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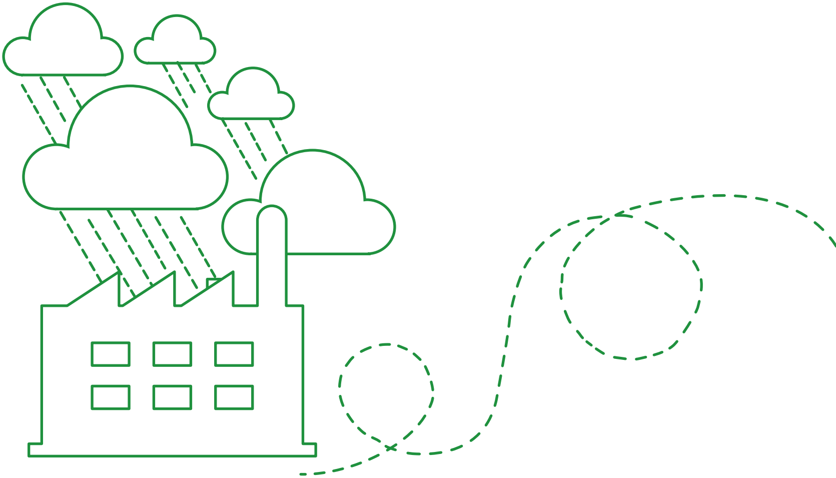
Disruption in Manufacturing

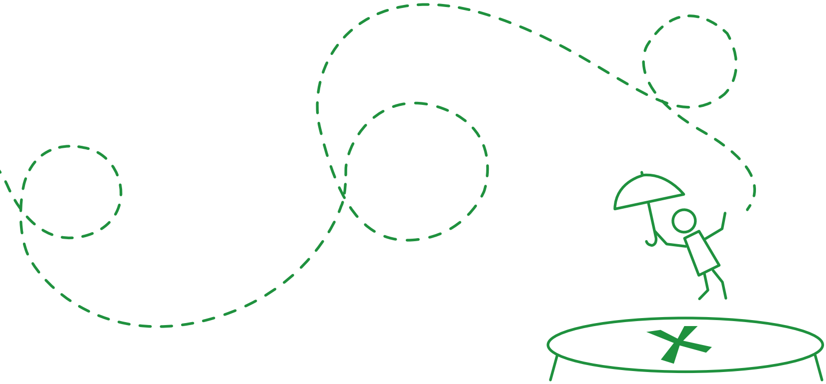
Deloitte on Disruption in Manufacturing

"There is nothing certain, but the uncertain." *— Proverb*



An odyssey into the unknown: Managing unexpected risk for strategic opportunity

Just as a journey can start with a map, a manufacturing company begins with a business plan. But what happens when something unexpected—perhaps a natural disaster or an unanticipated opportunity—diverts a company from its plotted course?



While disruption isn't always welcomed, it may lead to unexpected opportunities that lie off the beaten path.

What if, rather than avoiding risk completely, an organization looked for value by anticipating and addressing disruptive forces head on? What if managing disruption was as much a part of the journey as reading a map or consulting a compass?

Risk-informed decisions create value.

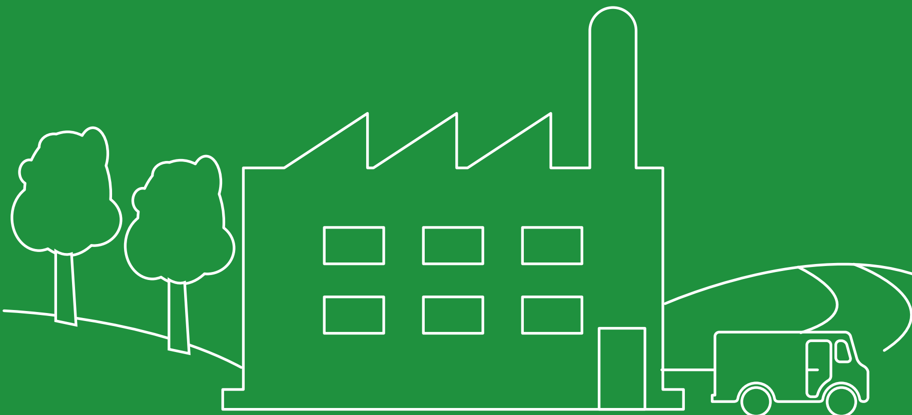
Consider how a strategic risk lens can help organizations gain confidence in first mover advantage. What if:

- A manufacturer shifts direction based on emerging trends before the rest of the industry and captures an outsized share of the market?
- An organization consolidates operations to central locations, close to customers, increases responsiveness, creates preference, and reduces supply chain disruption?
- A company acquires adjacent processing companies to create economies of scale and customer preference?
- A manufacturer disrupts the industry by shifting the goods it produces to meet a new category of needs?

By effectively creating value through strategic risk management, organizations can find insight and opportunity. They can also derive value by consistently making better decisions and outperforming competitors.

Planning for strategic risk may allow companies to:

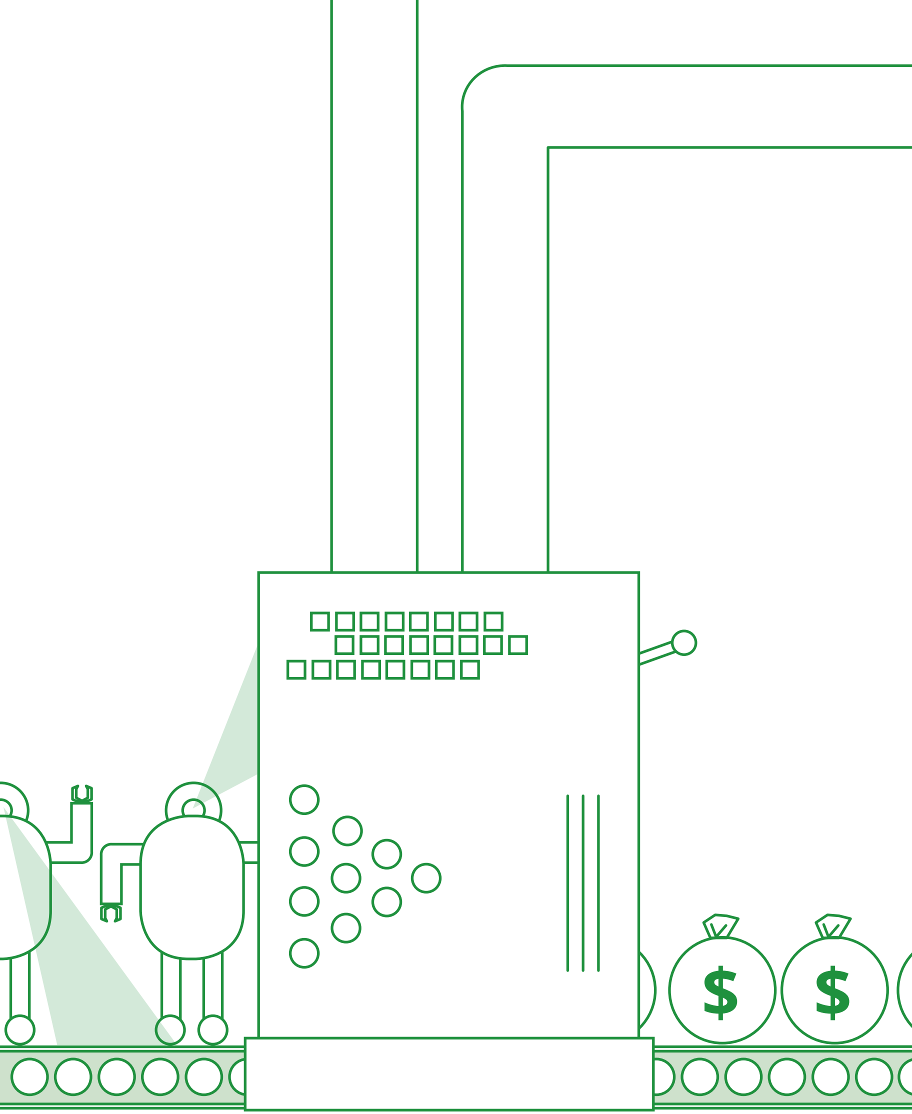
- Anticipate opportunities
- Respond to potential threats
- Create and protect value
- Survive in an increasingly competitive global marketplace



When does a strategic risk become a strategic opportunity?

Consider a producer that predicted the commoditization of the global industrial metals industry. By identifying the risks presented by the state-sponsored industry in China and effectively anticipating market changes, the company was able to adapt: reducing its mining and smelting operations and increasing its focus on specialty product manufacturing for specific sectors.

On the other hand, staying on course can be short-sighted. One manufacturer enjoyed tremendous growth when its unique technology gave it a cost advantage over rivals. But when the cost of traditional materials decreased and low-cost overseas manufacturers entered the business, the market shifted. The manufacturer made a strategic bet on its own technology with little consideration of outside risks. And the company filed for bankruptcy protection in 2011.



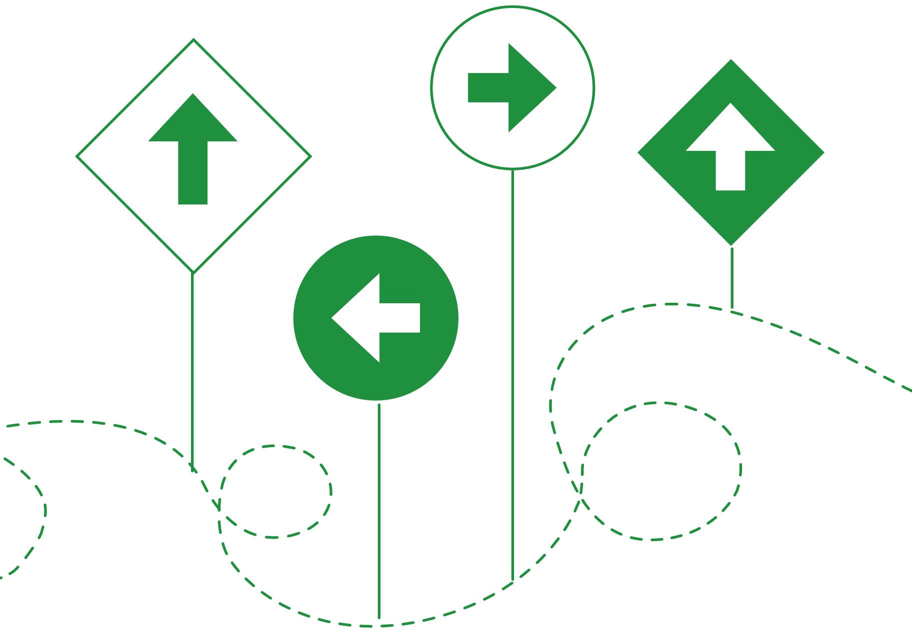
Navigating in a "VUCA" world

Unexpected risks are all around us in today's volatile, uncertain, complex, and ambiguous world (dubbed "VUCA" by the US Army War College). Manufacturers face challenges from powerful forces as technology, social, environmental, economic, and market trends converge, testing the mettle of even the strongest companies. When managed carefully, there's potential for improving market share, brand reputation, competitive advantage, and market traction, keeping the competition from gaining ground.

At the same time, manufacturing companies have an unprecedented opportunity to innovate and evolve. New customers, markets, materials, and technologies await exploration and provide unlimited opportunities for expansion and growth.

For example, Gartner projected in 2014 that there will likely 25 billion connected devices (enabled by IoT) in use by 2025. That represents a future market size of $5,649 billion by 2019, as reported in the Deloitte and Council on Competitiveness report, Advanced Technologies Initiative: Manufacturing & Innovation (p.40), 2015.

By managing strategic risk—the uncertainties and untapped opportunities that directly impact a company's identified strategic goals—organizations can navigate uncertainty while supporting business goals and both creating and protecting value (see Figure 1). Whether they continue to generate value for stakeholders depends on how well they prepare for and react to strategic risks.



86%

Could shifting the focus (to the 86% likely to happen) create more value in how to set your strategic vision?

Figure 1: What if executives spent more time on proactively addressing strategic risk?

Share price impact and audit time allocation across risk categories

Source CEB 2014 Share Shocks Analysis.

* A Significant market decline is defined as a drop in market capitalization of more than 40% in a single year

"Most strategies are built on specific beliefs about the future. Unfortunately, the future is deeply unpredictable."

— Michael E. Raynor, The Strategy Paradox

Understanding strategic risk: How do we plan if we can't predict?

Managing strategic risk effectively is much more than protecting value by avoiding potential downsides. Strategic risk can actually help create value by taking advantage of uncertainty and volatility to maximize gains and improve competitive positioning.

Strategic risk forces organizations to react because it:

Attacks the foundation of competitive advantage and execution of business plans. That foundation may be different for every company. The "special something" that's necessary for an organization to achieve long-term success could be superior talent, better customer service, exceptional supply chain efficiency, competitive pricing, global expansion, or an innovative idea that no competitor has been able to replicate.

Challenges the logic of strategic choices that creates a competitive sustainable advantage, including where to play, how to win, and how to organize.

Threatens an organization's position relative to competitors, whether it's a premium player, a low-cost player, or an innovator.

Undermines a firm's ability to achieve or maintain exceptional performance, as determined by investments, assets, equity, or some other measure.

Manufacturers have a choice to make: To focus solely on value protection, or shift the focus to anticipate trends, drive new strategies, and capture value.

Calculated risks

For example, introducing a new material into the manufacturing process is typically based on extensive research and engineering to help limit risk or downside. Acquiring new businesses or expanding into new markets are other examples, and these internal risks usually have a limited negative impact on value.

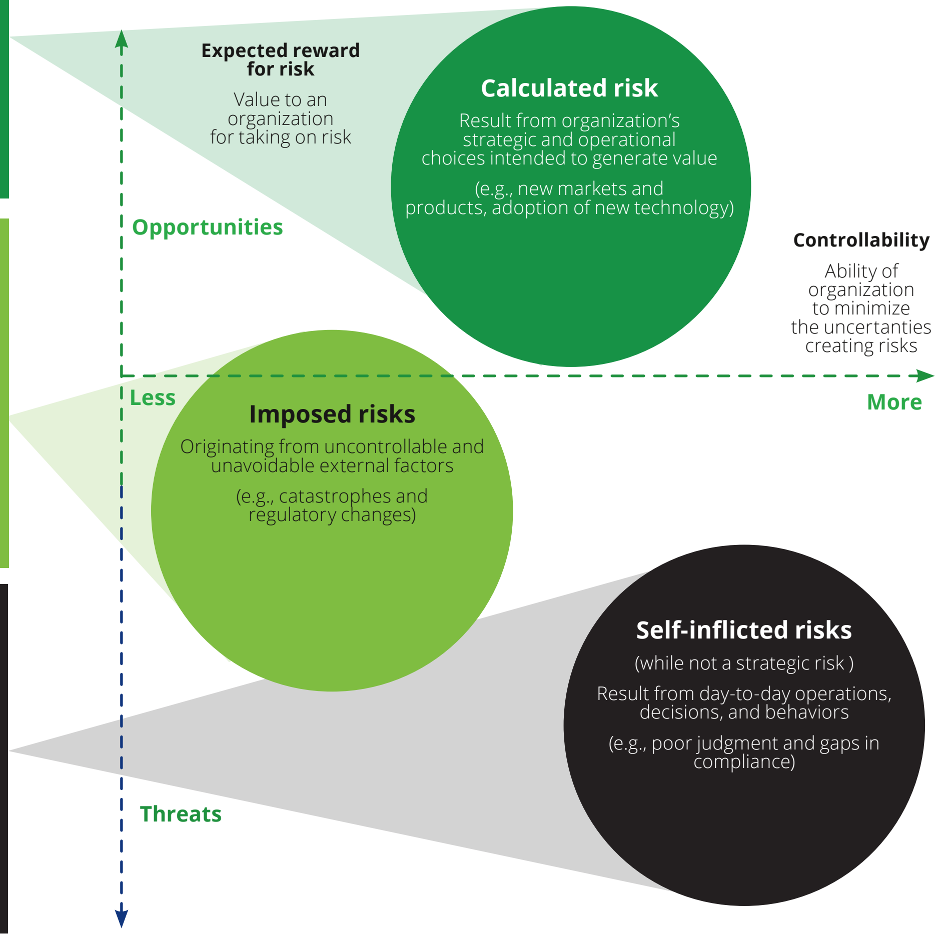
Imposed risks

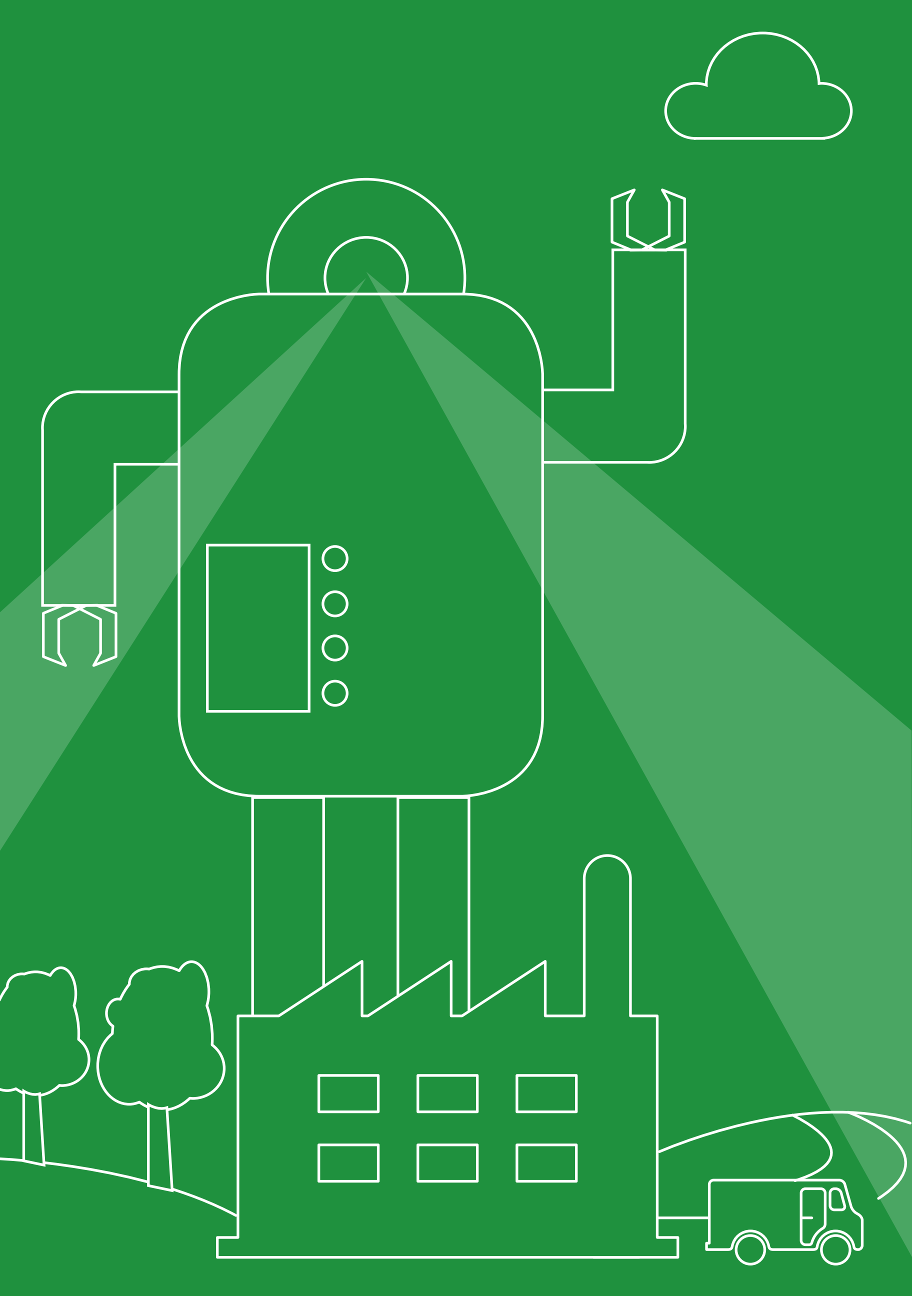
Consider the fertilizer industry, for example, which is looking for more environmentally friendly formulations as a result of regulations and market demands. How an organization handles external risks could have a significant impact on value, since the entire industry is dealing with them.

Self-inflicted risks

While not a strategic risk, organizations still experience self-inflicted risk. Failure to invest in talent retention and development or not correcting a manufacturing defect are examples of self-inflicted risk. The impact on value is high, and organizations have a greater degree of control over this type of risk.

Figure 2. Strategic risks generally fall into one of two categories, each with its own requirements for management and analysis





Disruptive forces in manufacturing

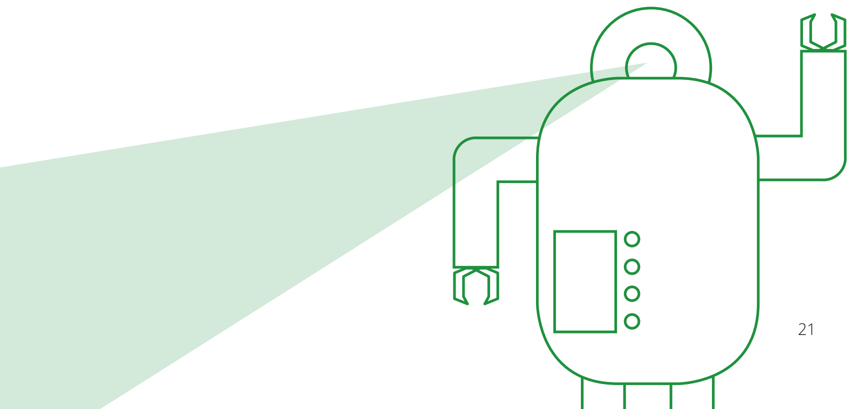
In manufacturing, managing strategic risk takes on an increasing degree of urgency. With the sector in the midst of an era of unprecedented changes and challenges, technology and economic factors present new opportunities to create and capture value. Changing dynamics in the following areas can result in shifts in a manufacturer's ability to deliver products, manage the supply chain, and serve customers in the traditional manner.

Customized demand. Changes in demand require more customization and personalization. In some cases, the customer is actually creating its own product. What are some of the tools that can be employed to deal with this disruption? Consider 3D printing advances that allow manufacturers to reduce cost, time, and resources needed to (re-)design, customize, and develop new products based on changes in customer demand.

Products. With smart manufacturing and connectivity on the rise, including the Internet of Things (IoT), sensors, controls, and man-to-machine and related interfaces and connections, products themselves are changing from "dumb" to "smart." Instead of simple products, manufacturers are delivering entire platforms or services throughout the life cycle of their manufactured goods. This transition serves as the beginning of an ongoing, interactive relationship with customers. Where are some of the sources of disruption? Platforms managed by manufacturers allow them to access and analyze data from 'smart' products to monitor their life cycle, as well as gain insights from metadata generated throughout their existing business operations.

Economics of production. Meanwhile, advanced manufacturing methods are changing the economics of production. Robotics can help lower production costs while time to market is shrinking. Where are the disruptors appearing? Additive manufacturing can eliminate traditional tooling used in conventional manufacturing techniques such as die casting, injection molding, and others in the value chain, reducing the number of assembly steps and parts, with "printed"—rather than assembled—parts.

Economics of the value chain. Intelligence and insights enabled by digital manufacturing are revolutionizing the economics of the value chain. This is eroding the value proposition for intermediaries and allowing direct customer engagement from the moment an order is placed through sourcing materials and customization—even after the product is delivered to the customer. What is enabling the disruptors? Sensors and controls, wearables, and IoT, among other things. Some examples of applying the technology include tracking movement of goods throughout the supply chain, or developing better understanding of supplier capacity levels and lead times.



Manufacturing companies are also influenced by external factors in the global marketplace that complicate supply chains and costs. Increasing political activism and tighter border controls can restrict commerce and the movement of goods and services. Companies, therefore, must be prepared to manage emerging situations. They must also develop strategies for addressing the impact that these social and political factors have on their operations.

Beyond the influences of technology, economics, social, and political factors, manufacturers have learned to keep an eye out for "big bang" disruptors—the unanticipated innovations or moves by competitors that completely change an industry.

New technologies will make it easier for new entrants to disrupt the market, perhaps from completely different industries. Manufacturers should consider how a startup or technology competitor might disrupt the playing field with access to crowd-sourced engineering, digital distribution and 3D printing technologies.

The biggest challenge is that this type of disruption appears to come completely out of left field, combining seemingly unrelated technologies to offer a better value proposition. Because disruptors are rewriting the rules of one industry after another, companies would be wise to prepare for the possibility of a game changer.

What might those game changers be?

A recent Deloitte study cited four major determinants in global manufacturing competitiveness:

- Availability of talent
- Cost competitiveness
- Workforce productivity
- Supplier network[1]

Add in advanced manufacturing technologies, public policy, and the convergence of the digital and physical manufacturing worlds and it's clear: Manufacturers must evaluate and prepare for associated risks to remain competitive.

Everyone sees these risks. But how an organization thinks about them can set it apart from the pack.

[1] Deloitte Touche Tohmatsu Limited's Global Manufacturing Competitiveness Index (GMCI), 2016.

Anticipating opportunity—
while protecting value—
is where strategic gains
may be realized.

Solve Duncker’s candle problem:

You’re given a candle, a book of matches, and a box of thumbtacks. How can you affix a candle to the wall and light it so the wax won’t drip onto the table below?

Source: American Psychological Association, Copyright © 1996

Solution:

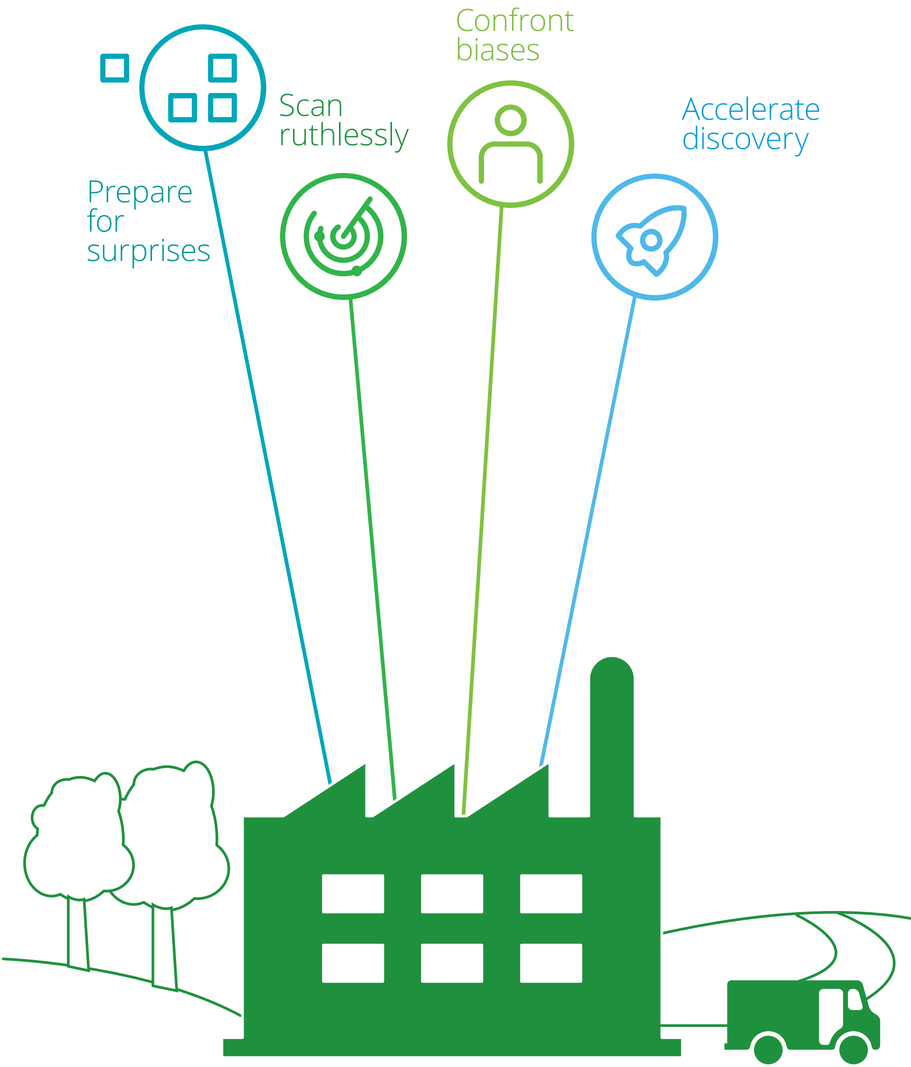
The solution requires thinking outside the box and using the objects provided in unexpected ways. What lessons can manufacturers learn from this process? With disruptions coming at a faster pace, getting mired into one way of thinking can be a direct route to extinction. Yet many problems can be solved simply by using the resources at your disposal. Manufacturers may need to innovate more across their extended enterprise in their current and evolving ecosystems to solve problems in the future.

Finding success along the road less traveled: A plan to recognize and address strategic risk

Traditionally, manufacturing companies have been perceived as conservative and resistant to change. Yet manufacturing has a history of evolving to take advantage of developing technologies and rising to meet market needs. That's a history manufacturers should draw upon, as becoming more open and adaptable will be essential to survival.

What can manufacturing companies do to succeed in today's highly competitive world of continuous innovation? For starters, develop a strategic risk management approach to address and confront unexpected change and stay a step ahead of the competition. Organizations must be able to quantify and understand their risks. This will allow them to avoid losses and negative events. It will also help them seize opportunities by taking advantage of an appropriate amount of risk.

What smart companies will do



Optimizing strategic risk

Addressing strategic risk head on delivers value by helping to increase revenues, decrease expenses, gain efficiencies, lower costs, boost returns, avoid downsides, and capitalize on potential upsides. Forward-thinking companies develop strategic risk plans and approaches that include a process for identifying, assessing, monitoring, and responding to potential risks. Here’s how the process might look:

Identify significant risks. Identify the top risks to the corporate strategy, as well as the shortcoming of the strategy itself. Once identified, those risks are incorporated into the business strategy and planning processes.

Assess risk exposure. Prioritize risk based on its impact to strategy and the organization, considering the nature of vulnerability and preparedness to respond to a risk event.

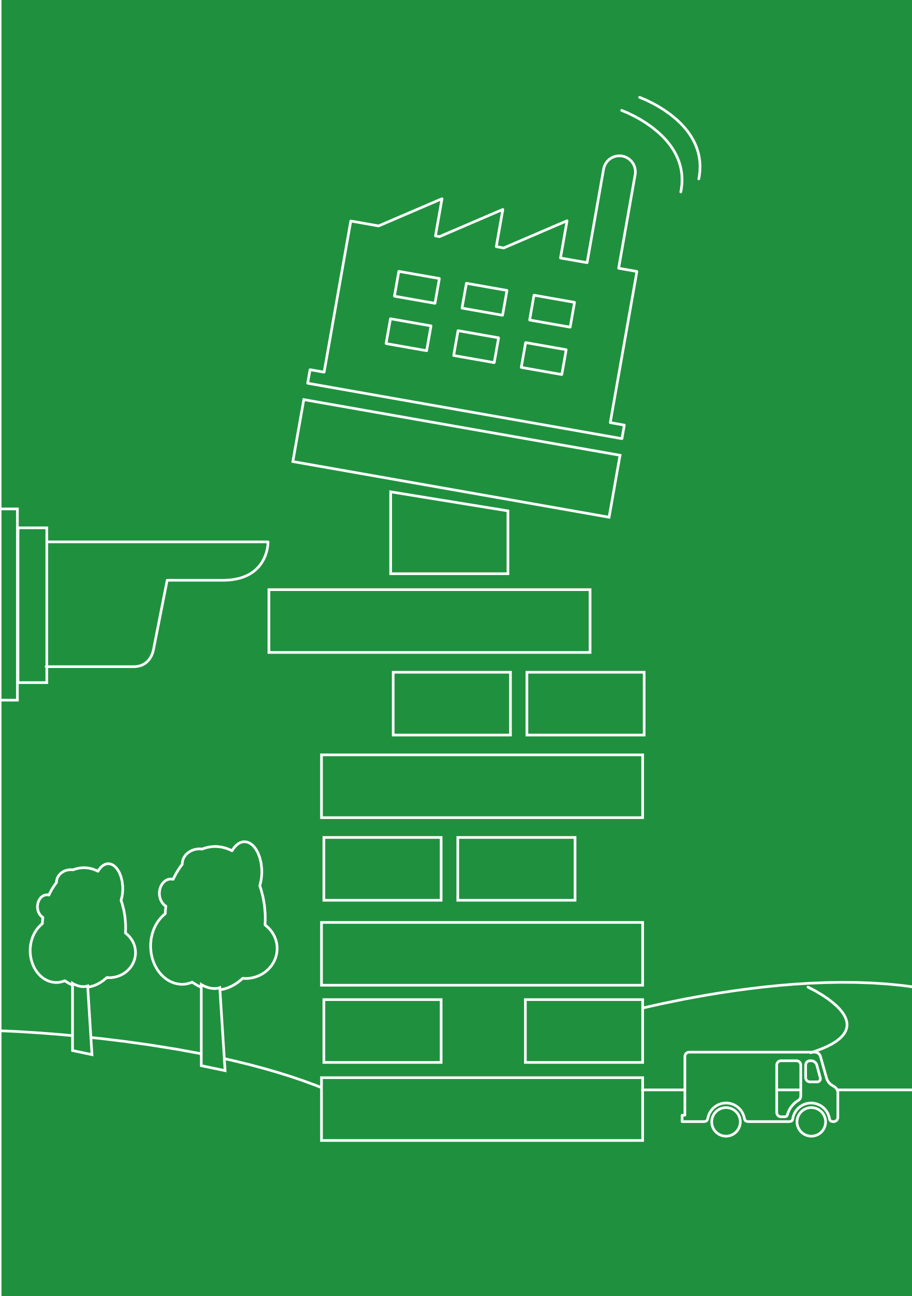
Design the risk response. How will the organization respond to prioritized risks based on the gap between risk exposure and appetite? Develop a deployment roadmap that takes these factors into consideration.

Deploy the appropriate strategy. As strategic risk events occur, execute the planned risk mitigation tactics and event responses.

Monitor and report. Develop a plan to continuously monitor and report, including sensing and predicting emerging risks.

Companies face a variety of challenges: rapidly evolving technology, expanding markets, closer connections to customers, regulatory and political concerns, and more. They can be better prepared for these challenges if they understand how to make decisions appropriately and anticipate the changes to come.

The future is full of unknowns. And the path ahead is uncertain. Being armed with a strategy for managing strategic risk can allow the organization to address it confidently.

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SECRETS

Seven secrets to effectively addressing strategic risk

1. **Keep an eye out for new and emerging risk.** Risk management is a dynamic process. Therefore, managers must monitor, escalate, and respond to known and emerging risks on an ongoing basis so the company can be selective about the risks it chooses to take.

2. **Align with the strategic planning process.** Identify the top risks to achieving key strategies and assess the potential impact.

3. **Know the limits of historical data.** Risk management usually relies on extrapolating from the past to identify future risk. But that approach only works when historical data provides a good approximation of the future. The biggest value killers often have little historical precedent.

4. **Confront cognitive and institutional biases.** No matter how objective, no one is immune to having pre-established biases. Failing to consider this fact can cause even the best system to fail.

5. **Align risk and strategy.** Risk management and those who are ultimately responsible for making decisions should communicate and collaborate.

6. **Assign accountability.** Create a risk governance committee or assign accountable owners for strategic risks and constantly monitor the environment.

7. **Consider an outside perspective.** Organizations benefit by learning from others with different experiences and perspectives. And by taking an outside-in look at any situation.

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Acknowledgements: Deloitte Advisory would like to thank Charles Alsdorf , Ashok Jain, Charan Singh, Tatyana Kuprienko, and Terrence Karner for their contributions to this perspective.