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***Technology  
Trends 2018–19***

**&**

**Address the risks  
and disruptive  
potential of  
products and  
services**

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# Introduction

At first glance, the technology industry seems to be having a great year. The big five in the U.S. — Alphabet, Amazon, Apple, Facebook, and Microsoft — have recorded impressive revenue figures, earnings gains, and stock market valuations. Their Chinese counterparts, notably Alibaba, Huawei, and Tencent, are doing almost as well, leveraging their market leadership in China to aggressively build market share internationally. Startups in both countries continue to grow into unicorns, going public in significant numbers. It's easy to argue that the success technology companies enjoy today is well deserved, given the growing power and importance of the advances that the industry is deploying — the Internet of Things (IoT) and edge computing, the cloud, advanced data analytics, artificial intelligence (AI), and machine learning — and the practical ways they can be applied, including in autonomous vehicles (AVs), advanced supply chains, e-commerce, industrial manufacturing, and so many others.

But the risks and disruptive potential of technology may, for the first time in its history, be outrunning the industry's ability to manage them. Government leaders, regulators, the media, customers, and even investors increasingly hold tech companies accountable for the unintended consequences of their products. Serious efforts are under way to regulate privacy and antitrust issues — for example, the European Union's General Data Protection Regulation (GDPR), governing how private data can be collected and exploited, took effect in May 2018. In the U.S., powerful institutional investors have been pressing companies to take greater responsibility for the social consequences of their activities and products. BlackRock chairman Larry Fink, in the January 2018 edition of his [annual letter](#) to CEOs, suggested that if companies want BlackRock's continued support, they must consider issues such as slow wage growth, climate change, and automation, as well as growth and profitability, as part of their strategies. The investor consulting firm Jana is teaming with the California State Teachers' Retirement System to launch an investment fund that rewards companies that act responsibly. Their initial [joint public relations campaign](#) proposed that Apple help fight smartphone addiction among children. It may be a harbinger of broader change that,

with the mid-2018 announcement of its forthcoming Screen Time tool, Apple is directly addressing the concerns raised by this campaign.

It's as if the whole industry has been asked to mature at once. It can realize its full market potential only by acknowledging the risks its products and services present to the industry and to the world in which they operate. It can thrive only by offering solutions, whether rooted in technology or not, to manage and limit those risks, while still enabling the connections and opportunities that people have gained from their devices.

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# *Managing technological disruption*

In our view, many companies' risk management practices are not fully up to the task of dealing with these challenges. The industry needs to go further: to develop comprehensive strategies that cover not just the short-term business risks every company faces, but also longer-term societal risks uniquely posed by technology. Currently, the top leadership of this industry (as indicated by our annual survey of CEOs around the world) is less concerned about external threats than leaders of business generally. (The one exception is terrorism, which concerns all CEOs equally.) Although the optimal strategy will vary from one company to the next, the overall framework for managing technological disruption should include the following six key elements.

## **1. Address problems before they become visible to others.**

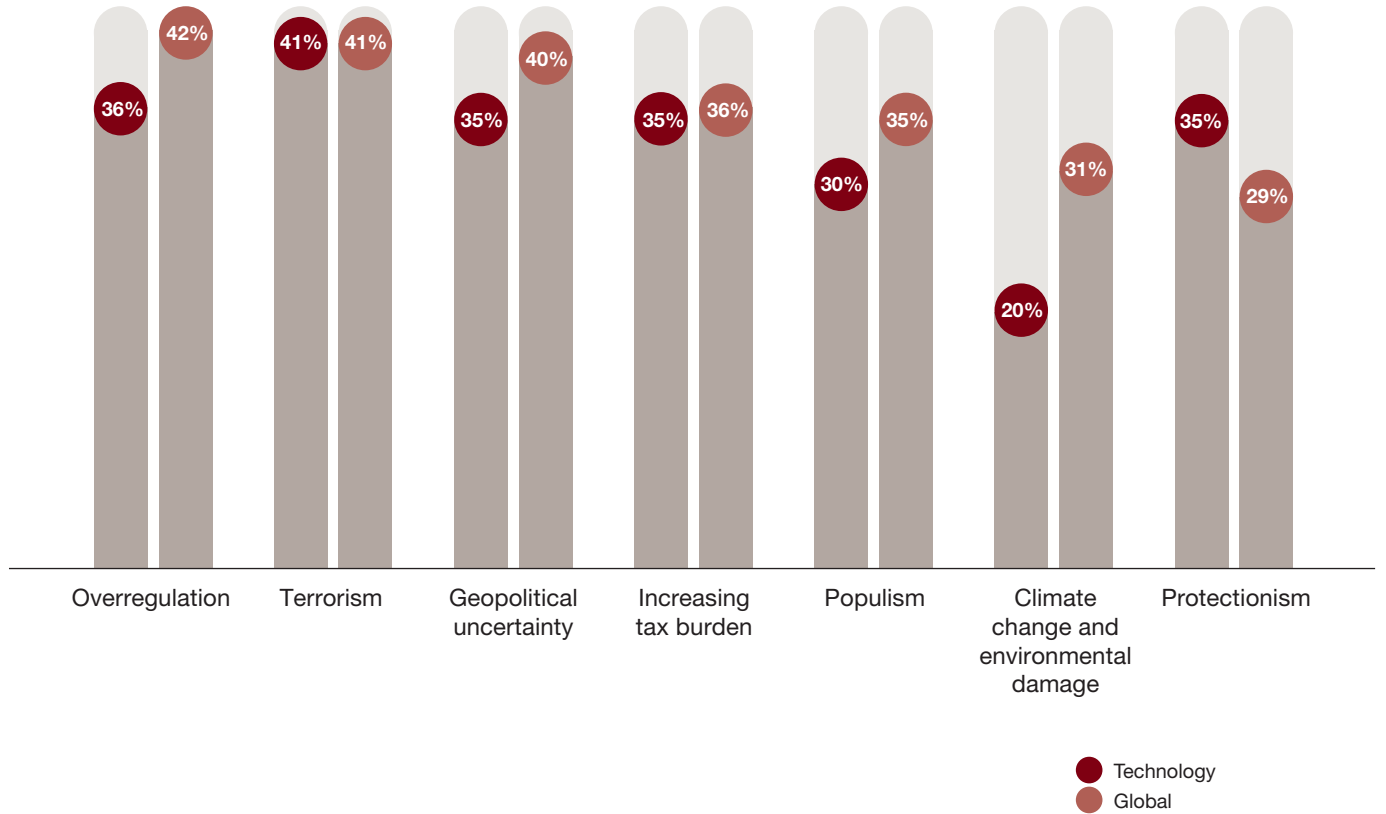
Historically, technology companies have been content to react when problems, concerns, and major incidents involving their products and services become public. That approach no longer works; today, being proactive matters. Companies must consider the potential consequences of their technologies as they are developing them and bringing them to market. They must build in the high levels of security and transparency that will promote trust among their future customers and other stakeholders. They must embed integrity into their business models and practices, too — how they bring their products to market, how they capture value, how they treat intellectual property, how they hire. In all these ways, they can anticipate and manage the risks and consequences of their technologies before problems arise.

Preventing and managing adverse consequences can't simply be a matter of creating clever public relations strategies for rescuing reputations, or even crafting technological solutions to specific issues. The best place to start is in a company's culture. In many high-tech companies (and companies in other industries, like financial services and energy), the riskiest practices are associated with hard-charging, arrogant attitudes baked into their ways of doing business. Companies are realizing that it is time to change. By rethinking hiring practices, preventing sexual harassment, and reducing other contentious and risky ways of doing business, they can start to foster a culture of openness

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## Concerns expressed by tech CEOs compared to CEOs of all sectors

Respondents who stated they are “extremely concerned” about the following threats to their organization’s growth prospects



Base: Technology respondents.

Source: PwC, 21st CEO Survey

and transparency — encouraging people to speak up when problems arise, and dealing with those problems fairly and publicly. This type of proactivity in the workforce leads to proactivity in the world at large.

**2. Reflect and improve with agility.** Because of the speed at which digital technologies can force change, the overall business environment moves far more quickly today than it had in the past. In this atmosphere, leaders don't perceive that they have the time to be responsible — or to build trust and properly manage risk. Get the technology right, they feel, and the “soft stuff,” including the tasks of managing people and developing the enterprise, will take care of itself.

The remedy is not for technology companies to slow down, but rather to spread their fast-moving, agile culture beyond the R&D-to-market silo. Technology companies must learn to adopt broader perspectives and hold themselves accountable in the same way that they have learned to rapidly plan and continuously improve their products. They must respond rapidly to internal problems, correct the mishaps and unintended consequences of their efforts, and pay more conscious attention to the well-being of their employees, customers, and other stakeholders.

In short, tech companies must learn to reflect — at Internet speed. When the organization appears to be moving toward ethical or operational risks, company leaders need to be prepared to make changes fast. These changes could mean revamping operations, spinning off businesses, setting up sprints to solve potential reputational issues, or even relocating the company's geographic footprint. These measures should never be carried without first asking whether they will actually make things better for employees, customers, and the world at large. When outsiders criticize the company, what part of the criticism is worth considering? And what type of response would make a genuine difference? By design, all of this deliberation should happen with the same intensive conversation and collaboration that contributes to rapid software development.

**3. Rethink incentives to promote responsibility.** The technology industry has always appreciated risk. A great deal of technological innovation is a gamble by its very nature, and the large majority of startup technology companies fail. Many tech companies reward employees who can learn from failure, even if it also means being willing to smash through conventional practices or old business models.

This approach has made the industry dynamic, but it has also contributed to two unintended consequences. First, it promotes the willingness to release hardware and software that simply isn't ready for the marketplace. Examples abound of software that doesn't function as

*Technology companies must learn to adopt broader perspectives and hold themselves accountable in the same way that they have learned to rapidly plan and continuously improve their products.*

promised or contains pernicious hidden features. Second, it leads companies to develop noxious, hypercompetitive cultures, in which aggression is valued for its own sake.

In reality, the high valuation placed on many tech companies does not derive from their taking risks or breaking convention. Rather, they become unicorns when investors recognize the potential upside in their innovations — the likelihood that consumers and enterprises will adopt their products and services en masse. Companies that want to realize that potential upside need to focus not on risky creative leaps but on long-term creative innovation in the context of larger expectations and needs.

For example, if a company's senior executives knew that they would forfeit their stock grants if their efforts led to a measurable breach of trust in their platform, they would no doubt pay significantly more attention to the issue. The same is true for an innovation team that releases a product to a larger population, even though it's not quite ready. The goal of new incentives is not to encumber innovation or slow the release of new products but to be more responsible in managing the risks.

**4. Work with regulators, not against them.** Many technology companies have held themselves aloof from regulatory concerns. They've devised business models, developed their offerings, and brought them to market without much concern about social, economic, or legal consequences. In fact, the business model sometimes depended on being able to outflank or outmaneuver outdated regulatory constraints. As the saying goes, it was better to ask for forgiveness than permission.

This is no longer an effective way to operate — not just because regulators are getting more effective, but because customers like some constraints. Constraints keep them from being threatened.

Consider the global flurry of activity surrounding the development of autonomous vehicles. Engaged in a veritable arms race to devise a winning formula, companies of all kinds — automakers and suppliers, ride-sharing firms, mapping companies, as well as technology companies — are working separately or banding together to perfect the many technologies a safe and reliable AV will need. But when regulators give them free rein to experiment on public highways, the metaphorical guardrails aren't strong enough. It's left to insurance companies and the legal profession to try to sort out potential consequences.

For their part, regulators have consistently struggled to keep abreast of technological change. When they fall behind, they become more



desperate to manage the consequences of technology, and they may implement regulations and enact laws that seriously affect the ability of the technology industry to innovate further. This has happened before: In the U.S., the 1956 consent decree between the government and AT&T prohibited telephone companies from entering the computer business, stifling a major avenue of growth.

Technology companies have an opportunity to work with regulators to create the kinds of guardrails that will reduce risks without constraining innovation. To accomplish this, the most forward-looking industry leaders will:

- Consider potential regulatory reactions to any major action. Don't curtail the action, but seek to understand regulators' legitimate concerns, and think about why those concerns exist.
- Devise potential solutions for the regulatory and reputational issues that a new technology might engender. This could include developing technological tools to aid in the enforcement of regulations.
- Work with regulators from the outset to educate them on new technologies and highlight the benefits to society at large.
- Collaborate with regulators on the development of rational, fair regulatory plans that take into account the potential for disruption while ensuring a path for innovation and growth.
- Form partnerships with other firms to work together with regulators. This would allow a broader range of insights to be heard from within the industry, and avoid the appearance of self-interest on the part of a single company trying to influence the regulatory environment by itself.

**5. Build common standards openly and collaboratively.** Given just how pervasive technology has become, and how fully embedded it is in peoples' daily lives, the technology industry must come together to set and follow common standards that go beyond those mandated by the laws of the land. This applies not just to arcane technical issues, but to matters of security, privacy, and the law, as well.

The example of autonomous vehicles is telling. Currently, companies are trying a myriad of innovative techniques to overcome the many challenges inherent in AV technology. This effort is no surprise, considering just how big a prize the winners will attain. But as proprietary standards for sensors and connected cars compete, choosing one system over another too early runs the risk of stifling ideas that

might have proven a better option. Many companies will no doubt be uncomfortable with the idea of pooling their trade secrets and intellectual property in pursuit of the greater good. But the consequences of battling over standards — leading to incompatible vehicle-to-vehicle communications systems, conflicting mapping software, confusing road signage, and the like — could be dire.

**6. Seek competitive advantage through integrity.** Technological risk has long been with us. Now, as technology becomes more fully integrated into daily business operations and personal lives, in ways most people don't fully understand, the risks are increasing on multiple fronts. And there appears to be a mounting backlash against the potentially pernicious effects of new, more pervasive technologies, and the business practices of the companies that develop and sell them.

This is an opportunity for differentiation: for building a brand as the company that is not just well-intentioned, but competent enough to realize those intentions. In other words, there is considerable value to be gained simply by positioning oneself as a technologically and socially responsible company that can be trusted to do the right thing.

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# *Conclusion*

A well-intentioned company can still be relentless in its approach to quality and attractiveness to customers. Those attributes are compatible with trustworthiness and transparency, especially if the company is upfront about the risks it might pose. These companies can incorporate into their products and services the technological means to help customers reduce their own risk as they use them. Such technologies will likely be met with considerable approval, not just from customers, but from investors, regulators, and the media, as well.

To become this sort of tech company, it may take a different type of transformation program, fostering culture change, a strong sense of integrity, and a holistic view of how the company operates. Companies that can't accomplish this change have much to lose: less control over their technologies, far greater oversight of their activities and business practices, and limits placed on growth. Those who can muster the necessary transparency, thoughtfulness, and trustworthiness have much to gain: a platform that attracts others because it represents the kind of tech company they want to keep.

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