas of customer, growth, operational excellence and finance. The score also enables comparison with other companies for valuable benchmarking and improvement.

Such an approach can be used to manage an innovation agenda. One of the keys to the innovation score is that it can be matched to the company strategy. Recent work highlights the need for innovation risk and governance, and shows how few have developed the answer to it.

+ '92% said that their company should measure and govern innovation regularly as a key business process to sustain growth and value. 92%! The downside to this was that only 44% of respondents agreed or strongly agreed that they set innovation goals in their business, and even a lower percentage, only 35%, used innovation measures specifically to measure performance. So we know we need to innovate — it's clearly important. But it is hard to measure, and how ultimately do you 'govern' innovation and who should be doing that?'

Patrick J. Stroh, Advancing Innovation



Change in thinking

In addition to the various methods noted above about incorporating risk acumen into innovation and business models, the biggest hurdle might be changing a company's thinking. That change in thinking can lead to a change in leadership risk capability and improved chances of successful innovation. In sports and in business, those who perform a little better over the long run can create their own wave of success.

There is growing pressure on finance and accounting professionals to improve, and not just from the waves of disruption. Recent surveys show the finance job is changing dramatically and there is a push for more business-landscape and business-risk knowledge. Others think boards are more concerned about strategy.

The problem is that some growth and innovation executives are risk seekers and many finance and accounting executives tend to be risk averse. Plus, in some cases, these executives are functionally separate from one another. To help manage the waves, new CFO and future finance professionals need to have a mind shift from finance, accounting and control, to strategy, risk and a focus on the drivers of value and growth in the business. To push this type of thinking, one major technology company sends executives to risk acumen training. Changing this thinking might mean not merely incorporating risk acumen, but also escaping what one executive calls 'metric hell.'

+

'A strategy and risk approach to innovation and new ideas means that old accounting standby metrics such as the internal rate of return, cost of capital, payback, hurdle rate, etc. are the last things to look at. You've got to look at your core capabilities.'

Ben Mulling, CFO, TENTE Casters, Inc.

As an example of the change in thinking, companies are now deciding to invest in innovation when it raises their brand reputation or when it positions them as a market leader. Mulling notes one example where his company innovated in an area where all accounting numbers said profits would be low. They invested because it solved a problem for a big customer. This was an upside risk — or opportunity — that had to be pursued. Companies must consider the price of losing one key customer and whether that customer influences other customers. Further, they should consider risks such as whether losing that one customer impacts things like investor confidence in the company. Companies must figure out how to have an integrated and broader view of risk as it relates to strategy and innovation.

+

'It is easy to say 'no demand, let's not go there.' Instead, we've got to learn to look beyond numbers. And sometimes that's a core problem for some accounting and finance professionals.'

Ben Mulling, CFO, TENTE Casters, Inc.

Conclusion

Some have predicted dire consequences for those companies who fail to innovate. Others have predicted many companies will be subject to serious disruption. The key to addressing these challenges is rooted in three approaches. Firstly, companies must see and understand the waves of disruption, change and risk coming their way. Secondly, companies must be quick to respond appropriately to waves coming at them. They must consider innovating themselves, and that innovation should include innovation around the business model. Both approaches may need a re-examination of the business model and strategy of the company. Innovating without first understanding the risks around the business model is likely not a wise approach. Finally, companies must acknowledge that although innovation is a response to strategic risk, innovation and strategy change create risk. To get the greatest results, companies must learn to manage the risk in innovation.



Acknowledgements

We would like to thank the following people whose insights contributed to this report:

John Adams

Head of Enterprise Risk Management, PepsiCo

Karen Avery

Partner, PwC

Christian Cuzick

Senior Director of Finance, Johnson & Johnson

James DeLoach,

Managing Director, Protiviti

Blake H. Eisenhart

Chief Audit Executive, Unisys

Frank C. Fronzo

Vice President, Assistant Treasurer & Corporate Risk Officer, The Estée Lauder Companies, Inc.

Karla Hall

Global Head of Risk and Control, SunGard Utility at FIS

Robert B. Hirth, Jr.

Protiviti

Chairman, Committee of Sponsoring Organizations of the Treadway Commission (COSO)

Stuart Horn

Director, Enterprise Risk Management, IBM

Dr. Klaus Möller

IMA Honorary Professor of Management Accounting
Director Institute of Accounting, Control and Auditing
Chair of Controlling/Performance Management
University of St. Gallen

Benjamin Mulling

CFO, TENTE Casters, Inc.

Janet Nasburg

Chief Risk Officer, Intuit

Lock Nelson

Business Imperative Marketing Director, PwC

Kathy Robinson

Chief Audit Executive, ADP

Patrick J. Stroh

President, Mercury Business Advisors

Jeffrey C. Thomson

President and CEO, IMA

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