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sloanreview.mit.edu
WINTER 2022 • VOL. 63 • NO. 2

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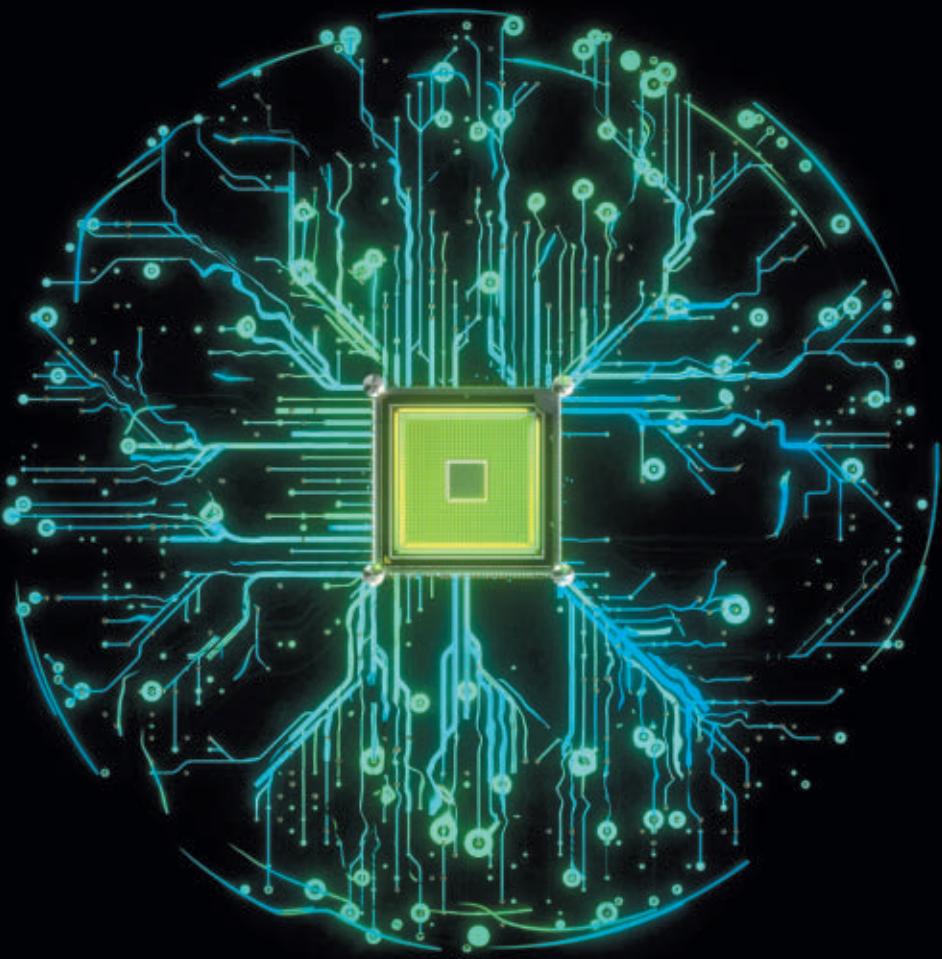
Management Review

INNOVATION MANAGEMENT

Improving Outcomes
From Ideation Through
Implementation

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Pilot
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Game Changers

D

o you know who the innovators are in your organization? These aren't just the creative product designers or the strategists devising new business models. They are also the people who make an end run around established processes, who lobby to do things differently, who proactively make connections across silos and build informal networks to get things done.

Most of them aren't in the C-suite. In fact, in researching the impact of organizational networks on cultural change, Peter Gray, Rob Cross, and Michael Arena found that the top 50 informal influencers at one organization had network ties with nearly twice as many employees

as the top 50 senior leaders. Identifying and making allies of these game changers can help leaders who are finding it difficult to drive innovation in operations, the authors tell us.

Indeed, if you aim to foster a creative, problem-solving culture, it's as important to find and eliminate obstacles to risky new ideas as it is to recognize your under-the-radar innovators. Ironically, some of the biggest obstacles to innovation can be the executives charged with supporting it, according to Thorsten Grohsjean, Linus Dahlander, Ammon Salter, and Paola Criscuolo. Their research into conventional processes for evaluating internal innovators' pitches for funding found that expert panels often make biased decisions that favor "safer" ideas. They suggest changing that game — and increasing the likelihood that great ideas won't get away — by bringing many more voices and perspectives into the process.

There's also room to break rules in the act of innovation itself: Like any organizational practice, innovation plays out according to established ways of doing things. Hila Lifshitz-Assaf and Sarah Lebovitz write about some unexpected game changers who surfaced during a research study that centered on a time-limited innovation challenge.

Some of the self-organizing teams ignored the usual sequence of ideating, narrowing focus, then prototyping, and instead used the available tools in new ways. Their process was messier, but they succeeded at the challenge where others failed.

It's likely that in the surge of resignations upending the labor market in the U.S., some of your would-be change agents have already resolved to change the game on their own terms and walked out the door. If you take the view that innovation is rooted in an unwillingness to accept that what *is* is good enough, then the "Great Resignation" highlights an enormous opportunity for leaders to create new ways of working that meet employees' needs for purpose, balance, and good wages. In this issue, we explore these ideas and others for keeping your organization at the forefront of innovation — and not just meeting challenges but reimagining them.

Elizabeth Heichler // @eheichler
Executive Editor
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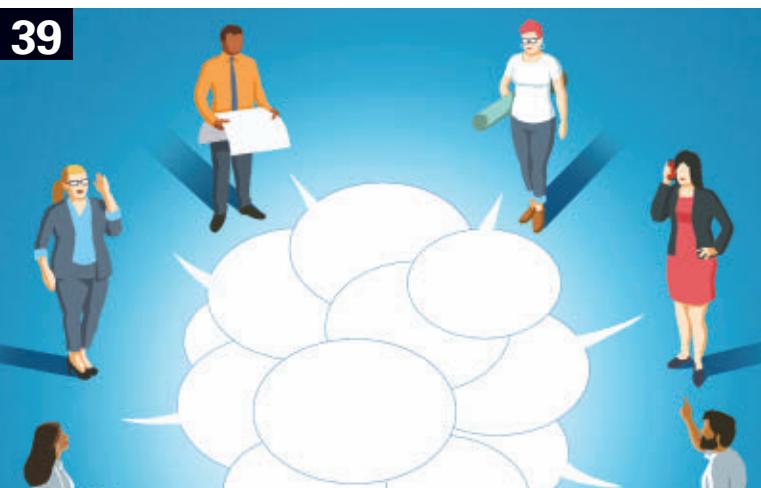
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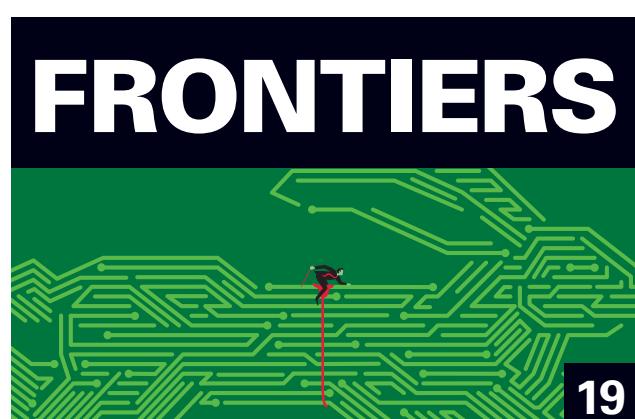
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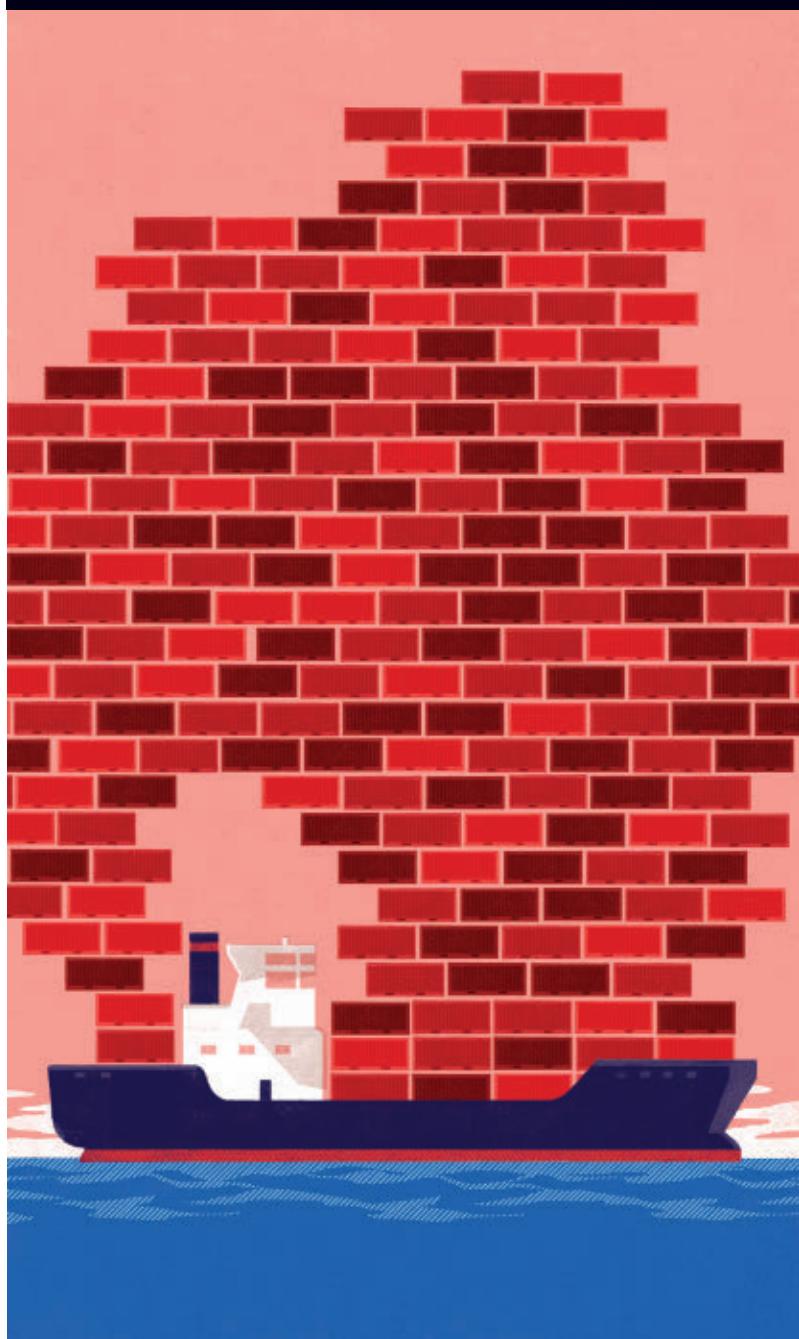
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[SUPPLY CHAIN]

What Everyone Gets Wrong About the Never-Ending COVID-19 Supply Chain Crisis

Spoiler alert: Just-in-time inventory management was never the problem.

BY YOSSI SHEFFI

The ongoing global supply chain crisis caused by the COVID-19 pandemic shows no sign of abating. Widespread product shortages are focusing attention on supply chain issues as never before—and while this publicity has shed some light on the problem, it has also spawned (misguided) calls to end the practice of just-in-time inventory management.

Multiple factors have led to the current situation, but they spring from two overarching causes: suppliers' inability to adjust to soaring demand, and government interventions. In order to develop solutions to pandemic-induced product shortages, we need a better understanding of how these issues have played out since early 2020 and resulted in a worldwide logistics logjam.

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The Pandemic Effect

As the pandemic took hold in March 2020, consumer demand patterns shifted abruptly. A shift to working from home, along with school closures, fueled increased demand for larger houses, home gadgets, computer and communications gear, furniture, toys, and recreational equipment. Such a dramatic shift would have strained manufacturing in the best of times. During the pandemic, manufacturers could not adjust in time to bridge gaps between supply and demand as they dealt with ongoing labor and material shortages, intermittent plant closures, and shipping delays.

Typically, short-lived supply crunches dissipate quickly as rising prices suppress demand and increased supply restores market equilibrium. But contrary to what standard economic theory about reaching supply-demand equilibrium suggests, prices have risen throughout the economy—in many cases substantially—while shortages have persisted.

Consider, for example, freight transportation. Early in the pandemic, transportation systems were strained by restrictions on air travel and quarantine requirements on vessel crews and interstate truck drivers. As Western countries swung back to higher levels of economic activity, ports could not process the increased shipping volumes. The entire transportation and distribution system was not built to add capacity at the rate the flow was growing, and labor shortages exacerbated the problem. The result was long delays, with ships anchored for weeks outside major ports—and a consequent shortage of maritime containers that were stuck on waiting vessels and could not be reloaded and shipped.

Shipping costs skyrocketed: The cost to ship a container from Asia to the United States' East Coast climbed from

around \$1,400 per container to around \$20,000. Many importers of bulky, relatively low-value (per weight) commodities, such as wooden furniture, could not raise prices enough to avoid losses and consequently stopped placing orders.¹ However, many other importers hiked prices for their goods; as long as consumers were willing and able to pay, the market stabilized at higher prices. However, new COVID-19 outbreaks may lead to continued shortages and could drive prices even higher in the future.

Manufacturers Caught in the Squeeze

A prime example of the pandemic's long-lasting disruptive effects are the difficulties facing automotive manufacturers, which are collectively expected to lose some \$110 billion in revenue as a result of the continuing shortage of microchips.²

As the pandemic gripped the world in 2020, car sales plummeted, and automobile manufacturers cut production along with semiconductor orders. Meanwhile, demand surged for personal computers, TVs, and game consoles; new 5G smartphones were rolled out, and cloud computing grew substantially. Technology companies absorbed all the capacity the chipmakers had, and the chipmakers were happy to oblige.

When the economy roared back and consumers returned to dealer showrooms, carmakers and their parts suppliers found that chipmakers had little capacity available for them. By the end of March

2021, chip shortages forced Ford to reduce production significantly at six plants in North America and to cut it even further in June. Earlier in the year, the company said it expected to lose 50% of its vehicle production in the second quarter of 2021; in September, it said it would again cut truck production due to chip shortages.³

Demand for new cars soared in 2021: American consumers were forecast to purchase more than 7 million new vehicles during the first six months of the year—which would be the best first half of any year on record, according to J.D. Power.⁴ Prices increased due to higher material costs and dealers opportunistically adding surcharges. As a result, many consumers shifted to buying used cars, driving those prices through the roof as well.⁵ Despite already high prices, product shortages persisted, and prices continued to rise as a result of the chip shortages.

Making the Situation Worse

Many companies, like consumers, have engaged in buying behavior that can prolong shortages and cause the prices of parts and materials to skyrocket.

Consumers, spurred by media-driven fears of a toilet paper shortage, created one through their panicked overbuying. But consumers weren't the only hoarders. Many companies began ordering extra parts and materials, fearing that suppliers might ration future orders. So, to be first in line when normal business resumed, some companies ordered much more

Contrary to what standard economic theory about reaching supply-demand equilibrium suggests, prices have risen throughout the economy while shortages have persisted.

As business leaders search for solutions, it is critically important that they do not allow themselves to be swayed by false narratives — especially concerning just-in-time practices.

than they needed, even though suppliers could not meet their demands. Although suppliers understood this game of “phantom orders,” they were committed to delivering what customers asked for. Manufacturers that ordered too much inventory from their suppliers were protected by supply contracts that allowed industrial customers to return all unused parts for a refund. Some suppliers that tried to reason with their customers were met with threats of lawsuits. This over-ordering exacerbated shortages — just like hoarding at the consumer level. The practice also led suppliers to question the demand data, because they believed that the ordering spree could not continue and were therefore reluctant to invest in new capacity.

Government’s Disruptive Influence

As I have discussed, current product shortages stem from multiple factors related to shifts in demand coupled with companies’ inability to increase supplies quickly. But the situation was exacerbated by certain government policies.

In the U.S., the government poured trillions of dollars into the economy in order to help people who lost their jobs or were otherwise in financial distress during the pandemic. These benefits included enhanced unemployment assistance, child tax credits, and expanded food stamp benefits. Government largesse, however, was not precisely targeted and ended up fueling many purchases, leading to a huge increase

in demand for many specific goods.

Action taken by the U.S. Federal Reserve also added to the amount of spendable cash driving up demand. It cut its target for the federal fund rate in March 2020 to a range of zero to 0.25%. (It stood at 0.09% as of September 2021.) And the Fed directly encouraged banks to lend by both lowering the rate it charges banks and relaxing regulatory requirements regarding capital buffers.

In a tacit admission of the government’s role in the shortages, Federal Reserve chairman Jerome Powell said on June 16, 2021, “It turns out it’s a heck of a lot easier to create demand than it is to — you know — bring supply back up to snuff.”⁶ The shortages could result in continued inflation, and, again, the Fed chairman noted that “inflation could turn out to be higher and more persistent than we expected.”⁷

The combination of surging COVID-19 cases around the world and increasing demand will make the shortages hampering companies last longer than previous recoveries, thereby preventing the market from reaching equilibrium (even at high prices) anytime soon.

Why Just-in-Time Is Just Not at Fault

As business leaders search for solutions to these issues, it is critically important that they do not allow themselves to be swayed by false narratives — especially those concerning just-in-time (JIT) practices.

Many media outlets have blamed the

pandemic shortages on companies’ use of the JIT system of minimizing inventories. A typical article in *The New York Times* argued that companies chose JIT to cut costs, and claimed that the savings “helped finance another shareholder-enriching trend — the growth of share buybacks.”⁸ This line of reasoning, and attendant calls to build more inventory, are misguided for three main reasons:

1. The rationale for JIT is not cost reductions — it is to make products with far fewer defects. The principle of JIT is to limit inventory in each stage of production; it is achieved by pulling only as many parts or as much material as needed for the next batch of products from one production stage to the next, just in time. Defective parts and other problems with parts or process are identified and corrected quickly, thereby iteratively improving not only the finished product but the process as well. The system did help JIT’s inventor, Toyota, save money, but the primary aim was to avoid wasted scrap, rework, and warranty claims rather than to reduce the modest costs of holding inventories. Thus, JIT is a story of boosting quality and customer satisfaction rather than a story of penny-pinching.

2. JIT has knock-on benefits because it also enables flexibility. If either demand or supply fluctuates, a JIT system can adjust subsequent production activities on the fly because there is less pre-committed inventory in the system. The repeated deliveries of precisely the right parts at just the right time require tight connections between suppliers, manufacturers, and customers. The result is a process that allows for fast adjustment to changing market conditions, making the company far more adaptive. JIT creates resilience — not fragility.

3. In contrast, deep inventories become a financial liability and environmental waste if demand for a

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product slumps. This is especially true for technology, fashion, and perishable products that rapidly lose value and salability over time. For example, inventories of dress slacks could not help meet higher demand for sweatpants when people switched to working from home.

Abandoning JIT would do little to help current supply chain problems. Companies do keep significant amounts of inventory, even with JIT. However, such so-called safety stock helps insulate a company only from short-term fluctuations. Most natural disasters create temporary, localized disruptions that companies resolve quickly by using minimal inventory, switching suppliers, changing formulations, and so forth. The pandemic, however, is not a quick-hit disaster; in the face of global, persistent parts shortages, keeping extra inventory on hand doesn't prevent production problems — it simply delays the inevitable reckoning with them. And when consumer preferences shift, extra inventory won't help correct a persistent mismatch between production and demand.

Toyota itself exemplifies this problem of the limits of safety stock. Following the triple disaster of an earthquake, a tsunami, and a nuclear reactor meltdown in Fukushima in March 2011, the company reviewed its vulnerabilities. It found that the automotive industry's supply of semiconductors was limited because vehicles largely depended on simpler chips of older designs made in older chip factories that were not receiving continuous investment. Furthermore, building new fabrication plants requires long time horizons and large investments. As a result, Toyota and its suppliers built safety stocks of chips. During the first half of 2021, while most automobile manufacturers were announcing significant production cuts and plant closures, Toyota factories

kept humming along at close to full capacity, using their inventory of chips.⁹ In fact, during the second quarter of 2021, Toyota took the top position in the U.S. for the number of vehicles sold, for the first time ever. However, in September 2021, the company had to reduce its worldwide output by 40% as a result of the continuing chip shortage.¹⁰

How Long Will It Last?

As this article is being written, product flows are cresting seasonally in the lead-up to the 2021 year-end holidays. Thus, no relief should be expected by year's end. Without further government interventions, the market will likely have solved the imbalances toward the second quarter of 2022. While the delta coronavirus variant is likely to continue wreaking havoc on plant capacity around the world — especially in Southeast Asia — prices may remain high while shortages abate, and as high prices temper demand, market equilibrium should return.

By the second quarter of 2022, manufacturers and their suppliers may reach a better understanding of actual demand and inventory constraints, minimizing phantom orders. Suppliers may also have time to invest in expanded capacity in those segments where they expect demand to stay high.

However, another injection of government money — as much as it may be justified — could upend these projections and lead to even worse shortages in 2022–2023. Many other factors could come into play too. A new coronavirus variant might cause another round of school closings and prevent parents from working, which could spur plant closures and transportation restrictions. Such an outcome could trigger another round of shortages.

Clearly, we are not out of the product-shortage woods yet, but as companies continue to navigate their way through the crisis, they are learning much about

the vulnerabilities of their supply chains. They are also investing more than ever in supply chain technology and improved processes — investments that are likely to bear fruit whenever the inevitable disruptions and unexpected turmoil hit next.

Yossi Sheffi (@yossisheffi) is the Elisha Gray II Professor of Engineering Systems at MIT, director of the MIT Center for Transportation and Logistics, and the author of *The New (Ab)normal: Reshaping Business and Supply Chain Strategy Beyond COVID-19* (MIT CTL Media, 2020). Comment on this article at <https://sloanreview.mit.edu/x/63213>.

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[DATA ASSETS]

The Real Deal About Synthetic Data

It's often difficult to access the real-world data needed to train AI models or gain insights, but new techniques for generating look-alike data sets can help.

BY FERNANDO LUCINI



Data is the essential fuel driving organizations' advanced analytics and machine learning initiatives, but between privacy concerns and process issues, it's not always easy for researchers to get their hands on what they need. A promising new avenue to explore is synthetic data, which can be shared and used in ways real-world data can't. However, this emerging approach isn't without risks or drawbacks, and it's essential that organizations carefully explore where and how they invest their resources.

What Is Synthetic Data?

Synthetic data is artificially generated by an AI algorithm that has been trained on a real data set. It has the same predictive power as the original data but replaces it rather than disguising or modifying it. The goal is to reproduce the statistical properties and patterns of an existing data set by modeling its probability distribution and sampling it out. The algorithm essentially creates new data that has all of the same characteristics of the original data — leading to the same answers. However, crucially, it's virtually impossible to reconstruct the original data (think personally identifiable information) from either the algorithm or the synthetic data it has created.

Synthetic data is a boon for researchers. Consider what the National Institutes of Health in the U.S. is doing with Syntegra, an IT services startup. Syntegra is using its

synthetic data engine to generate and validate a nonidentifiable replica of the NIH's database of COVID-19 patient records, which comprises more than 2.7 million screened individuals and more than 413,000 COVID-19-positive patients. The synthetic data set, which precisely duplicates the original data set's statistical properties but with no links to the original information, can be shared and used by researchers across the globe to learn more about the disease and accelerate progress in treatments and vaccines.

The technology has potential across a range of industries. In financial services, where restrictions around data usage and customer privacy are particularly limiting, companies are starting to use synthetic data to help them identify and eliminate bias in how they treat customers — without contravening data privacy regulations. And retailers are seeing the potential for new revenue streams derived from selling synthetic data on customers' purchasing behavior without revealing personal information.

The Value for Business: Security, Speed, and Scale

Synthetic data's most obvious benefit is that it eliminates the risk of exposing critical data and compromising the privacy and security of companies and customers.

The Real Deal About Synthetic Data (Continued from page 11)

Techniques such as encryption, anonymization, and advanced privacy preservation (for example, homomorphic encryption or secure multiparty computation) focus on protecting the original data and the information the data contains that could be traced back to an individual. But as long as the original data is in play, there's always a risk of compromising or exposing it in some way.

By eliminating the time-consuming roadblocks of privacy and security protocols, synthetic data also allows organizations to gain access to data more quickly. Consider one financial institution that had a cache of rich data that could

the results they're getting at the different stages of model development — and that means getting to market more quickly with new products and services.

Security and speed also enable scale, enlarging the amount of data available for analysis. While companies can currently purchase third-party data, it's often prohibitively expensive. Buying synthetic data sets from third parties should make it easy and inexpensive for companies to bring more data to bear on the problem they're trying to solve and get more-accurate answers.

For example, every bank has obligations to identify and eliminate fraud. That's a solitary and resource-intensive

and metrics that enable it to validate that it created what it set out to create. This is where things become especially difficult.

Evaluating synthetic data is complicated by the many different potential use cases. Specific types of synthetic data are necessary for different tasks (such as prediction or statistical analysis), and those come with different performance metrics, requirements, and privacy constraints. Furthermore, different data modalities dictate their own unique requirements and challenges.

A simple example: Let's say you're evaluating data that includes a date and a place. These two discrete variables operate in different ways and require different metrics to track them. Now imagine data that includes hundreds of different variables, all of which need to be assessed with very specific metrics, and you can begin to see the extent of the complexity and challenge. We are just in the beginning stages of creating the tools, frameworks, and metrics needed to assess and "guarantee" the accuracy of synthetic data. Getting to an industrialized, repeatable approach is critical to creating accurate synthetic data via a standard process that's accepted — and trusted — by everyone.

Also holding back the concept of synthetic data is the cultural resistance it meets at many companies: "It won't work in our company." "I don't trust it — it doesn't sound secure." "The regulators will never go for it." Educating C-suite executives, as well as risk and legal teams, and convincing them that synthetic data works will be critical to adoption.

What Could Go Wrong?

Proving the veracity of synthetic data is a critical point. The team working on the effort must be able to demonstrate that the artificial data it created truly represents the original data — but can't be tied to or expose the original data set in any way. That's really hard to do. If it doesn't

Generating synthetic data is an extremely complex process. An organization needs to do more than just plug in an AI tool — it needs people with specialized skills and advanced knowledge of AI.

help decision makers solve a variety of business problems. The data was so highly protected, gaining access to it was an arduous process, even for purely internal use. In one case, it took six months to get just a small amount of data, and another six months to receive an update. Now that the company is generating synthetic data based on the original data, the team can continuously update and model it and generate ongoing insights into how to improve business performance.

Furthermore, with synthetic data, a company can quickly train machine learning models on large data sets, accelerating the processes of training, testing, and deploying an AI solution. This addresses a real challenge many companies face: the lack of enough data to train a model. Access to a large set of synthetic data gives machine learning engineers and data scientists more confidence in

quest for each bank, because regulators allow a bank to examine only its own data for suspicious activity. If banks pooled their synthetic data sets, they could get a holistic picture of all the people interacting with banks in a particular country, not just their own organization, which would help streamline and speed up the detection process and, ultimately, eliminate more fraud using fewer resources.

Why Isn't Everybody Using It?

While the benefits of synthetic data are compelling, realizing them can be difficult. Generating synthetic data is an extremely complex process, and to do it right, an organization needs to do more than just plug in an AI tool to analyze its data sets. The task requires people with specialized skills and truly advanced knowledge of AI. A company also needs very specific, sophisticated frameworks

match precisely, the synthetic data set isn't truly valid, which opens up a host of potential problems.

For example, let's say you've created a synthetic data set to inform the development of a new product. If the synthetic set doesn't truly represent the original customer data set, it might contain the wrong buying signals regarding what customers are interested in or are inclined to buy. As a result, you could end up spending a lot of money creating a product nobody wants.

Creating incorrect synthetic data also can get a company in hot water with regulators. If the use of such data leads to a compliance or legal issue — such as

out the rest — exposing the entire original data set. Technically, this is extremely difficult to do. But with the right resources, it's not impossible — and, if successful, the implications could be dire.

One potential problem with synthetic data that can result even if the data set was created correctly is bias, which can easily creep into AI models that have been trained on human-created data sets that contain inherent, historical biases. Synthetic data can be used to generate data sets that conform to a pre-agreed definition of fairness. Using this metric as a constraint to an optimizing model, the new data set will not only accurately reflect the

out, it's important that the entire C-suite, as well as the risk and legal teams, fully understand what it is, how it will be used, and how it could benefit the enterprise.

2. Do we have access to the necessary skills? Creating synthetic data is a very complex process, so organizations need to determine whether their data scientists and engineers are capable of learning how to do it. They should consider how often they will create such data, which will influence whether they should spend the time and money building this capability or contract for external expertise as needed.

3. Do we have a clear purpose?

Synthetic data must be generated with a particular purpose in mind, because the intended use affects how it's generated and which of the original data's properties are retained. And if one potential use is to sell it to create a new revenue stream, planning for this potential new business model is key.

4. What's the scale of our ambitions?

Creating synthetic data isn't for the faint of heart. The sheer complexity associated with doing it right — and the potential pitfalls of doing it wrong — means organizations should be sure it will deliver sufficient value in return.

ALTHOUGH SYNTHETIC DATA is still at the cutting edge of data science, more organizations are experimenting with how to get it out of the lab and apply it to real-world business challenges. How this evolution unfolds and the timeline it will follow remain to be seen. But leaders of data-driven organizations should have it on their radar and be ready to consider applying it when the time is right for them.

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If a company doesn't adjust AI models to account for bias and simply copies the pattern of the original, the synthetic data will have all the same biases — and might even amplify those biases.

creating a product that harmed someone or didn't work as advertised — it could mean substantial financial penalties and, possibly, closer scrutiny in the future. Regulators are just beginning to assess how synthetic data is created and measured, not to mention shared, and will undoubtedly have a role to play in guiding this exercise.

A distant, but still real, ramification of improperly created synthetic data is the possibility of what's known as *member inference attacks*. The whole concept of synthetic data is that it's not in any way tied to the original data. But if it isn't created exactly right, malicious actors might be able to find a vulnerability that enables them to trace some data point back to the original data set and infer who a particular person is. The actors can then use this knowledge to continually probe and question the synthetic set and eventually figure

original one but do so in a way that meets that specific definition of fairness. But if a company doesn't make complex adjustments to AI models to account for bias and simply copies the pattern of the original, the synthetic data will have all the same biases — and, in some cases, could even amplify those biases.

What It Takes to Move Forward

With the relevant skills, frameworks, metrics, and technologies maturing, companies will be hearing a lot more about synthetic data in the coming years. As they weigh whether it makes sense for them, companies should consider the following four questions:

1. Do the right people know what we're getting into? Synthetic data is a new and complicated concept for most people. Before any synthetic data program is rolled

[RESPONSIBLE AI]

Why ‘Explicit Uncertainty’ Matters for the Future of Ethical Technology

What if algorithms were built around users’ objectives rather than the company’s end goals?

BY MARK NITZBERG

The biggest concerns over AI today are not about dystopian visions of robot overlords controlling humanity. Instead, they’re about machines turbocharging bad human behavior. Social media algorithms are one of the most prominent examples.

Take YouTube, which over the years has implemented features and recommendation engines geared toward keeping people glued to their screens. As *The New York Times* reported in 2019, many content creators on the far right learned that they could tweak their content offerings to make them more appealing to the algorithm and drive many users to watch progressively more extreme content. YouTube has taken action in response, including efforts to remove hate speech. An independently published study in 2019 claimed that YouTube’s algorithm was doing a good job of discouraging viewers from watching “radicalizing or extremist content.” Still, as recently as July 2021, new research found that YouTube was still sowing division and helping to spread harmful disinformation.

Twitter and Facebook have faced similar controversies. They’ve also taken similar steps to address misinformation and hateful content. But the initial issue remains: The business objective is to keep users on the platform. Some users and content creators will take advantage of these business models to push problematic content.

Algorithms like YouTube’s recommendation engine are programmed with an end goal: engagement. Here, machine learning adapts and optimizes based on user behavior to accomplish that goal. If certain content spurs higher engagement, the algorithm may naturally recommend that same content to other people, all in service of that goal.

This can have far-ranging effects for society. As Sen. Chris Coons of Delaware put it in April 2021 when executives from YouTube, Facebook, and Twitter were testifying before Congress, “These algorithms are amplifying misinformation, feeding political polarization, and making us more distracted and isolated.”

To address this issue, companies and leaders must consider the ethical implications of technology-driven business models. In the example of social media, how differently might an algorithm work if it instead had no end goal?



Avoiding Fixed Objectives

In a report for the Center for Human-Compatible AI, we call for a new model for AI. It’s built around what may seem like a radical idea: explicit uncertainty. Using this model, the algorithm has no intrinsic objective. Instead, its job is to discover the objectives of its users at every step.

When AI is built with this model, it’s less likely to do severe damage. One user watching and liking a piece of content would not lead the algorithm to recommend that same content to millions of others, because there would not be a fixed goal on user engagement.

Under this model, the algorithm is more like an open book for each user. To find out users’ preferences, it might prompt them relatively frequently, especially in the early days of usage, asking them what they’d like to see. For example, a video or article might be accompanied by the prompt, “Would you like to see a fact check on this topic from one of the following sources?” If the user selected an option, the AI would learn that the user liked that kind of offering and could subsequently suggest similar resources. To some extent, we can see this currently with navigation systems that ask, “Do you want an alternate route to save 20 minutes?” This experience prompts users to stop and consider what’s best and most useful for them.

Or imagine a factory in which an algorithm operates machinery. If the algorithm has a fixed objective of cranking

out as many products as possible, it might start moving too quickly, risking more workplace accidents and injuries. If instead the algorithm had no fixed objective to begin with, it would learn from the workers' behaviors how to operate in concert with them by optimizing product output at the speed they preferred.

Embracing a Bigger Role for Humans

By designing algorithms in this more user-centric way, an organization could make it much more difficult for people with nefarious purposes to game the system and affect what other users experience. And the people who build these algorithms could incorporate ways to discover user preferences and perhaps even to encourage users to actively express their own preferences.

Of course, human biases and failings will always be a problem. It's impossible to mitigate every potential harm for every product humans create, AI included.

But this new model would help by instituting explicit uncertainty as a norm. This moves companies and leaders to think through decisions and business-model choices with more long-term thinking around users and potential unintended consequences.

We can make AI more agile and responsive to individuals' needs and subject to their choices. With algorithms increasingly powering our world, it's time to change course.

Mark Nitzberg is executive director of the UC Berkeley Center for Human-Compatible AI and coauthor of *The AI Generation: Shaping Our Global Future With Thinking Machines* (Pegasus Books, 2021). Comment on this article at <https://sloanreview.mit.edu/x/63231>.

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[MARKETING]

When We Don't Own the Things We Use, Will We Still Love Them?

New patterns of consumption will change brands' customer relationships.

BY CAREY K. MOREWEDGE

Businesses are moving to a new value proposition, offering consumers temporary access rights to experiential goods — and it's inevitable that this trend will have implications for brands' relationships with their customers.

This evolution in consumption, from a society of "owners" to one of "users," gives us more access to a greater variety of goods at cheaper prices and reduces our carbon footprints. The cost is a reduced sense of psychological ownership of individual goods — the feeling that a thing is mine — but this decline may be offset by changes in how, and for what, we feel ownership. As our enduring relationships with concrete objects wane, our feelings of ownership for abstract concepts like the ideas, groups, and brands with which we identify should also rise. Here's what businesses should understand about this evolution and its future consequences.¹

The Increasing Value of 'Experience'

Fueled by the rise of digitization and technology-mediated platform markets, our consumption of goods and services is evolving along two dimensions. First, we are replacing private ownership of goods with temporary access rights, and second, we are exchanging material goods for their experiential substitutes. For example, long-term ownership of a car can be replaced with on-demand use of car- and ride-sharing platforms like Zipcar and Uber. We are boxing up libraries of physical media — books, CDs, DVDs — in favor of subscription platforms where we stream digital. Even our data is migrating from paper records and physical hard drives to corporate cloud-based platforms. In this exchange, we forgo the bundle of rights that comes with private ownership of physical goods for temporary access rights to experiential goods.²

Access-based consumption is not new: It's how we have traditionally availed ourselves of amusement parks and country clubs, libraries and hotels, public transportation and taxis. Technology-mediated platform markets, however, are accelerating and broadening the diffusion of access-based goods.³ Uber drivers made more than 1 billion trips in 2020, in the middle of a pandemic, and streaming is now the most common way to listen to music.⁴

Access-based as-a-service consumption models offer many real benefits. We can temporarily consume goods that we otherwise could not afford or would not want to permanently own. We can rent a backyard pool for a party, hail a black car for a date,



and wear red-carpet celebrity-designer clothing to galas and weddings. We can download the perfect book or song or movie from our couch at home or at the beach. Access-based experiential consumption curtails the environmental impact of our modern lifestyle.

But giving up private ownership comes with a cost: a decline in psychological ownership.⁵ We can feel psychological ownership for concrete material goods like a car and for abstract notions like an idea, a neighborhood, or a right. Psychological ownership can be established consciously when we explicitly assume ownership of a thing (with the closing signature on a house, for example), or unconsciously, when we develop

psychological associations between a thing and ourselves. These associations occur when we feel we control a thing, invest resources in it, or know it well, or when it reflects crucial facets of our identity. This is why you might feel psychological ownership for a project at work, an office, a seat in the conference room, or your company — even if these are legally owned by someone else.⁶

Psychological Ownership Enhances Value

We perceive things we own to be a part of us, and we extend our positive self-perception to the things we own. We like things we own more and value them more than things we don't own: For instance, we demand more when we try to sell a particular good than we would be willing to pay to acquire it ourselves.⁷ For businesses, such value-enhancing effects of ownership are (mostly) worth preserving: They reduce price sensitivity for goods, services, and brands while increasing positive word of mouth, satisfaction, and loyalty.⁸ As the psychological ownership we feel for the things we use declines, so too should there be a corresponding decline in how we perceive the value of the things we use. Indeed, consumers are willing to pay less for digital goods than for comparable physical goods.⁹

These trends suggest that psychological ownership is on a downward trajectory, but it may also be transformed and preserved if people develop stronger relationships with the platforms, brands, communities, and devices that provide access to goods, rather than with the individual material goods and particular services they consume.

One reason is that material goods tend to be thought of at a low level of abstraction, whereas corresponding experiential goods are thought of more in the abstract.¹⁰ When thinking of a car, for example, we focus on its physical features; when

thinking of a road trip, we think of its purpose and meaning, and with whom we are traveling. The car we use to take the trip becomes incidental. This is likely to increase feelings of ownership for the platforms through which we acquire access-based experiential goods. Indeed, consumers who feel greater psychological ownership for car-sharing and music-streaming services use those services more often and see them as better substitutes for private ownership of cars and music.¹¹

We may also develop closer relationships with platforms or services than we had with privately owned physical goods because our relationships with access-based material goods are temporary, but

pulled its subscription-based content from other platforms, where it was intermingled with other family-friendly fare, and made it exclusive to the Disney+ platform. The strategy should preserve Disney's brand equity and unique positioning in the eyes of consumers. Automakers like Volvo are directly offering their cars on a monthly subscription basis to fend off commoditization.

When consumers require a mix of goods or services that are difficult for one brand to supply, businesses may retain control over their relationship with consumers by creating intermediary devices or platforms through which a variety of branded experiential goods and services

While trends show psychological ownership on a downward trajectory, it may also be transformed and preserved if people develop stronger relationships with the platforms, brands, communities, and devices that provide access to goods.

what we do expect to endure is our relationship with the services and devices we use to access them. Our strong attachment to and identification with our phones, for example, may reflect their role as the portal through which we access our digital media and online social lives.

Cultivating a New Sense of Ownership

How should companies respond to the changing nature of ownership? At a broad level, businesses will need to take steps to avoid commodification.¹²

Brands with significant market share, brand equity, or capital may benefit from direct sales to their consumers to keep control over their relationships with consumers and maintain their distinctive brand identity. For example, Disney

are consumed. The Kindle is such a device, and Amazon provides both the device and a platform. This is easier said than done, however: A minority of platforms succeed, and cultivating a connection to a device or platform requires that consumers feel a sense of control, make investments of time or money, and see the brand as an expression of their identity.

Brands that continue to work with intermediaries will need to carefully manage their exclusivity by curating how their offerings can be accessed. Automotive brands negotiating with ride- or car-sharing platforms like Uber and Zipcar could avoid commodification by negotiating the exclusive use of their brand on a platform, essentially making the platform a brand extension of the automaker.

When We Don't Own the Things We Use, Will We Still Love Them?

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Brands could also develop platform-specific products or encourage the use of an existing product, as General Motors is attempting to do through driver discounts on its Bolt EV. If neither option is feasible, brands may be better off avoiding the platform.

Companies might increase psychological ownership for experiential goods by guaranteeing extended access, such as offering long-term contracts for popular

interfaces with haptic touch-screen controls and by allowing consumers to determine when, where, and how quickly they consume goods. Reminding users of the time and effort they've invested in platforms, brands, and communities through gamification, status levels, and reminders may leverage that self-investment in a way that deepens their sense of psychological ownership.¹⁴ For example, Duolingo's language learning sends users frequent notifications reminding them to practice skills

Well-identified cues foster the intuitive sense of ownership of an experience, such as greater choice or more control. The latter can be enhanced by allowing consumers to determine when, where, and how quickly they consume goods.

content. Businesses "selling" digital goods may need to be even more strategic in the way they manage long-term rights. For example, many of us erroneously believe that we are purchasing ownership rights to a copy of a digital book, when we are actually purchasing long-term usage rights. This misunderstanding can create a backlash when platforms terminate those rights, even if they reimburse consumers, as when all users of Microsoft's e-books lost access to their digital libraries when the company abruptly shut down its book platform.

Cultivating a State of Ownership

We feel psychological ownership for a host of things that we do not legally own, and there are well-identified cues that foster this implicit or intuitive sense of ownership of an experience, such as greater choice or more control.¹⁵ The latter can be enhanced through user

acquired and keeps them engaged with features like leaderboards and rewards such as badges and points.

Finally, marketers will do well to keep in mind tried-and-true relationship-building strategies, such as educating consumers about a brand's unique history and products, and encouraging use of the brand for self-expression or to signal membership in a social group.

OUR EVOLUTION FROM a society of owners to users is an exciting change that confers many benefits and a necessary change for the future of our planet. A mindful approach to its psychological costs may help consumers and businesses see value in their new relationships with the things people consume.

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[IDEATION]

How Maker Tools Can Accelerate Ideation

Forget traditional brainstorming — tools used for rapid prototyping can speed product development when used for idea generation.

BY HILA LIFSHITZ-ASSAF AND SARAH LEBOVITZ

Innovators face tremendous time pressures today, whether they are tackling urgent issues such as public health and climate change or designing new products to stay ahead in a fast-moving competitive market. To meet the challenge, companies are investing in a number of technologies that accelerate innovation, but for many, the process is still frustratingly slow. What should organizations do? Our short answer: Do not use accelerating technologies only for rapid prototyping; use them much earlier and differently, for *rapid ideating*.

In recent years, a new group of “accelerating technologies” such as 3D printers and Arduino and Raspberry Pi electronics have helped to significantly speed product development. 3D printing is used to quickly produce physical objects using layering methods guided by digital input files, and it has revolutionized the ability to prototype. Developers use tiny, affordable single-board Arduino and Raspberry Pi computers to build a wide variety of applications and devices. These technologies have largely been put to work at the rapid prototyping stage.¹ But a study we conducted on accelerating innovation reveals that they provide even more accelerating power when teams use them differently and much earlier, for ideation.

We conducted an in-depth field study of accelerating innovation for assistive technologies in maker spaces in the U.S. (with Lior Zalmanson of Tel Aviv University).² In our study, teams aimed to solve real-world assistive technology challenges, such as how to operate an elevator with voice or how to enable hearing-impaired individuals to “see” sounds in order to safely cross streets. This kind of innovation usually takes weeks or months, but these teams had just 72 hours to build new, working products and hand them over to anticipating users.

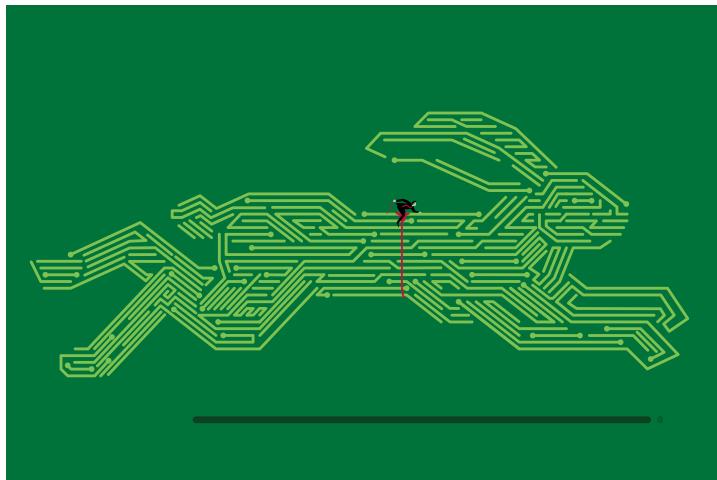
All participants were given these ambitious goals, faced the same time pressure, and had access to the same cutting-edge accelerating technologies, including 3D printers, Arduino and Raspberry Pi electronics, advanced laser cutters, and other maker-oriented gizmos like motors, carpentry tools, and welding equipment. None of the participants

knew one another entering the challenge, and they quickly created ad hoc teams. We expected this to be a hard challenge; based on previous research on time-pressured innovation, most of them could be expected to fail, given that creativity often dies under time pressure.³ However, multiple teams were able to develop working new products in only 72 hours, so we looked more closely at how they did it.

We carefully studied the process of each team, hour by hour. Many teams followed widely accepted rapid prototyping best practices, developing a clearly defined idea first and then quickly creating a prototype to bring that idea to life. To develop their idea, these teams started with the familiar brainstorming discussions, whiteboard sketches, and a joint team effort to agree upon the desired prototype’s specific materials, mechanisms, and measurements. They simply pushed to do all of that much faster. Once they

reached clarity on the desired product design, they quickly divided up the work and used the accelerating technologies to create their prototype. These teams were well organized and synchronized. And yet, at the end of the 72 hours, they were unable to produce functional devices and were deeply frustrated.

The teams that were able to create a working product in only 72 hours used the same accelerating technologies, but in a different way. Instead of first brainstorming their ideas, agreeing on what approach to pursue, and then using the accelerating technologies to prototype, these teams used the technologies to come up with the ideas themselves. We describe the way they used accelerating technologies for the ideation process as *rapid ideating*.



How Maker Tools Can Accelerate Ideation

(Continued from page 19)

In essence, they were able to use the accelerating technologies to guide their creative thinking in order to generate and experiment with multiple new possibilities rather than first choosing one to focus on.

Instead of engaging in traditional brainstorming sessions, the rapid ideating teams quickly rallied around a rough outline of a possible direction — a high-level sketch that was not clear or as highly specified as what the rapid prototyping teams developed. For instance, one rapid ideating team scribbled just a few key phrases on a sticky note to guide their work. They then immediately divided up to work as individuals or sub-teams, fired up their 3D printers, and started the rapid ideating. Meanwhile, on a similar challenge, a rapid prototyping team was using whiteboards to produce detailed drawings that included precise measurements (the design's dimensions, how the components would fit together, and what kind of motor and power source would be required). The rapid ideating teams, however, were already experimenting: After multiple iterations, they returned to their teammates to share potential emerging design paths and began converging on a design and transitioning to the prototyping stage. The ability to rapidly ideate with accelerating technologies gave them a remarkable advantage.

Experimentation and Agility Under Time Pressure

We all know that experimentation is important, but when we are under intense time pressure, we often abandon that approach.⁴ Instead, time pressure and stress increase the desire for a sense of control and a clear, well-organized work process. However, we saw that rapid ideating enabled teams to experiment even under time pressure. Those teams experimented intensely from the very start in order to

explore and pursue multiple product design paths simultaneously. Though it can be difficult and risky to maintain an experimental approach under time constraints, the use of accelerating technologies made it possible, despite the normal inclination to reduce ambiguity under time pressure.

This crucial advantage of rapid ideation for accelerating innovation was evident as the clock ran down and teams faced unexpected challenges. Inevitably, as in all new product development processes, all of the teams faced technical challenges and failures that called into question the viability of their respective approaches. Rapid prototyping teams persisted in iterating and tweaking their original, agreed-upon solution design; their brainstorming approach strengthened their commitment to it. Rapid ideating teams demonstrated far greater flexibility and agility, even under intense time pressure. These teams quickly adapted and pivoted, since they were simultaneously using the accelerating technologies to experiment along multiple diverse solution paths. The hyper-experimentation and fast pivoting that rapid ideating provides are exactly what is needed for accelerating innovation.

Ideation traditionally takes place through team discussion, which is very hard to speed up without causing problems in team dynamics or forcing premature closure on an idea. While rapid ideating teams avoided these traditional team brainstorming challenges, their approach came at a price. The rapid ideating teams were messier and less coordinated, and their teamwork was more difficult. Since these teams did not prioritize clarity and consensus upfront, they faced multiple challenging moments of conflict or misalignment. For instance, without a clearly defined path guiding their separate work activities, teammates often discovered that a component they had been working on was unusable and did not fit

within the emerging design path, or that another teammate was working on something very similar. Over time, these teams developed an adaptive type of coordination that allowed them to swiftly update and nudge one another toward a common path while preserving the benefits of their experimental and divergent approach.

Rapid ideation allows us to break free from traditional brainstorming approaches that prioritize reaching consensus around a clearly defined and agreed-upon idea before moving forward. These approaches fail under extreme time pressure and can be seen as relics of a time when experimentation was costly and time-consuming. Rather than using accelerating technologies to speed the traditional process, we need to reimagine how we innovate and change our process to truly unleash the power of these technologies — and be better positioned to address 21st century challenges.

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INNOVATION MANAGEMENT

SPECIAL
REPORT

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**Break Out to
Open Innovation**



HEALTHY BUSINESS GROWTH relies on a consistent pipeline of creative new ideas — and strategies for generating, cultivating, and operationalizing them. In this special report, we take an end-to-end look at how innovative ideas move from inspiration to implementation.

Leaders can foster better conditions for innovation by first understanding what individuals and teams need in order to be their most creative and productive at each of the distinct phases of a new idea's journey. Jill E. Perry-Smith dives into the interpersonal dynamics of this process, looking at how collaboration needs change as ideas advance from birth through elaboration and on to execution.

Choosing which new ideas are the best bets to receive funding for further development is among the most important decisions that organizations can make — but Thorsten Grohsjean, Linus Dahlander, Ammon Salter, and Paola Criscuolo have found that some traditional ways of selecting projects for funding may advance poor ideas while leaving good ones behind. They counsel leaders to beware of biases that creep into those decisions, and suggest alternatives that may improve the success rate of new ideas brought to market.

Many companies are increasingly looking to external sources to speed innovation, such as corporate accelerator programs that connect them to startups. Denis Bettenmann, Ferran Giones, Alexander Brem, and Philipp Gneiting explain how multisponsor, open accelerator programs can be advantageous for some companies, and they discuss how Mercedes-Benz has adapted its innovation processes so that it's able to rapidly integrate startups' offerings into product-line enhancements.

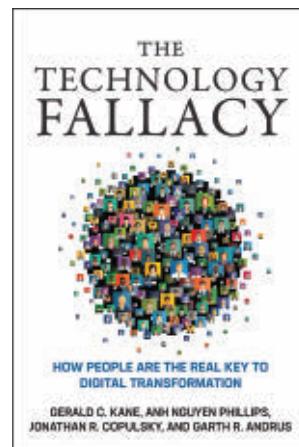
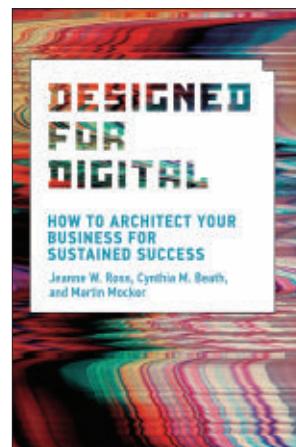
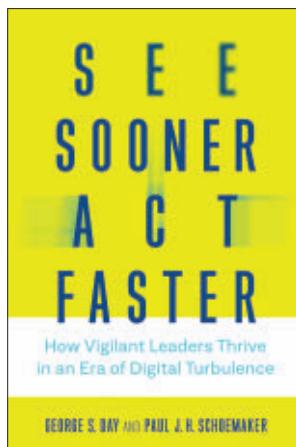
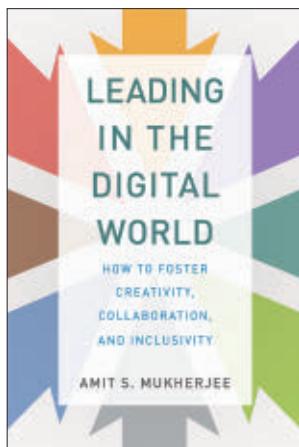
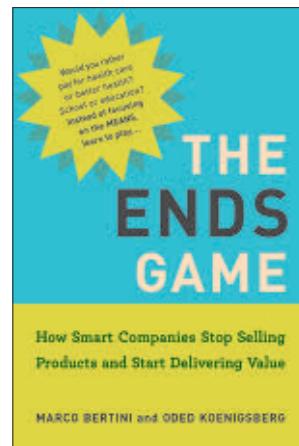
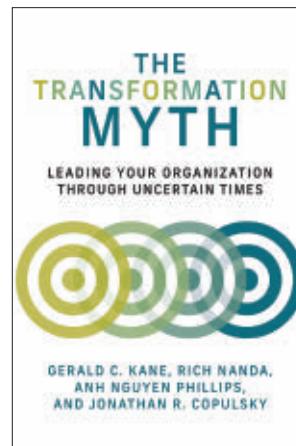
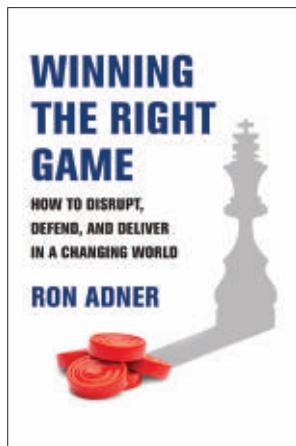
For more on accelerating innovation, don't miss the short report from Hila Lifshitz-Assaf and Sarah Lebovitz (in our Frontiers section) on how pulling tools meant for rapid prototyping into the early ideation process can yield impressive results in a time crunch.

—Elizabeth Heichler

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How Collaboration Needs Change From Mind to Marketplace

Identify and pursue truly novel concepts by helping the innovators in your organization collaborate in the right ways at the right times.

BY JILL E. PERRY-SMITH

It can be a long slog from initial concept to final product. Even in organizations that pride themselves on rapid iteration and experimentation, most truly novel ideas either stall out at some point in development or lose their originality along the way. How do you defy those odds? By adjusting collaborative behavior to meet the idea wherever it is in its journey from mind to marketplace.

That journey entails four phases: *idea generation*; *concept elaboration* through tests or prototypes that flesh out the idea and assess feasibility; *internal promotion* to get the sponsorship needed to move forward with a product; and *implementation*, which involves finalizing plans and specifications, creating the product, and delivering it. In my nearly 20 years researching creativity and innovation, I've found that as an idea progresses from phase to phase, its collaborative requirements change. (See "The Idea Journey at a Glance," p. 26.) Here, we'll look at how those needs shift and how innovation managers can help people adapt accordingly instead of relying on go-to connections and patterns of behavior.

If novel ideas moved in a straight line from conception to completion, it would be easier for them to gain traction. However, they often loop



back to previous phases or cycle between phases several times, which complicates the journey and stalls progress. When this happens, an idea is likely to be stripped of its novelty so that a more mundane version can move forward with less resistance. Novel ideas are inherently risky. *Because* they are unusual, they lack strong precedent, and it's tough to cite clear examples of success. So convincing stakeholders to invest in them can be difficult. Thus, high-potential novel ideas tend to devolve into safer, less inspiring ones that ultimately get the green light.

That's hardly the stuff of competitive breakthroughs. By taking a more adaptive approach to creative collaboration, your organization can increase its odds of bringing truly new ideas to market. Let's begin by examining the core collaborative needs of each phase of the idea's journey.¹

Sparking Idea Generation

Each new concept originates as a spark of creative inspiration. Innovation managers can ignite that spark by exposing people to a range of perspectives. This builds cognitive flexibility, priming minds to make novel connections that lead to original ideas. During idea generation, exposure to alternate points of view needn't be immersive. Brief, even fleeting, encounters with others who see the world differently can enhance creativity.

Indeed, in a series of studies I conducted, interactions with strangers and acquaintances had that effect. For example, in one R&D organization, engineers with an abundance of weak, surface-level network ties to people in different functions were rated by managers as more creative than engineers with fewer weak ties. In contrast, strong ties did not promote creativity and in some cases harmed it.²

To understand why, think about the people you interact with most frequently or consider to be

friends. Chances are pretty good that you're connected by some thread of commonality. Maybe you're in the same department or in the same type of role. Maybe you have similar personal interests or temperaments. You may share experiences or identities associated with your race, gender, or profession. Although such relationships provide comfort and support, they are less likely than weaker ties to expose you to new ways of thinking.

Close friends may actually be *too* supportive during the idea generation phase. In another study, London Business School professor Pier Mannucci and I invited both friends and strangers, on campus and in the surrounding community, to come into our research laboratory so we could observe their conversations after assigning them a task: Generate and develop novel decor ideas for a university bookstore. Participants worked alone and submitted their own ideas, but they were randomly assigned to talk to two strangers or two friends, one at a time, before they began their focused brainstorming. We found that friends showed support by building on one another's ideas — and people went forward with those ideas, *even when they were not very creative*. Strangers, in contrast, exchanged a greater variety of ideas in their conversations, and people came up with more novel concepts as a result.³

Interactions with strangers or acquaintances can provide another benefit during the generation phase as well: We work harder to mine creative nuggets from these connections, and so the yield tends to be richer. In a simple experiment where people were asked to come into the lab and solve human resource problems, they jotted down their initial thoughts before receiving input from others — either friends or people they didn't know well, one person at a time — and then independently formulated solutions to propose. Those who received concrete advice from people they

THE IDEA JOURNEY AT A GLANCE

Collaborative needs shift from phase to phase throughout the development and execution of a novel idea.



didn't know well spent more time coming up with solutions, presumably putting in more cognitive effort to integrate different perspectives. Even though participants deemed ideas more useful when they came from strong-tie interactions, independent raters judged the solutions generated by weak-tie interactions more creative.⁴ We may intend to pursue novel ideas with equal rigor no matter who or where the initial spark comes from, but weak ties provide an edge.

So, encouraging novelty in the generation phase means providing ample opportunities for innovators to get inspired by weak ties. (We'll go into detail later about how to do that and how to meet collaborative needs in other phases.) It's best to encourage one-on-one interactions rather than group discussions this early in the idea journey, when letting many flowers bloom makes it easier to find the freshest ones.⁵ A considerable body of research shows that teams generate fewer and lower-quality ideas than the same number of individuals working alone.⁶ One problem is that people have difficulty simultaneously paying attention to teammates' new ideas and coming up with their own. Teammates tend to produce similar ideas when brainstorming together, and they get distracted by social niceties like taking turns when others are expressing themselves. Ideally, innovators should engage in one-on-one interactions with weak ties to stimulate creativity and *then* generate ideas alone to maximize originality.

Supporting Elaboration

During the elaboration phase, the concept is fleshed out, although it is by no means complete. Activities include lab testing and prototyping to give the idea shape and assess its viability; they do not involve creating detailed blueprints or CAD drawings.

For elaboration, the core collaborative needs are support and encouragement — the same behaviors that stifle creative generation. Though beloved by its creator, a highly novel idea inevitably has flaws that are clear to others. But at this point, detailed critical feedback can prematurely squash the idea by highlighting barriers and undermining confidence in its potential before a fair case can be made for it. The creator may take the criticisms personally, abandon the concept, and avoid sharing highly novel ideas again, not wanting to be perceived by decision makers and colleagues as being too far "out there."

Because of these risks — and because there isn't yet evidence that the idea could really take off — the creator needs courage to persist. So keeping the idea moving through the elaboration process requires a constructive stance and positive developmental feedback in the form of suggestions and observations.

Close friends can be excellent sources of support and encouragement in this phase by serving as creative confidants. Friends tend to listen with an open mind, and even if the rough concept seems flawed to them, they are likely to provide encouraging advice and feedback that could help shape the idea into something with staying power rather than pick it apart. In the study that tasked people with generating bookstore decor ideas, friends who provided input extended and built upon ideas rather than offering new ones.⁷ For instance, they suggested additional color combinations or technological capabilities. With this kind of feedback, creators were more likely to move forward and even expand the idea's novelty. But when strangers continued to offer new ideas during the elaboration phase, creators abandoned their own, perhaps taking others' contributions as a signal that their own ideas were flawed.

Managers may be tempted to act as creative confidants, especially if they have a close relationship with the idea's creator, but they are not the best source of feedback and support during elaboration. Research shows that they are less equipped than peers to recognize a creative idea's downstream potential. The manager's role usually emphasizes evaluating ideas through the lens of prior experience and knowledge, leaving little room for open inquiry and exploration.⁸ And creators may assume that managers are always in evaluation mode, even if they don't mean to be.

Although collaborative needs shift from strangers or acquaintances during generation to friends during elaboration, the two phases do have something in common: an emphasis on input from individuals rather than teams. Groups' social dynamics create unnecessary threats to creative ideas during elaboration. For instance, our desire for social acceptance and our tendency to make sense of things based on social cues from others may cause team members to coalesce around a particular position that could summarily squash a novel idea while it's still being defined. Individuals don't fall into the same traps.

The role of creative confidant is best played at a distance from very early development work. When people don't contribute directly to the testing and prototyping, they can more easily focus on giving encouragement and support rather than providing tactical assistance, and they aren't as inclined to engage in overly critical evaluation. And anyway, the prototyping and feasibility studies don't require as much collaboration as the more extensive development work later, during implementation, when a team is useful and necessary to create detailed blueprints, for example, and to solve technical and specification issues that arise. In the elaboration phase, the creator may enlist the help of others to complete first-stage prototyping, but this should be a creator-directed effort rather than a codevelopment activity.

Seeking Promotion

The main activities during the promotion phase include selling the idea internally and seeking approval to blueprint, create, and deliver the finished product. The creator or business manager pitches the idea to key gatekeepers, such as innovation panels or top management teams, who can provide political support and resources.

Success in this phase requires organizational influence. Persuading people to invest in novel ideas with minimal precedent is difficult, especially when many ideas are vying for support. So it's useful to collaborate with a *network broker* — a linchpin who connects otherwise disconnected people.

A network broker can efficiently secure buy-in and resources from various areas of the organization. A rich body of research, inspired by sociologist Ronald Burt's structural hole theory about networks, confirms that brokers are well positioned to capture attention for ideas because their connections give them access to people and information that others don't have. Their status as go-to sources of knowledge confers legitimacy and power.⁹ Tapping someone who simply has a lot of connections won't provide the same benefits. The key is connecting those disparate pockets of people so that the idea and the opportunities associated with it will have more touch points throughout the organization.

In addition to expanding the idea's reach, network brokers can help describe ideas in a way

that will resonate for a variety of potential backers. They are adept at moving between groups and social circles that do not share the same history, norms, values, and approaches to decision making. They speak the language of these circles and understand what matters to them.

Streamlining Implementation

Once the creator has the necessary go-ahead and funding, the idea moves to the implementation phase, where the main activity is executing on the prototype or refined idea. In addition to building and delivering the product, this often involves finalizing the plans that will allow you to fully realize the concept: developing detailed engineering specifications (such as CAD drawings), sourcing the materials, and outlining the logistical operations. Of course, this work takes different forms in different fields — it doesn't always look like traditional product development. In the film industry, for instance, execution entails finalizing scripts and storyboards, working out production details like shooting angles and lighting specs, directing and filming the actors, editing the movie, and distributing it.

The primary collaborative need during this phase is for a shared vision that will motivate team members to persevere and overcome obstacles by giving each of them a sense of ownership. To understand the optimal collaborative patterns in the implementation phase, think about how cliques work: In these dense groups of friends, each member has a direct association with every other member. There's no need for a network broker. The relationships are so close and intertwined that group identity supersedes individual identities. Indeed, anyone who is too inwardly focused may risk social isolation from the others. Sociological research reveals that this group structure has a lot of advantages.¹⁰ Members of a clique enjoy a great deal of trust and cooperation. Their tightly woven relationships give them leverage to bring in line any behaviors that are contrary to group norms and expectations. And positive sentiment is high: It feels good to be part of such a cohesive unit.

Product teams can apply the same principles — trust, cooperation, social correction, and group cohesion — to implement an idea. When individual members know they can rely on one another, are

confident about one another's intentions, and feel an intense commitment to the group and its work, they can embrace the creator's vision and advance it in lockstep.

A call for teams that resemble cliques may seem like an invitation to engage in classic groupthink—a cognitive trap that is associated with a strong desire for belonging and leads team members to fixate on the merits of a single idea, without noticing its flaws or raising alternatives. Groupthink does cause problems during the generation phase, where a variety of perspectives begets novel ideas. But during implementation, the focus is on getting things done; it's time to converge on the chosen idea and make it work. While cohesive teams with a shared vision can handicap idea generation, they generally have an edge with execution. Plus, research shows that they are also quite capable of critical evaluation and objective decision-making once their high-level vision is established. Clarity around roles and ease of communication allow members to effectively push back and raise concerns.¹¹ So a tight-knit team can think critically while building out detailed specifications and implementing ideas—and make better decisions as a result. If group members all understand and support the goals of the project, they'll more effectively share information, work together, and overcome obstacles.

Make It Easier to Flex

Changing collaborative behaviors to meet shifting needs requires collaborative flexibility, but most of us rely repeatedly on our strongest relationships, no matter where we are in the idea journey. In studies of a live-action role-play troupe and individuals in the lab, people disproportionately thought of their closest ties during idea generation, when these ties are not optimal, and tended to stick with the same ones during elaboration, even if they had large networks.¹² In fact, this tendency increases the more network ties one has. There is no chance of talking to the right people if we don't even think about them in the first place, so innovation managers must help employees develop greater collaborative flexibility to meet the needs of the moment—and provide settings where this skill can be exercised. I offer several suggestions.

Create spaces for independent thinking and exposure to different perspectives. When you're

just entering the generation phase, try to avoid asking teams to come up with novel ideas together. Often, it's setting them up to fail at a task they're not designed to do. Instead, have individuals generate ideas on their own before discussing them with the group so that independent, original thinking isn't immediately thwarted by the impulse to conform. If a team must assemble during the generation phase, try brainstorming silently (a process known as "brainwriting") before sharing.

Sometimes ideation naturally falls to teams—when a visibly joint effort is needed for buy-in, for instance. If that's the case, invite outsiders to attend discussions and empower them to ask questions. Infusions of fresh perspectives can mitigate the strong urge to reach consensus too quickly in groups. Even naive questions from someone with no stake in the problem or project at hand can push the team to process early ideas more objectively, nudge team members to reconsider closely held views, and lead to creative outcomes.¹³

You can also consider a team rotation program, where newcomers visit groups as guest members for a single meeting or for several weeks. This benefits the newcomers by exposing them to different areas of the company and expanding their points of view, and it brings new insights into the team. It takes guest members away from their regular responsibilities, but not for long—and organizations that commit to continuous innovation must carve out time to work on unfamiliar or unspecified challenges.

Convene strangers who can see problems in a new light. Give employees opportunities to share problems in need of creative solutions with colleagues beyond their immediate circle. Think of structural ways to do this. For instance, you might create an idea board or council, staffing it with a rotating assortment of members who listen to challenges people are puzzling over and offer observations from an outsider's point of view. People could schedule 30-minute one-on-one sessions with council members to get the benefit of various perspectives without incurring the creative and social risks associated with group work. This sharing opportunity is good for the presenter, who might not otherwise be heard, but also for the board members, who gain exposure to employees and parts of the business they may not know well or at all.

Pixar has adopted a similar model: It assembles brain trusts of directors so that other directors can present challenges they're facing with works in progress.¹⁴

Idea boards can also solicit solutions to problems they have identified, and they need not interact face to face. Consider virtual platforms to enable broad participation. Internal web-based problem-solving competitions are one way of sourcing ideas from colleagues far and wide who are unfamiliar with a particular problem or project and can provide fresh insight. At General Electric, aviation engineers were grappling with a small bracket that weighed an engine down and undermined its effectiveness. So they launched an online community competition and posed a challenge: Whoever redesigned the bracket to reduce the weight most effectively would win \$7,000. The winner was a stranger to the problem—with no aviation experience.

Bring friends together to elaborate. Once innovators have identified an idea they'd like to explore, encourage them to seek early input from close allies. Recall that sharing highly novel ideas involves personal risk. When no established precedent exists, others may think the originator of the idea is ill informed or lacks grounding or credibility. Push key team leaders to work around this psychological barrier by identifying and cultivating creative allies within and outside the organization. As a manager, you can model this behavior by sharing ideas of your own with members of your inner circle and openly debriefing your team on what you're learning and gaining as a result.

But again, a structural change may make it easier for others to adopt similar collaborative behaviors. For instance, you might ask an employee with a constructive disposition to serve as your group's creative confidant for raw ideas. You would want to select someone who likes to encourage others and help build ideas rather than suggest new ones or dive into a premature critical evaluation—or at least train this person to provide the optimal balance of support and feedback. It should be someone whose informal evaluations or impressions of the creator would not become an unintended barrier—maybe a trusted peer in another department, for example (if that person's manager is amenable and perhaps interested in having one of your team members help their group in a similar way). The creative confidant could set

aside informal office hours for this purpose so these conversations wouldn't become too onerous. The idea is to provide an easy, psychologically safe way for people to spend a few moments sharing a core concept with a receptive listener so they can elaborate on the idea before sharing it more widely in the organization.

What if the idea is simply a bad idea? Should the creative confidant encourage an idea that will never work? Yes! Organizational psychologist Jennifer Mueller, in her book *Creative Change*, describes the inherent difficulty of spotting and embracing high-potential creative ideas.¹⁵ As mentioned earlier, managers in particular have trouble identifying these ideas, given their tendency to go into evaluation mode. If you want to encourage novel ideas, it's better to risk letting some bad ideas move forward into prototyping than to abandon good ones prematurely. Save the critical evaluation for later, during promotion, once the idea has enough substance to weather the scrutiny needed to make a persuasive case, and during the early stages of implementation, when specifications are being finalized.

Identify superconnectors, and put innovators in touch with them. Finding the network brokers, or *superconnectors*, in your organization is easy when they have formal positions that bridge disparate groups. Still, these roles may be more obvious to you than to the innovators you work with, because of your vantage point as a manager. So explicitly point out who the formal brokers are and provide introductions. But also remember that other brokers (sometimes the most effective ones) do not have a job that reflects their network position. As you work to identify these hidden superconnectors, look for people who have worked in or with various business units and have, as a result, maintained key relationships throughout the organization. Even if they are not decision makers or gatekeepers, they can fulfill the influence and translation roles of brokers.

It helps to pay attention to the trajectories of job switchers in your network. For instance, one executive in my research noticed that a former finance colleague had branched out and assumed roles in operations and marketing. They eventually became allies, creating a tie between the executive and an informal superconnector.

Build teams to execute. When assembling teams for implementation, seek members who have

relationships with one another. Interpersonal connection is as important as prior experience and technical competency. Consider office layouts: you might cluster departments during implementation (versus intermingling them when generation is the primary goal). Close ties make it easier to adopt a shared vision for execution, and it's difficult to develop those quickly. Offsite team-building activities can help groups gain familiarity and interpersonal awareness, but it's much more efficient to tap members who already have connections in place. You can then build on those connections by assigning tasks that will yield small wins early on. Bonding through success is more effective than bonding through occasional fun activities and expensive offsites.

IDEALLY, COLLABORATION BECOMES more intensive as new ideas progress from concept to product. Although innovators do need exposure to others for creative inspiration, that exposure should be constrained early on: During idea generation, one-on-one interactions with strangers or acquaintances promote open-mindedness and originality. During elaboration, when ideas are half-baked and sharing them is risky, close allies and friends can give innovators support and encouragement to help them persist in the face of uncertainty. As an idea moves to internal promotion, innovators have to connect with more and more people — in various pockets of the organization — to secure the resources and buy-in to proceed with a product. In this phase, complicated networks must be navigated and relationships brokered. Teams finally come into their own during implementation, when consensus is more valuable than threatening. Once novelty has survived development, getting in sync is the point — it's what brings the idea home.

As a manager, you can create the conditions to meet the shifting collaborative needs of innovators. It doesn't require an organizational overhaul, though it is largely a structural challenge — mainly a matter of helping people make the right kinds of connections at the right times. When that's happening consistently in a business, truly novel ideas have a fighting chance to make it to market.

Jill E. Perry-Smith is a professor of organization and management at Emory University's Goizueta Business School, where she currently serves as the

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Better Ways to Green-Light New Projects

Organizations can make better choices about which R&D projects gain funding by managing bias and involving more people.

BY THORSTEN GROHSJEAN, LINUS DAHLANDER, AMMON SALTER, AND PAOLA CRISCUOLO



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In early 1962, an unknown band from Liverpool auditioned for Decca Records. The label rejected the band, saying, “We don’t like their sound, and guitar music is on the way out.” About 18 months later, the Beatles would release their first album.¹ The rest is history.

The business world is full of anecdotes about businesses that passed on an idea that later became a huge success. The reverse is also true; in some cases, companies invest in promising ideas that prove disastrous. A famous example is Iridium Communications, a former division of Motorola that sought to market satellite phones broadly. After the company sent satellites into orbit in 1998, a host of issues prevented the business from gaining traction with customers, and the company filed for bankruptcy the next year. (Iridium was restructured and is still around; its technology is used by the U.S. military.)²

Selecting innovative new projects for further investment and development is critical — and hard. The best R&D projects can renew an organization’s product lines, processes, and services, improving its performance and competitiveness. But deciding which new ideas are winners and which are duds is tough, because new initiatives are characterized by fundamental technological and market uncertainty. And our research shows that at many companies, bias and process issues can imperil good decisions.

To improve their track record of choosing the right innovations to bring forward, leaders must first

understand where R&D selection panels go wrong. Based on our research, we have identified five main categories of such issues. We suggest specific steps that leaders can take before, during, and after the selection process in order to make more objective, fact-based decisions about which new ideas to green-light. While nothing can eliminate all risk from an inherently speculative endeavor, improving the process can tip the odds in companies' favor.

Common Problems in How Companies Select Projects

Many organizations have created expert panels that invest significant time and effort in reviewing project pitches and deliberating on their merits. Because these panels are usually composed of senior members of the organization, they are an expensive resource. But research shows that these expert panels can be highly problematic for five principal reasons.

First, panels tend to show a strong bias against highly novel ideas, even though generating them is the explicit goal of innovation efforts.³ Decision makers often reject them, even if they claim to want breakthrough innovations, because they are uncomfortable with the risk involved in pursuing them. We conducted a study in a leading professional services firm and found that project review panels were more likely to fund projects with intermediate levels of novelty. Some degree of novelty increased the chance of funding, but too much reduced those odds.⁴

Second, a broad range of studies has found that expert panels suffer from a lack of diversity. Organizations commonly staff panels with “the usual suspects”: highly senior men. The inherent uncertainty of green-lighting innovation pushes panelists to revert to established thinking about people and their backgrounds, favoring projects from people who look and sound like themselves rather than basing a decision on the merits of the idea itself.⁵ Biases may manifest as a preference for men over women, people with familiar names as opposed to those with “foreign-sounding” names, people with greater experience within the organization, people from a particular location, or people with high-status affiliations (such as a famous university). These biases can become self-reinforcing over time among homogeneous groups of people — all the more reason for organizations to increase diversity on innovation panels.



The authors conducted a multiyear research project inside a global professional services firm, collecting both quantitative and qualitative data about the firm's innovation selection process.

In an initial study, they examined how eight selection panels composed of senior managers and leading engineers allocate money to new research ideas. In a second study, they analyzed the effect of sequencing on 763 decisions made by one of the eight panels.

The authors also conducted interviews with several dozen executives.

A recent study examining the selection of startups applying to the MassChallenge accelerator program found that when judges evaluated startups alone — without consulting with other judges, and on the basis of a purely textual description of the venture — they were less likely to be influenced by the founder's gender and where they had earned their university degree. In contrast, when judges performed their assessments after watching a short pitch and Q&A session, gender and educational background became more important in their evaluations.⁶ When individual characteristics are more apparent, they affect the outcome of the decision-making process. This effect is compounded when an evaluation must be performed quickly, suggesting that fatigue and high workloads could lead to more biased choices.

The lack of diversity in expert panels is also problematic given that people with different demographic backgrounds have different experiences and consequently different opinions about which ideas to pursue.⁷ Thus, leaving out women and/or people of different backgrounds and heritages may lead to missed opportunities or failed investments.⁸

Third, technology companies usually staff expert panels with scientists and engineers, who tend to focus on the technical aspects of an idea without sufficiently considering the business opportunities and challenges. Although some expertise is required, having only experts on a panel can be problematic.⁹ Panel members may have a bias for ideas originating from their own field of expertise, and experts are prone to systematic errors in assessing truly novel ideas.

Fourth, the panel decision-making process itself may also lead to inferior outcomes. As in many other areas of collective decision-making, applications are often introduced by a panel member, akin to an informal sponsor. This person frames the discussion around the issues they believe the group should consider, creating an artificial consensus in support of that person's stance. Even if sponsors strive to be objective, their own views on the project may be reflected in their tone and presentation, telegraphing biases and shaping the views of others on the panel.

Finally, the timing of the process can also yield inferior decisions. For example, we know that the

timing of meals affects judges' sentencing decisions, such that the percentage of favorable rulings gradually drops before, and then increases after, session breaks.¹⁰ In addition, the order in which projects are reviewed shapes outcomes. Looking at unique data from a professional services firm, we found that the decision to fund one project makes it unlikely that the next project will be funded. This occurs even when the sequence is random.¹¹

Making Smarter Decisions Before, During, and After the Selection Process

There are a number of ways to reduce these biases and improve outcomes before, during, and after selecting innovation projects for further investment. Although these practices may require some resources and effort to deploy, they likely cost less than the traditional model of selection, which heavily taxes senior managers' and technologists' time and effort.

► BEFORE SELECTION

Before projects are evaluated, companies can take steps to ensure that they get a fair assessment based on their merits, primarily by revising the process for submitting ideas for consideration.

Remove names and demographic information. To combat latent biases, organizations should mask or remove the names and key demographic characteristics of creators behind any ideas under consideration. Some research has found that masking submissions in science increases the likelihood of women receiving grants.¹² One simple, low-cost experiment that an organization can run is to mask the identity of the idea creator to test whether there is a bias for certain types of individuals in the organization.

Notably, although masking submissions is a start, companies will likely need to take additional steps to identify biases. A study concerning grant proposal acceptance by the Gates Foundation found that blind reviews do not always comprehensively eliminate gender biases.¹³ Gender-based differences can arise in the writing styles of the project proposers, which suggests that organizations need to continuously and proactively gauge whether they are falling prey to bias.

THE HEILMEIER CATECHISM

As part of the evaluation process for new ideas, DARPA requires that all project creators address a standard set of questions:

- What are you trying to do? Articulate your objectives using absolutely no jargon.
- How is it done today, and what are the limits of current practice?
- What is new in your approach, and why do you think it will be successful?
- Who cares? If you are successful, what difference will it make?
- What are the risks and the payoffs?
- How much will it cost?
- What are the midterm and final "exams" to check for success?

Standardize submissions. It's critical that ideas competing against each other are comparable. This can be achieved by providing a detailed, standardized template for submissions. At the Defense Advanced Research Projects Agency (DARPA), program managers must frame their proposals following the Heilmeier Catechism, a set of questions first formulated by George Heilmeier, director of the agency in the mid-1970s.¹⁴ It establishes the criteria used by selectors to decide whether to fund a project and also acts as a screening device to help project managers judge whether their ideas have a chance of being approved. (See "The Heilmeier Catechism.")

Another advantage of standardizing submissions is that companies can more easily build up searchable repositories of accepted and rejected ideas that can be easily compared, making the process more transparent and objective. A company we studied posts all project pitches and decisions on an internal webpage so that people can learn about what has worked in the past. Like pre-publication review in science, this open model also allows anyone in the organization to comment on pending applications, ensuring that the panel has access to the views of others in the organization before making its decisions.

Amazon also requires employees to present their ideas using a standardized approach. The basic criteria for evaluation are similar to those of the Heilmeier Catechism: what the estimated market potential of the idea is, whether Amazon can build it, and whether customers will love it.¹⁵

► DURING SELECTION

The selection process itself is the most ripe for rethinking. There are several measures that organizations can take to improve outcomes.

Seek diverse voices from inside the company.

Research has highlighted the importance of diversity across multiple dimensions — demographic characteristics, but also professional expertise and backgrounds. Having a more diverse selection panel will not only help it to overcome biases against women and people of different backgrounds and heritages — it will also lead to products that are more appealing to people with different needs and interests. Second, greater

knowledge diversity increases the odds of more novel projects being funded. One relatively easy method to make selection teams more diverse is to include people with both technical and nontechnical backgrounds. This ensures that projects are evaluated not solely on technical aspects but also on market potential, business planning, strategic fit, and financing. For instance, many pharmaceutical companies involve experts in different therapeutic areas, as well as marketing representatives, in assessing drugs in development.

In addition, companies can impanel selection juries or create citizen assemblies among employees. If companies pursue this approach, they should also ensure that panel members feel that they can freely express their views, especially among senior managers and technologists. The benefits of diversity are realized only when people speak up and give voice to their different perspectives.

Use crowdsourcing principles, both internally and externally. The basic principle of crowdsourcing is that the collective wisdom of a large group can sometimes lead to a better outcome than a decision by a small number of experts. Companies can use this approach both internally and externally. In internal crowdsourcing, companies provide a fictional currency to all employees or a large group of individuals and let them “invest” that currency in the idea that they think has the most potential. BMW, for example, has experimented with giving shop floor workers a limited budget of blue buttons to prioritize among project proposals collected from the workforce.¹⁶ Siemens has used a prediction market to evaluate new ideas suggested by its employees.¹⁷ An interesting facet of these methods is that they sometimes point to conclusions that run counter to those of company executives.

Some companies also involve external crowds in innovation selection. Lego Ideas, a well-known crowdsourcing platform, lets people around the world share their ideas for new Lego sets, vote on proposed ideas, and indicate how much they would pay for them. From Lego’s perspective, this reduces demand uncertainty and indicates which ideas may be successful. Since the platform’s inception in 2014, Lego has received more than 100,000 ideas. By letting the crowd prefilter the best ideas, Lego has had to carefully evaluate only a small subset, which has



Some companies provide a fictional currency to employees and let them “invest” in the idea that they think has the most potential.

reduced the selection burden and allowed the company to focus its attention on the most promising ideas and their fit with Lego’s business model. Some products now on store shelves were originally developed through the platform.¹⁸

Use a workshop approach. Another way to assess innovation projects is to use workshops, which bring together experts from different fields to work together. The approach arose in the U.K., where government-funded research councils wanted to break away from the limitations of anonymous peer review, which tends to be conservative and intolerant of interdisciplinary projects.¹⁹ (In the U.K., these workshops are called “sandpits.”) Workshops bring together scientists working in a particular area for a weeklong intensive retreat, where participants discuss their research ideas, get feedback from other experts, and collectively select which projects will be funded.

Leave it up to chance. It may sound heretical, but some organizations are incorporating randomness into R&D decisions, particularly when choosing among projects of midlevel quality. (It is typically easier to find agreement about outlier projects — those that are either extremely promising or extremely weak.) For example, New Zealand’s Health Research Council created a lottery system for randomly allocating scientific funding. Scientists prepare a full proposal, and every proposal that meets a set of basic requirements is entered into the lottery. Hence, chance decides which initiatives get funding.²⁰

Given the difficulty of predicting outcomes for midlevel projects, random selection is likely to be as effective as educated guesswork. Recently, the Swiss National Science Foundation took up this practice. When reviewers cannot agree on a ranking of two or more research projects, rank is determined via a random drawing.²¹

Early research shows that these approaches can generate science of equal or better quality than the formal selection process.²² Of course, such methods are unlikely to fully replace other means of selection, but they can provide useful antidotes to conventional thinking.

Stage head-to-head comparisons. When companies need to rank a set of ideas, they can pit them against each other in head-to-head competitions. In

chess, this is known as an Elo comparison — named for Arpad Elo, a physics professor who developed the concept — but there are other methodologies as well. In chess, if you beat a good player, you move up much higher in the rankings than if you beat a low-ranked player. The strength of competition matters. Organizations can apply that same logic to select novel ideas. By comparing just two ideas with each other and repeating those comparisons across other combinations, companies can develop a ranking of ideas from best to worst. This approach simplifies the process of assessing a potentially overwhelming set of options.²³ For example, German auto manufacturer Smart used an Elo approach to help it select among several thousand designs for automobile “skins” from people in 110 countries.²⁴

Similarly, Shell used a head-to-head approach in an annual innovation competition that it ran from 2013 to 2018 with the goal of improving energy, water, and food sustainability. In 2018, after receiving over 1,100 ideas submitted from 140 countries, the company selected 72 of the most promising and then had them assessed by master reviewers and an external panel, which used head-to-head comparisons until a final winner was chosen.

► AFTER SELECTION

Finally, once organizations have determined which projects to green-light, they can take actions that help innovators develop more successful proposals, and help decision makers make better choices the next time.

Provide feedback on proposals. Selection panels should provide specific feedback on all proposals and make it accessible across the organization. This kind of feedback should help idea creators to better structure future submissions, alleviate the potential demotivating effect of having an idea rejected, and increase trust that the decision process is fair. And, critically, requiring this feedback creates an accountability mechanism that will encourage selectors to consider what motivated them to reject or accept a given project.

Ericsson has set up an online system called IdeaBoxes for collecting and managing employees’ ideas. Critically, the system includes moderators who are responsible for providing feedback within one month of an idea’s submission and explaining



Too few organizations conduct a systematic, quantitative review of their R&D selection process — in particular, of their failures.

why it has been selected or rejected. Because these comments are visible to the entire organization, employees can learn from their own and others’ experiences.²⁵

Similarly, Bristol-Myers Squibb has made significant changes to its selection process in order to increase fairness and the accountability of decision makers. Committees in charge of managing the company’s portfolio of drugs and deciding which compounds to progress through the pipeline are now required to communicate their decisions and provide feedback to R&D project leaders within hours. Most important, R&D project leaders are asked to complete a survey evaluating not only the selection process but also each of the individual members of the committee.²⁶

Track and learn from failures. Too few organizations conduct a systematic, quantitative review of their R&D selection process. In particular, organizations fail to capture sufficient information on their failures. A big component of cultivating a tolerance for failure is to show failures and learn from them. Without such information, it is difficult to know whether selected projects met expectations or whether the organization missed an opportunity that another entity ultimately pursued.

By monitoring outcomes of the selection process — both successes and failures — it is possible to assess how well the current selection process works. Such analysis will reveal not only whether the process can identify high-value ideas but also whether the pool of projects and/or creators fully reflects the wide range of talents and skills of the organization, and whether selection panels are overly risk-averse.

NO ONE WANTS TO be the decision maker who passed on a good investment — like the senior partner of venture capital firm Bessemer Venture Partners, who counseled one of Facebook’s founders, “Kid, haven’t you heard of Friendster? Move on. It’s over!”²⁷ Likewise, the Bic executives who green-lighted a pen for women that unsurprisingly failed in the marketplace almost certainly had regrets.²⁸ But there will always be some hits and some misses in the process of assessing innovation projects for funding. Our research shows that by understanding the potential pitfalls and improving the process,

companies can make smarter decisions and generate better outcomes. Innovation will always be tough to assess, but by creating a process that is more open, fluid, and collaborative, organizations can spot the true gold nuggets among the rocks.

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Break Out to Open Innovation

Working with an open corporate accelerator program allows Mercedes to more quickly incorporate new technologies from startups.

BY DENIS BETTENMANN, FERRAN GIONES, ALEXANDER BREM, AND PHILIPP GNEITING

Mercedes-Benz AG produces over 2 million passenger cars annually for a global market in the throes of transformation. Automakers are meeting new demands for electrification and connectivity, new competitors are arising, and customers have new expectations, such as the desire for sustainable mobility. All of these trends are driving the need to speed innovation in every facet of the automotive industry.

In 2016, R&D and digital business managers at Mercedes's headquarters in Stuttgart, Germany, realized that their efforts to collaborate with startups — a valuable source of external innovation — were being hampered by the company's existing innovation processes. Those processes were overly focused on internal development and ready-to-implement solutions provided by the company's established base of suppliers and weren't well suited to uncertainty-ridden collaborations with promising technology startups. The company needed an innovation pathway capable of more effectively integrating startups earlier in the R&D process and significantly reducing the time required to identify, develop, test, and implement their most promising technologies and solutions.

In response, a new team within R&D was formed to build a better bridge between the promising ideas of external startups and the innovation needs of Mercedes's internal business units. The team joined forces with partners from academia and industry to cofound Startup Autobahn, what we call an *open corporate accelerator* (CA). Unlike a conventional corporate accelerator — typically established by a single company for its own benefit — an open CA welcomes multiple sponsor companies and can attract a broader



array of more mature startups. This model, also known as a *consortium accelerator*, improves sponsor access to external innovation and enhances the overall competitiveness of regional ecosystems.¹

Startup Autobahn is operated by the Plug and Play Tech Center on the ARENA2036 research campus of the University of Stuttgart. Since its founding, it has attracted 30 large corporate sponsors (clients for startup solutions), including automotive OEMs and suppliers, as well as companies from other industries, such as IT, logistics, and chemicals. It has enabled Mercedes, in its role as a sponsor, to screen thousands of startups, execute more than 150 pilot projects, and implement 17 innovative solutions.

For instance, Mercedes worked with a startup named What3Words to jointly develop a voice-activated navigation system that guides users to precise locations by dividing the world into 57 billion 3-meter squares. It took less than a year to move from the first interaction with What3Words to the integration of its system into Mercedes's A-Class car models, a process that usually takes multiple years and complex iterations.

The need to expand and accelerate innovation is not unique to Mercedes or the auto industry. Incumbent companies in retail, financial services, health care, and many other industries are well aware of the competitive risks posed by the limitations of their innovation chains and startups' ability to rapidly exploit digital technologies.² They, too, are searching for new models of innovation that can transform startups from competitors into partners. Mercedes's experience shows how the open CA model can enable effective integration of startups into corporate R&D processes and accelerate innovation efforts.

An Upgraded Approach to the Corporate Accelerator

The open CA design differs from a conventional CA in two principal ways. First, it emphasizes and accelerates the strategic fit between sponsors and startups by nurturing only innovations that fill a gap in a sponsor's products and processes, instead of making a less-focused equity investment in the startup itself.³ Second, it harnesses the network effects of open innovation and platforms by inviting the participation of multiple sponsors, startups,

and other stakeholders rather than establishing exclusive sponsor-startup relationships.⁴

The emphasis on the strategic fit of sponsor and startup makes it more likely that a startup's solution will be successfully adapted and integrated into a sponsor's business.⁵ To achieve this, Mercedes has adopted a venture-client approach, which uses a proof-of-concept (POC) project funded by a business unit (BU).⁶ In this way, BUs validate and adopt startup solutions at low risk and cost, and startups receive the funding needed to develop and adapt their solutions without sacrificing an ownership stake.

To further streamline the innovation process, Mercedes grants startups supplier status from the beginning of their collaboration. This accelerates the passage of startups through the internal protocols that can slow engagement with external partners as well as the integration of the solution, if and when POCs prove out. For instance, startups are asked to sign only a narrowly tailored nondisclosure agreement, which reduces the legal friction that attends broad-based agreements. The expedited supplier pathway also eliminates some of the in-depth evaluation parameters that are designed to de-risk collaborations with established suppliers. This significantly reduces the time needed to get the collaboration started and sharpens the focus on assessing the potential of the startup's technology.

The network effects inherent to the open CA design offer sponsors greater access to innovative solutions: Multiple sponsors attract more startups. Because multiple sponsors share the cost of running the open CA, they all save money compared with establishing individual, conventional CAs. Conventional CAs need to invest in creating a strong scouting team and in building an excellent reputation to attract the best startups, whereas an open CA shares at least part of that burden among all platform partners. Additionally, if they choose, sponsors can enhance their startup partnering outcomes by exchanging best corporate practices among themselves.

There are downsides to an open CA model too, however. As in any open innovation scheme, individual sponsors have less control over the program structure and thematic focus of the platform. Individual sponsors also do not garner as much

brand visibility in an open CA as they might in a traditional CA, because sponsorships are not exclusive. To ameliorate some of these disadvantages, Startup Autobahn actively follows open innovation principles. It encourages sponsors to influence the selection of themes and technologies for each program and to share their ideas on how to organize and further improve the platform. Additionally, to compensate for the absence of individual visibility, it publicizes project successes to generate greater brand visibility for sponsors and startups.

Key Considerations in the Open CA Process

As with conventional CAs, there are three phases in the open CA process that Mercedes uses: scouting and selection, solution adaptation, and solution integration. Each phase has its own defining challenge, which Mercedes's CA team has used as a prompt for evolutionary improvements in the process.

PHASE 1: Scouting and Selection. Matching startup technologies to business unit needs is the defining challenge in the first phase of the open CA process. When the fit isn't right, conflicting expectations arise, POC projects tend to fail, and budding partnerships are cut short.

To avoid this, the Mercedes CA team tries to ensure that there is a strong match between BUs and startups early on. It hosts regular one-day Deep Dive events devoted to specific technologies, during which startups can meet interested BUs. The CA team also invites BUs to approach it with their specific needs or interests, and in response it

identifies likely startup candidates and arranges one-on-one meetings.

PHASE 2: Solution Adaptation. The defining challenge of the second phase of the CA process is proving that a startup's solution can fill specific sponsor needs. Typically, startups find that meeting sponsors' development requirements is an arduous challenge, especially in terms of quality and time expectations. The embryonic organizational routines and procedures of the startups tend to be too weak to ensure the delivery of the results that sponsors are expecting.

To meet this challenge, the Mercedes CA team helps startups and BUs jointly design and run POC projects. To narrow the innovation focus and clarify sponsor expectations, the projects have short timelines and explicit goals. Both features help startups focus on the critical success factors in the engagement. Typically, the timeline for POCs is limited to 100 days, during which the business unit and the startup work together to adapt the startup's solution for Mercedes's processes or products. Project outcomes are defined and milestones are set in advance to ensure that expectations are clear and measurable.

PHASE 3: Solution Integration. The defining challenge of the final phase of the CA process is implementing the solution at scale. Startups usually have multiple projects and demands competing for their attention, and they struggle to mobilize and prioritize the resources necessary to achieve scale. Meanwhile, sponsors struggle to sustain the continued commitment and active engagement of their internal participants in the face of day-to-day

THE OPEN CA MODEL VERSUS CONVENTIONAL ACCELERATORS

An open corporate accelerator such as Startup Autobahn differs from single-company-sponsored accelerators in four key ways.

	Open CAs	Conventional CAs
PARTICIPATION	Multiple corporate sponsors and startups	Exclusive sponsor-startup partnership
SOLUTION FOCUS	Late-stage startups with viable solutions	Early-stage startups with unproven solution concepts
EQUITY/INVESTMENT	Contracted solution funding; equity stake optional	Ownership or equity stake in exchange for program participation
PROGRAM FOCUS	POC project with business unit; solution scaling and implementation	Mentoring and/or scaling assistance via co-selling and customer access

operational demands and ever-shifting priorities.

Startup Autobahn supports a successful transition to the solution integration phase by hosting an Expo Day at the conclusion of all POC projects and the end of the adaptation phase. During Expo Day, representatives of the business unit and the startup share results and what they have learned with senior executives of the sponsor company, the media, and sometimes potential investors in the startup. Afterward, a decision is made: The solution is either integrated into products and processes through the BUs, or the collaboration is terminated.

The Mercedes CA team helps BUs and startups successfully manage the transition from solution adaptation to integration by ensuring that the startup's solution and team are well embedded within the sponsor organization. One way the team does this is by providing access to its internal network of contacts. This network acts as a tight support web, and it helps cushion the bumps in the path to solution integration. Its nodes help startups connect the dots within the sponsor company and make sense of often complex internal processes and initiatives.

Maximizing the Rewards of Open CA participation

Mercedes's ongoing participation in Startup Autobahn offers three insights into the ways in which corporate sponsors can make the most of the innovation opportunities offered in the open CA model.

Build internal commitment to external innovation. The innovation returns that corporate sponsors reap from open CAs are directly related to the level of commitment they can generate inside their own organizations. At Mercedes, this commitment is generated in three ways.

First, the CA team helps to identify existing technological "white spaces" within the business units, such as the need for a video recognition

technology that can support autonomous driving. Once a white space is identified, the CA team helps the BU to fill it by actively searching for possible solutions. The a priori agreement with the business unit on the white space helps establish and maintain the unit's commitment to finding a solution during the search. The CA team also provides a view into innovative solutions and technologies that are emerging beyond the business unit's radar. This not only opens unexpected paths to innovation but also generates increased trust on the part of BUs and a greater openness to the CA team.

Second, the staff time and funding needed to engage in POC projects comes from the business unit. This requirement bolsters BU ownership of the project and helps overcome "not invented here" syndrome. The CA team helps the BU stay focused on and committed to innovation goals by easing the workload around administrative and organizational processes. Toward this end, the CA team will use its support network to help align internal stakeholders (in functions such as IT, legal, purchasing, and communications) around the project.

Third, the CA team ensures that the BU's commitment to external innovation is rewarded. One way it does this is by stepping back and ensuring that BU managers get credit for successful solution adaptation with senior management at events such as Expo Day. This exposure not only bolsters the motivation of the business unit managers but also raises the probability of a successful solution integration and a long-term relationship with the startup, thus fulfilling the *raison d'être* of the CA team.

Embrace co-opetition. Maximizing the benefits from the open CA model requires an explicit willingness to establish cooperative relationships with competitors.⁷ Startup Autobahn creates an environment of co-opetition among its sponsors and startups from the first Deep Dive of a new



The corporate accelerator team helps business units and startups manage the transition from solution adaptation to integration by ensuring that the startup's solution and team are well embedded within the sponsor organization.

technological program until the Expo Day for each POC project it spawns. Multiple startups may offer similar solutions, and multiple sponsors compete to attract the best startups. Sometimes multiple startups will work together with a sponsor in one project, and sometimes multiple sponsors work together with a startup in a project. Sponsors will also share best practices for engaging with startups and managing successful POCs.

Co-opetition benefits individual sponsors and the region's industrial ecosystem. It enables the continuous improvement of Startup Autobahn's program structure and activities. It also results in higher overall levels of innovation, with more POC projects running concurrently and making faster progress.

Choose a playing field. Sponsors in an open CA can improve results by setting parameters for the kinds of startups, technologies, and applications they choose to pursue. Setting a priori search parameters helps them avoid ending up with an unmanageable portfolio of projects.

In running more than 150 POC projects, the Mercedes CA team has found that having a mix of projects — in terms of technologies, incremental and breakthrough innovation, and risk levels — delivers the best returns. But this requires caution in the scouting and selection phase, because the early decisions about which innovations to pursue directly influence the scope of outcomes in the solution adaptation and integration phases.

A mix of process- and product-related applications is also desirable, particularly when the BU is producing complex products with many interdependencies. In general, product innovations tend to have longer implementation timelines with higher solution integration risk, whereas process innovations tend to have shorter implementation timelines, with a lower risk of integration challenges.

The CA team has also found that working with startups that are located nearby accelerates POC development and is more likely to result in a positive integration decision. In addition, engaging with later-stage startups increases the chances that a POC project will deliver a functioning prototype.

THE OPEN CA MODEL REQUIRES lower levels of investment than the conventional CA model. It reduces the uncertainties of working with

early-stage startups with unproven solutions. And, as Mercedes has discovered, it produces more successful implementations in less time.

As the pace and intensity of the technological transformation continues to increase, incumbent companies across industries are finding it difficult to fulfill their innovation needs internally. An open CA, as typified by Startup Autobahn, offers a model for expanding and enhancing access to external sources of innovation.

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Setting the Rules of the Road

Put the right rules in place to orchestrate a platform that creates value for all participants — and helps manage risk.

BY ULRICH PIDUN, MARTIN REEVES, AND NIKLAS KNUST

The rapid rise of a few powerful digital ecosystems disguises a harsh reality about this business model: Less than 15% of business ecosystems are sustainable in the long run.¹ When we examined 110 failed ecosystems in a variety of industries, we found that more than a third of the failures stemmed from their governance models — that is, the explicit and/or implicit structures, rules, and practices that frame and direct the behavior and interplay of ecosystem participants.²

Business ecosystems are prone to different types of governance failures. One reason why the BlackBerry OS lost its competition with Apple's iOS and Google's Android was because Research In Motion failed to open its app ecosystem widely to developers until it was too late.³ Conversely, the video game industry fell into recession during the so-called Atari Shock in the 1980s in part because of overly open access to its ecosystem, which resulted in a flood of inferior games. Badly behaved platform participants, conflicts among ecosystem partners, and backlash from consumers or regulators are other indicators of governance flaws that can bring down an ecosystem.⁴

Many orchestrators struggle to find an effective governance model because managing an ecosystem is very different from managing an integrated company or a linear supply chain. Ecosystems rely on voluntary collaboration among independent partners rather than clearly defined customer-supplier relationships and transactional contracts. The orchestrator cannot exert hierarchical control but must convince partners to join and collaborate in the ecosystem. These challenges are exacerbated by the dynamic nature of many ecosystems, which develop and evolve quickly and continually add new products, services, and members.

Ecosystem leaders who understand the components of a comprehensive governance model and glean insights from ecosystem successes and failures can make more informed and explicit governance decisions. In doing so, they can improve the odds that their ecosystems will be among the lucky few that survive and prosper over the long term.

The authors studied the governance models of more than 80 business ecosystems from different domains and tracked their evolution over time.

They then developed a profile to describe, measure, and compare ecosystem governance intensity and applied it to derive four recommendations for using ecosystem governance as a source of competitive advantage.



The Key Components of Ecosystem Governance

Good governance supports an ecosystem's ability to create value, manage risk, and optimize value distribution among its partners. To wield governance in support of these ends and capture a competitive advantage, ecosystem orchestrators cannot treat it as an afterthought. Instead, they must systematically think through and actively design the following five elements of their ecosystem's governance model. (See "Ecosystem Governance Framework," p. 46.)

Mission. A strong sense of shared mission is a potent instrument for attracting and retaining ecosystem partners and encouraging desired behaviors. Orchestrators who identify a clear and distinctive ecosystem purpose early in development and anchor it in a well-articulated set of values can motivate and align partners, particularly when this involves solving a significant problem or making an important contribution to society. An ecosystem's purpose and values also can help orchestrators attract and retain the right partners and encourage desirable behaviors without undue reliance on complex rules and written standards.

Access. Controlling access allows an orchestrator to select only those partners and participants that meet specific requirements and agree to certain standards and behaviors, and to exclude all others. The rules governing access also can help determine partner commitment by requiring an investment or offering an incentive for joining the ecosystem and/or defining the level of exclusivity that partners must provide to the ecosystem.

Participation. Participation is controlled by the distribution of decision rights and the degree to which partners are invited to contribute to the formulation of ecosystem governance and strategy over time. It also includes the rules for conflict resolution among ecosystem stakeholders. Transparency is critical: Partners need a clear view into the rules and strategy of an ecosystem to actively participate in it and determine their own strategies. Offering partners a high degree of participation in discussions of governance and strategy can bolster their commitment and willingness to invest resources in an ecosystem.

Conduct. Orchestrators can directly influence the behavior of participants in their ecosystem using input control, process control, and output

control. Input control, which is often automated using application programming interfaces (APIs) or integrated development environments, specifies the requirements for the partners' contributions to the ecosystem, including standards and instruments of quality control and the approval of new contributions. Process control uses prescribed procedures and technical standards to regulate the behavior of partners as they interact with one another and the platform. Output control uses mechanisms such as customer feedback, curation, or algorithmic control to regulate the quality of products and services delivered through the ecosystem.

Sharing. The final building block of ecosystem governance defines the data and property rights of partners and the distribution of value among them. Data and property rights regulate ownership and use of the data and intellectual property that are contributed to — or created within — the ecosystem. Value distribution takes various forms, such as a market-based approach that allows partners to set their own prices; coordinated pricing and negotiated value distribution; and centralized pricing and value distribution that is determined solely by the orchestrator.

Using these five elements as a lens to analyze the governance models of more than 80 business ecosystems in a variety of industries yielded four

foundational recommendations that can guide ecosystem leaders.

1. Align your ecosystem's governance model with its strategic priorities.

The strategic priorities of business ecosystems vary by their competitive situation and developmental maturity. No matter what the strategic priorities of an orchestrator, the dimensions of governance can be manipulated to support their attainment.

Ecosystem growth, for example, can be fostered by lowering entry barriers, easing the controls on conduct, and/or offering a more generous distribution of value. The Android ecosystem used all of these governance levers to gain scale in the early days of its competition with iOS. Google maximized access by opening it to all developers. It used open-source coding that offered partners the freedom to introduce variations and to integrate their own applications. To attract and support the developer community and spark innovation, Google initially awarded cash prizes to developers for superior applications.⁵

The governance model can help orchestrators maintain the quality of an ecosystem's offerings. Belay does this by controlling access: It allows only qualified suppliers of virtual support services, such as administrative assistants and bookkeepers, on its gig economy platform. Kiva, the nonprofit

ECOSYSTEM GOVERNANCE FRAMEWORK

Ecosystem orchestrators can create an effective governance model by working through the questions for each of the five core elements.

ELEMENTS	DIMENSIONS	KEY QUESTIONS
Mission	Purpose	What is the common purpose that aligns the stakeholders of the ecosystem?
	Culture	What is the common set of values that guides the stakeholders of the ecosystem?
Access	Entry	Who can participate in the ecosystem, and under which conditions?
	Commitment	Which specific co-investments or level of exclusiveness are required?
Participation	Decision rights	How are decision rights distributed among ecosystem stakeholders?
	Transparency	How transparent are the governance model and strategic road map?
	Conflict management	How are conflicts between ecosystem stakeholders resolved?
Conduct	Input control	Which requirements regulate the contributions of stakeholders?
	Process control	How are the behaviors and interactions of stakeholders regulated?
	Output control	How are the products/services generated by the ecosystem regulated?
Sharing	Value distribution	How is the value created by the ecosystem shared among stakeholders?
	Data rights	What are the rules that regulate data ownership, access, and use?
	Property rights	Who owns the (in)tangible assets created by the ecosystem?

SOURCE: BCG HENDERSON INSTITUTE

crowdfunding platform that created a field partner network spanning 76 countries to make loans to low-income entrepreneurs, uses the conduct element to ensure loan quality. It has a strict process control system that defines every step on its platform, from applying for loans to underwriting, approving, and posting them; raising and disbursing funds; and receiving loan payments. The online publishing platform Medium uses the dimension of value distribution to incentivize the creation of high-quality content: It pays the writers in its partner program based on the level of reader engagement their articles generate.

If the strategic focus is on improving alignment among the partners of an ecosystem, again the different dimensions of governance can help. The smart-farming platform FieldView uses the dimension of entry to create alignment. It hand-picks its partners to ensure that each offers unique services that complement its overall offering, and it uses individual partner contracts to specify the products and services that partners are allowed to offer.⁶ The Linux open-source operating system creates alignment among its developer community by leveraging several governance dimensions: a common mission, strict technical guidelines and processes for conduct, and administrative decision rights that are assigned to specific users.

Generally speaking, very open governance models support a *rain forest* paradigm, in which a diverse set of autonomous players bolster systemic creativity and adaptability. Such models are well suited for ecosystems that must react quickly to changing technologies and customer preferences and whose strategic focus is rapid growth, exploration, and decentralized innovation. In contrast, very closed governance models support a *walled garden* paradigm by enabling consistency, alignment, and control. They are preferred when an ecosystem's strategic priorities are focused on ensuring quality, improving efficiency, and coordinating innovation that requires committed partners.

But the strategic priorities of ecosystem orchestrators are rarely this clear-cut. Often, they have competing priorities, such as the need to promote a diverse set of participants while also ensuring the quality of their offerings. Finding the right balance between the two paradigms can mean the difference between success and failure.

Nuanced choices regarding the dimensions of governance can help orchestrators simultaneously achieve conflicting objectives. Apple's iPhone ecosystem, for instance, achieved rapid growth by offering low-barrier access to app developers while at the same time ensuring a high level of quality and consistency by centralizing decision rights and using extensive quality checks before approving newly developed apps for the platform.

2. Use your governance model to stand apart from competitors. Just as countries and companies compete and prosper depending on the quality of their governance, so too can ecosystem governance serve as a source of competitive differentiation.⁷ This is particularly noticeable when the orchestrators of competing ecosystems come from different industries. In smart mining, equipment manufacturers Caterpillar and Komatsu have built closed ecosystems focused on their own products, whereas technology companies like Dassault Systèmes and Cisco are building universal internet-of-things platforms that are more open to third parties.

When orchestrators are in the same sector, they can develop different governance profiles to differentiate their competing ecosystems. In the smart-home arena, Apple established a rather closed governance model for its iHome ecosystem compared with competitors Amazon, Google, and Samsung. The key differences in the governance of Apple's ecosystem include stricter access rules, extensive quality control for new applications, and more restrictive data-sharing policies.⁸ The company is trying to differentiate itself with a more coherent user experience, even though this could limit its growth rate.

The orchestrators of new ecosystems can adopt an open governance model to counter the network effects enjoyed by incumbents.⁹ By 2004, Microsoft's Internet Explorer had won the browser war after capturing nearly 95% of the market. With no serious competitors, however, Microsoft under-invested in the browser's development and took a relatively closed approach to third-party innovation. Google countered with an open governance model for the Chrome browser and opened a web store for third-party Chrome applications in 2011. Its browser became the market leader soon after.¹⁰

Of course, no competitive strategy is risk-free. Orkut, Google's first attempt at a social network,

was launched in 2004, the same year as Facebook. Facebook initially followed a closed governance model, limiting access to users with university email accounts and allowing them to interact only with users at their schools.¹¹ It later opened up access but kept relatively strict privacy controls in place. In contrast, Orkut decided to compete on the basis of an open governance model. The platform applied fewer restrictions on user behavior and less-strict privacy controls than Facebook. This resulted in fast initial growth, but also in many fake profiles and lower-quality interactions, which contributed to Orkut's demise in 2014.¹²

Moreover, while competing ecosystems initially experiment with diverse governance models and use them for competitive differentiation, over time the more successful models eradicate the weaker ones. As orchestrators learn what works and as competition becomes more oligopolistic, governance models tend to converge. In December 2019, a group of large players that included Amazon, Apple, and Google launched the Connected Home over IP alliance to increase the compatibility of smart-home products for consumers, a move that will lead to greater harmonization of their governance models.

If one ecosystem gains a competitive advantage by adapting its governance model, others may be forced to do the same to keep up. For example, most of today's social media networks have similar governance models and tend to move in lockstep on emerging issues, such as establishing independent oversight boards for content curation.

3. Use governance to ensure social acceptance.

Societal and regulatory scrutiny of ecosystems is on the rise. Sharing-economy and gig-economy platforms are coming under fire for avoiding costly requirements related to safety, insurance, hygiene, and workers' rights. Social networks are criticized for lax data privacy policies and the dissemination of false and misleading information. E-commerce marketplaces are accused of undue price pressure and unfairly giving their own products an advantage. There are mounting concerns about the alleged concentration and misuse of power by dominant digital platforms.

Despite and perhaps due to their great success, an increasing number of orchestrators see their ecosystems being challenged by regulators, and they run

the risk of being broken up or losing their licenses to operate. Beyond regulation, the mutual trust that is foundational to the success of an ecosystem is threatened: In previous research, we found that a lack of trust critically contributed to over half of the 110 ecosystem failures we studied.¹³

Thus, good governance is rapidly becoming a prerequisite for building social capital and securing the social legitimacy required by business ecosystems. To meet this dictate, orchestrators must understand that it is not sufficient to optimize the value proposition and experience of customers; they must also enhance the value and experience of other ecosystem contributors and external stakeholders. Moreover, the governance model must be designed to engender and maintain social acceptance, as well as legal compliance, over the long term and in the face of changing demands. Superior governance, understood in this way, must be consistent and fair.

Consistency means that the mechanisms of governance are transparent and easy to understand, comprehensive, internally consistent, and stable over time. HopSkipDrive uses consistent governance to establish trust for its particularly sensitive offering: ride-sharing services for children. The platform accepts only drivers who adhere to multiple ecosystem guidelines and have at least five years of caregiving experience; a clean multiagency, fingerprint-based background check; and a good driving record for at least the past three years. It employs strict process control, tracking each ride in real time to detect unsafe driving behavior and proactively address any issues. Moreover, the platform regularly reports on the frequency of safety-related issues such as traffic incidents, collisions, and distracted driving.¹⁴

Fairness means that governance complies with local laws and norms, avoids biases (for example, in data algorithms and access), and creates trust among participants (for example, by forbidding the misuse of orchestrator power). The importance of fair governance is illustrated by the recent rise of platform cooperatives. These platforms, which include hospitality platform Fairbnb.coop, ride-hailing service The Drivers Cooperative, and stock photography platform Stocksy United, are owned and governed by their contributors.¹⁵ Many of

them have emerged in reaction to exploitation by ecosystem orchestrators.

4. Adapt your governance model over time.

Adaptability is a key strength of a successful ecosystem. Typically, this adaptability stems from a modular setup that features a stable core (or platform) and interfaces, with highly variable components that can be easily added or subtracted. This enables ecosystems to evolve along with changes in the competitive environment, the needs of orchestrators and participants, social mores, and technology. This same kind of adaptability must also be reflected in the governance model of an ecosystem.

Consider Steam, the video game distribution platform. Originally launched in 2003 as an online platform for the distribution and patching of Valve games, its initial governance model was rather closed. In 2004, some 50 titles were available on the platform. Then Steam started to open up by lowering the barriers to entry, reducing input controls, and negotiating its first partnerships with game publishers. The number of available games quickly doubled.

Between 2007 and 2010, Steam further opened to external developers with the launch of the Steamworks software development kit and a number of APIs that facilitated data sharing with partners. Major publishers joined the platform, driving the total games available to more than 1,000.

Over time, Steam increasingly relied on user-based mechanisms for governance of the ecosystem. For example, in 2012 it introduced Greenlight, which allowed users to vote on which new games would be added to the platform. User feedback and reviews became increasingly important for the output control needed to secure the quality of the platform's games.

Another major shift in governance took place in 2017, when Valve recognized that, with the growing size of the Steam ecosystem, Greenlight had become a major bottleneck for onboarding new developers and games. Accordingly, it replaced Greenlight with the Steam Direct submissions portal for developers, to further reduce entry restrictions and input control while relying on more effective user feedback mechanisms to ensure quality. By 2020, Steam had evolved into a very liberal and open ecosystem, with more than 10,000 games and 120 million monthly active players.

Steam illustrates a phenomenon that we see in many successful ecosystems: They tend to start with rather closed governance and become more open over time. One reason for this: The development of an ecosystem is strongly path-dependent, with early decisions having a significant impact on the trajectory and future scope of the ecosystem. Hence, many ecosystem orchestrators prefer a closed governance model at the beginning to control quality and behavior and to get the ecosystem on the path to success.

There is one caveat: While most business ecosystems tend to become more open as they grow, some ecosystems begin to tighten governance once they reach a certain size and market position. This can be a reaction to misuse of the platform, such as ride-hailing services reinforcing background checks for drivers after passengers are attacked, or to public or regulatory pressure, such as social networks strengthening input control to prevent the spread of misinformation during the pandemic.

The orchestrators of successful ecosystems also tighten governance to increase their own value capture, particularly if they have achieved a leading market position and partners are increasingly dependent on the platform. Reinforcing the rules for participation, conduct, and sharing are the most effective levers for achieving this. Google tightened its grip on Android after handset manufacturers and other partners began developing variations of the operating system that were incompatible with some applications and made it difficult for Google to profit from the platform by selling advertising and software.¹⁶ By moving the APIs for app development from the operating system layer to the Google Play app store, the company regained control of large parts of the Android ecosystem and could adapt its governance largely independently of the underlying operating system.¹⁷

AS ECOSYSTEMS BECOME more widespread and established, the quality of their governance is an increasingly important success factor. But there is no single best way to design your governance model: It will be contingent on the strategic priorities, competitive dynamics, societal demands, and life-cycle stage of the ecosystem.

If you are—or want to become—an orchestrator, you should not treat governance as an afterthought but should instead think through and actively design the governance model. You need to understand the benefits and risks of being open or closed, align governance and strategy, and resolve strategic trade-offs by balancing the different dimensions of governance. You ought to put yourself into the shoes of ecosystem partners and users to understand the impact of your governance decisions on their incentives to participate and contribute. You should also analyze the governance models of competing ecosystems and use your governance choices to gain competitive advantage. And you will have to adapt your governance model over time to react to changes in user preferences, technology, competition, and strategy.

If you are joining an ecosystem as a partner, you need to understand how its governance model works and evolves over time. An ecosystem's governance will strongly influence how attractive it is for you. You should consider governance as an important criterion for deciding in which ecosystem to participate by asking yourself several questions: How well does the purpose and culture of the ecosystem resonate with your values and preferences? What kinds of commitments and ecosystem-specific investments are required that may limit your future flexibility? Are the transparency and decision rights that you need to understand and influence the development of the ecosystem in place? To what extent do regulations for input, process, and output limit your customer access and freedom to operate? And are regulations in place that ensure that you benefit in a fair way from the data, intellectual property, and value that you contribute to the ecosystem?

Good governance is an essential key to the success of both ecosystem orchestrators and their partners.

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Use Networks to Drive Culture Change

Surveying employees about their values has its limits. You'll gain more insight into organizational culture—and find targeted ways to change it—by also analyzing patterns of collaboration.

BY PETER GRAY, ROB CROSS, AND MICHAEL ARENA

Few habits are harder to break than “the way we do things around here.”

Organizational culture is notoriously difficult to change, in part because it reflects people’s values—their deeply held beliefs about what is good, desirable, and appropriate.¹ Relationships can complicate matters further. When colleagues are embedded in informal networks with others who share and reinforce their values, they often become entrenched rather than open to new attitudes and behaviors.

But it doesn’t have to be like that. Those same networks can also help leaders identify and overcome obstacles to cultural change and discover unexpected allies.

Our research and practical experience have shown that many leaders aren’t aware of this potential, largely because traditional assessments of organizational

culture tend to focus on finding commonality.² One popular approach is to use surveys to assess employees' values, attitudes, norms, and behaviors and then average the responses to gauge where the organization as a whole stands. Another approach is to conduct deep interviews and then craft personas illustrating how "typical" employees' values guide their behaviors. Because these approaches reveal central tendencies, they miss powerful insights about where people differ in their values. Rather than calculating an average score — say, a 4 — on a given value, leaders need to know where the pockets of 3s and 5s (and even the clusters of 1s and 2s) are. And they need to see who is interacting with whom within and between those pockets and clusters if they want to persuade people to embrace new cultural priorities.

Combining survey data with network analysis is a useful way to gain that insight. (See "Map Your Team's Values.") Mapping patterns of collaboration in an organization provides a kind of X-ray view of its inner workings. It shows, for example, where people are separated by silos in a network, who is isolated on the periphery, which individuals are opinion leaders, and which ones are uniquely situated to connect people and integrate different values.³ Once leaders know all that, they can pursue cultural change in a more targeted manner.

We have seen more than 40 examples of leaders taking this approach over the past five years. By analyzing what's worked for them, we have identified five ways to drive culture change through informal networks.

1. UNEARTH THE SUBCULTURES

Organizational culture can describe the predominant beliefs, values, and behaviors of the organization as a whole, but subgroups like functions, divisions, or geographies have their own cultures as well.⁴ Leaders often think about the culture of their piece of the organization and take action at that level — the CEO for the whole organization, senior executives for their specific units, and so on. But culture is only partially influenced by formal organizational structures; it is also shaped and reinforced by subnetworks of employees who may represent one slice of a formal unit, for instance, or be spread across many different

units. Leaders who can see the diversity of values that exist in different cultural subnetworks can take much more precise action to support or change these subcultures.

Let's look at an example. At a global consumer packaged goods company that had recently made a large acquisition, top leaders were asked to identify the most important priority for the newly integrated company. Instead of showing consensus, they produced a list of 18 *different* top priorities, many of which were in conflict with each other.

Next came a network analysis and a culture survey asking employees to indicate which was the *real* top priority. The most-selected priority was "drive strong growth in existing brands," but agreement was far from uniform. Rather than simply mobilize around this as a unifying priority (a typical action after a standard culture survey), leaders turned to network data to better understand how people's informal connections shaped their beliefs.

This revealed two distinct opportunities for change. The first focused on well-connected cultural outliers: influential people who held strong beliefs that diverged from those around them. Leaders asked passionate proponents of branded products to connect with these cultural outliers to hear their concerns and then share their own enthusiasm for and successes with branded products. Seeing others' enthusiasm often helped the outliers reconsider their own beliefs and become more productive partners, and it sometimes also helped brand enthusiasts better see their own blind spots.

In one case, a product manager who was a strong proponent of a branded food product had grown frustrated with the small budget allocated to her every year for important promotional projects. Despite their high ROI, many of these projects were routinely denied funding, but it wasn't until she saw the results of the network and cultural analysis that she realized she was being blocked by an outlier: a well-connected senior manager in the division's finance group who had negatively influenced the funding decisions made by several of his subordinates.

After giving the problem some thought, the product manager invited the finance manager to an annual competition the company hosted, where consumers brought creative dishes that used the company's product in innovative new ways. The

MAP YOUR TEAM'S VALUES

By overlaying survey data about individuals' values onto network analysis, leaders can find and address obstacles to cultural change in their team or organization.

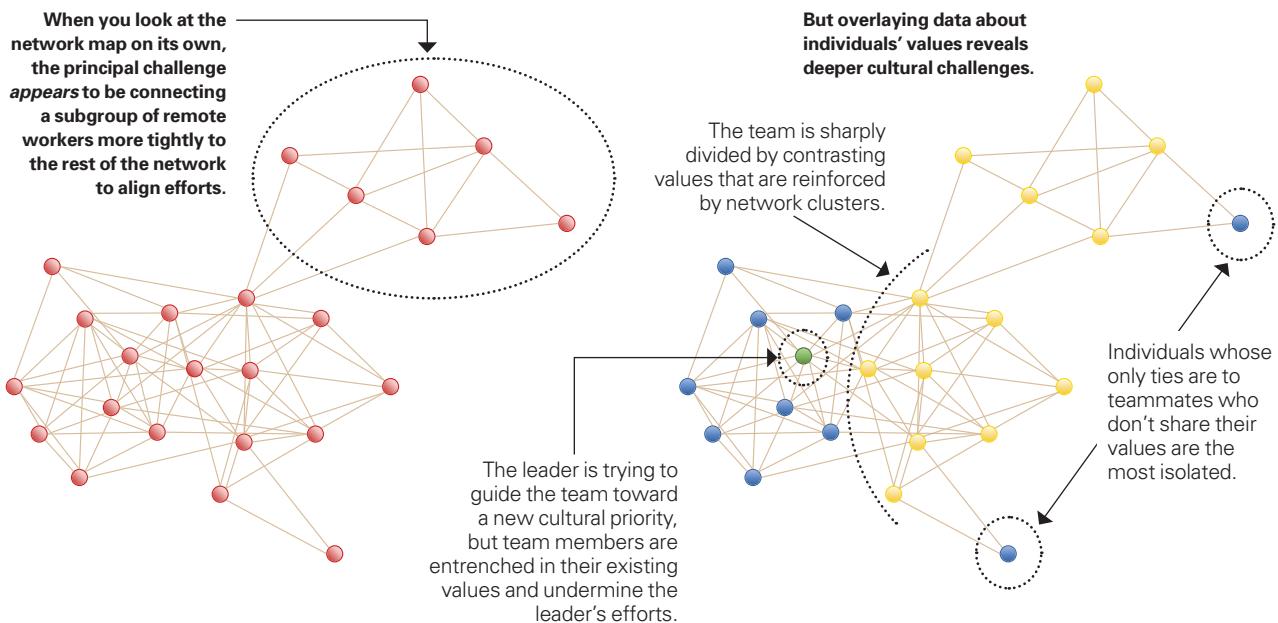
Consider this example from a large industrial materials company where we mapped network connections throughout the organization: Within one 24-person client-focused team, most people were well connected, but a cluster of six remote workers was only tenuously linked, as depicted in the graphic below. Overlaying data about team members' values revealed that integrating these six people wasn't the biggest problem the leader faced — there was a sharp divide in values across the entire team. Around half the team

members (shown in blue) were cautious and focused on following rules and established processes when working on client sites. They saw themselves as the first line of defense in controlling risk, liability, and quality, and they mostly clustered together. The other half (shown in yellow) prioritized customer service; they saw themselves as troubleshooters who fixed problems first and addressed risk later.

The team's leader had been trying to establish a new cultural value of shared accountability with customers that had not yet taken hold, and network analysis helped us understand why.

The analysis highlighted challenges that had been invisible to the leader. Individuals

were anchored in their subgroup's strong feelings about being safe versus being responsive, resulting in an "us versus them" dynamic in the team. The leader's attempts to create shared accountability caused even greater entrenchment, as each subgroup protected its perspective. And two highly skilled employees had checked out because of this battle. Their only network ties were to people with contrasting values; lacking allies, they withdrew. Once these problems were revealed, the leader could address them head-on through listening sessions and workshops that got to the root of employees' different beliefs. This made it possible to slowly rebuild a new shared culture from the ground up.



dishes would be judged by a panel of tasters, several of whom were in both managers' networks. The lighthearted and sometimes raucous event opened the finance manager's eyes to how much consumers loved the product and how much his own colleagues cared about it. Before, he had considered the product to be stale, but the product manager's unthreatening approach gave him space to adjust his beliefs. He soon became a supporter — and his decision making became more closely aligned with the cultural priority of promoting growth in existing brands.

The second opportunity for culture change focused on disagreements among subnetworks, which leaders sought to reframe as expressions of different

underlying aspirations, without passing any judgment on what was right or wrong. Rather than ask any subnetwork to change its views, leaders worked with them all to discover how they each could contribute productively and advance the organization's strategy. The network data helped leaders identify the best-connected people in each subnetwork, with the goal of bringing them together to generate ideas that would diffuse well to others.

Some subnetworks were encouraged to push even harder in the direction in which they were already leaning. In one instance, this meant creating a team of employees who were much more excited than others in their product group about developing

brands that were entirely new. They were tasked with using their skills in product development, consumer research, and materials science to pursue bold ideas that were not tied to existing products. Their efforts were positioned as a complement to the overarching strategy, not a departure from it, which helped the new team strike out in new directions while retaining the ability to reach back to harness expertise from others who were more committed to existing branded products.

2. FIND YOUR REAL CULTURAL LEADERS

For years, senior leaders have been taught that they have a key responsibility to define and diffuse culture.⁵ As a result, they often invest considerable effort in crafting powerful statements on important new values or behavioral expectations, and they then either communicate them directly to employees or cascade them down the leadership hierarchy.⁶ Formal leaders do facilitate culture change, of course, but our work reveals that they don't do it alone. Informal influencers deep inside the organization are critical — but often hidden — enablers of change. Enlisting their help is far more efficient than taking a top-down approach.

Many leaders cascade messages through offsite meetings that bring managers together to clarify values or priorities. Progressive companies might also include employees whose opinions seem respected by peers. Unfortunately, while these additions may create a sense of being inclusive, our research has shown that by guessing who is important, companies typically miss at least half of their true cultural influencers.

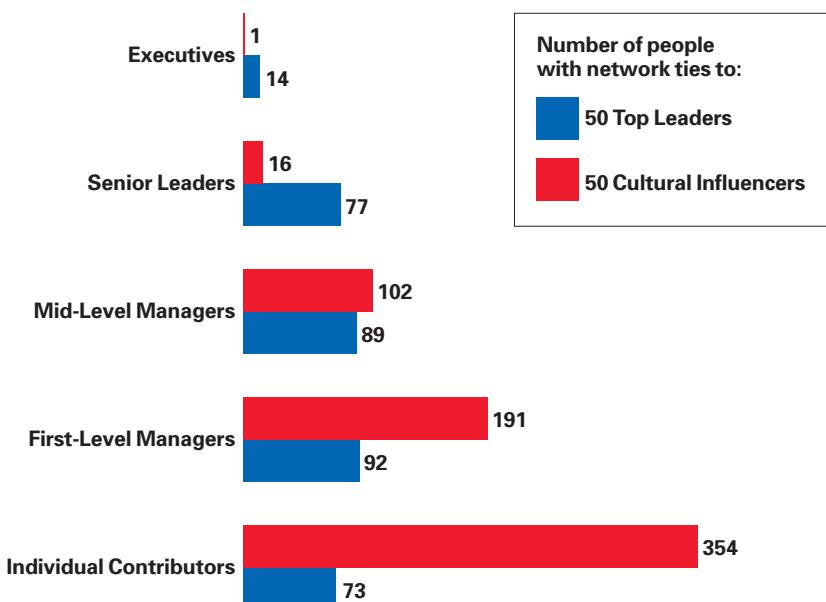
This is a critical oversight. Most employees learn about culture from informal conversations that signal which colleagues they should take seriously, what to care about, and "how we do things around here." And network influencers shape those conversations considerably. Executives and senior leaders tend to connect well with others at the top of the hierarchy but poorly with those at the bottom. In contrast, informal influencers have limited reach into senior levels but widespread impact everywhere else. In one organization we studied — a 1,100-person division at a well-known manufacturer — the top 50 informal influencers had ties with 60% of the employees, whereas the top 50 senior leaders had ties with only 31%. (See "Formal Versus Informal Influence.") If you were going to invest time and money in critical change efforts, why would you focus on the group with *half* the reach that the other one has?

When an organization resists change, informal influencers can form the nucleus of broad-based movements that may succeed where top-down approaches are likely to fail. Here's an example to illustrate how that can work.

One global bank struggled with developing new customer-focused technologies because different functions valued their own specialties but denigrated others. To spearhead a cultural shift, leaders used network data to identify 80 informal influencers in four functions: technology infrastructure, software development, marketing, and customer service. They were selected not only because they were well regarded by many in their home function but also because they had ties to influencers in other functions. The organization also recruited a number of disgruntled customers who personified emerging markets that the bank did not yet serve well: a gig-economy millennial who never carried cash, a micro business entrepreneur, and so on.

FORMAL VERSUS INFORMAL INFLUENCE

In a large division at a manufacturing company, senior leaders connect well with others at the top but poorly with those at the bottom of the organization. They also have half the total reach that informal influencers do.



Leaders brought the influencers and customers together in a design thinking program.

In a series of workshops, attendees were split into teams of eight (comprising two people from each functional area). Each team worked with a disgruntled customer, whose presence quickly transformed employees' attitudes. Instead of pointing fingers at one another to deflect blame as usual, team members found themselves drawn into understanding the customer's underlying needs. They engaged in "What if?" thinking and quickly came to envision new offerings the bank could explore. The ideas were important, of course, but the real win from these workshops was the way they helped people understand the value that colleagues in other functions brought to the process.

Once the employees' minds were opened, the workshop leader asked them the question that he had been holding back: How should the bank's culture change to support this kind of customer-focused innovation? Having spent all day working with people from other functions, attendees saw how they were stronger together. Although the verbiage differed, many of the responses gathered from the various workshops pointed to the same desired values: respect for others' positions, joint accountability for competitive success, and joint ownership of the customer experience.

After engaging in these workshops, the informal influencers felt ownership of the values they had cocreated and, in the ensuing weeks and months, spread them through local conversations within their functions. As they shared their personal excitement about the new possibilities, they inspired others to see cross-functional collaboration in this new light. The change-initiative leader reflected, "We have tried design thinking efforts around customer needs before, but things always fizzled out. Finding the influencers and bringing them together was the thing that made this such a success."

3. SHINE A LIGHT ON HIDDEN TENSIONS

Leaders of change efforts have long been counseled to form a powerful guiding coalition that can address employee resistance.⁷ But that's easier said than done. Small, hidden disagreements throughout an organization have a way of slowly and quietly killing change initiatives — the proverbial

death by a thousand cuts. Analyzing network and cultural data can bring these tensions to light so leaders can manage them.

For example, a technology organization we studied had been plagued by problems as it sought to drive a cultural change and had struggled to pinpoint sources of resistance. The CEO conducted a broad listening campaign, complete with town halls, but his well-intended efforts to persuade people to change by hearing them out and addressing their concerns seemed to make them *less* willing to talk about their values, for fear of being publicly corrected. As a result, nothing changed.

A new CEO brought a renewed emphasis on culture, but this time with the goal of making dissent and disagreement more constructive. A combination of network and cultural data uncovered two kinds of problems: (1) toxic misalignments, where cultural influencers with very different values interacted in negative and dysfunctional ways, and (2) unresolved standoffs, where cultural influencers had positive connections with one another but disagreed about fundamental cultural values.

One of the toxic misalignments involved strong disagreement about monetizing user data; some influencers felt that selling customer data to third parties was inappropriate, while others supported doing it on the basis that it simply helped third parties market more efficiently. The former group viewed the latter as unethical, and the latter group took great offense. Their conflict spilled over into meetings and other interactions that had nothing to do with data monetization, undermining progress on a range of fronts. A senior executive stepped in and arranged to meet with important influencers on both sides. "Pretend that you are just about to retire," she said. "In an ideal world, what accomplishment regarding customer data can you imagine that you would be most proud of?" She asked people to write down their answers.

When she read the responses aloud, they had far more in common than anyone would have guessed. The underlying tension wasn't between doing what was best for customers and what was best for the company. No one was out to exploit customers, but people had arrived at different conclusions about what was ethical. After some discussion, they began to explore ways to generate more benefits for

customers through data sharing and how that could be accomplished while respecting their privacy. Now that they had agreed on the overarching value of respect for customers, their tension was productive.

Like marriage counselors, highly skilled facilitators know that an appeal to a higher shared value can resolve a deadlock, but only after uncovering value misalignment and discovering who sits on which side. Network analytics can be used to identify where the influencers are on each side of a disagreement; they are always distributed throughout the network and never in a single role, function, or geography. Analytics can also be used to determine the nature of the influencers' interactions — positive, neutral, or negative. Leaders can then see and address dysfunctional relationships that are fueling the conflict.

Unresolved standoffs, in contrast, involve influencers who have no reason to mistrust each other but whose disagreement about a cultural value harms their productivity. Here's an example that we found in the same technology company, after a restructuring brought three disparate functions — organizational development, process improvement, and software development — into the same unit. Despite good intentions and shared objectives, six months later, the new unit had made little progress on joint projects.

The fundamental problem was a three-way disagreement about the most important priority to guide their joint efforts. Should it be people, processes, or technologies? Unable to make headway, the functional groups went off on their own, devised and promoted their own approaches, and threw partial solutions over the transom at each other. The people in these groups liked each other personally but couldn't understand why the others didn't see things the same way.

After identifying a core set of influencers, the unit leader brought them together for a workshop. There, he laid out his vision for how each functional group could play a crucial leading role at different points of a hypothetical project. He then split people into multifunctional teams to discuss examples of actual interactions that had diverged sharply from this aspirational model. Each team brainstormed on what might have happened differently had they followed the leader's vision.

Through this process, they learned about each other's values and priorities and saw how each could take leading roles at different times. Because the leader had picked influencers to attend, the new shared values and priorities that emerged made their way back to the larger population and catalyzed a cultural shift to a more collaborative unit.

4. EVOKE POSITIVE EMOTIONS

Traditional approaches to cultural change often assume that the process is rational: Leaders identify new values and educate employees about them, using anecdotes, examples, and compelling logic, in hopes of persuading them to commit to new ways of working.⁸ But our research shows that culture spreads most effectively through network connections that have an emotional aspect.

In particular, people who prompt positive emotions in their colleagues excel at getting others to adopt desired cultural values. For example, in the R&D division of a petrochemical company we studied, individual contributors were far more likely to adopt cultural priorities if they were propagated through supervisors with whom they had a positive, energizing network tie. With that knowledge, the company started training first-level supervisors to become more skilled as "energizers." They learned how to engage people in realistic possibilities that captured their imaginations and hearts, for example, and how to help others see how their efforts contributed to an ambitious plan. Nine months later, new data revealed far greater adoption of the new cultural values among individual contributors.

In contrast, people who evoke negative emotions, such as fear or resentment, are very good at propagating unwanted cultural norms or stifling the spread of desired values. Leaders in one business unit of a large technology company gathered network data about the people with whom respondents were reluctant to share early-stage ideas or differing points of view. When the top executive reviewed the results, he concluded with dismay, "We have a culture of fear." Despite the fantastic talent in his organization, many people avoided speaking up because they didn't want to get shot down. The company's creativity, risk tolerance, and market presence had suffered.

Analysis revealed that less than 5% of top leaders

and 8% of key experts were collectively responsible for a majority of employees' fearful responses. Without identifying these individuals by name, we shared the results with the organization's leaders and subject matter experts more broadly. Through a series of discussions, a common set of ideas emerged around how work was assigned, how input was sought, how advice was framed, and how disagreements were handled. A set of training sessions followed for all experts and leaders, not just the fear generators (whose identities were kept anonymous). Leaders learned to seek engagement rather than demand compliance, while experts acquired skills in active listening and conflict resolution. In both cases, accountability partners and peer-group follow-up sessions ensured that they followed through.

The analysis also revealed the 80 most fearful employees, who represented only 2% of the whole but felt that fear existed in almost all of their interactions. Identifying these employees was an important step, because without realizing it, fearful people play a role in maintaining a culture of fear, through the stories they tell. Leaders established new practices to encourage more accountable behavior on everyone's part — for instance, curbing the spread of rumors and gossip. They also counseled the fearful employees directly, helping them recognize how disproportional their reactions were. Because their attitudes often influenced others, this had a calming effect on a broader swath of the network.

5. GIVE ADOPTION THE TIME IT NEEDS

How long it takes to master new cultural norms or behaviors can vary by a surprising amount. Leaders may see slow or uneven adoption as new cultural ideas' failure to spread, when in fact it may be a function of how tacit or complex the values are. And while networks play an important role in speed of adoption, faster isn't always better.

Consider an innovative life sciences company that was losing crucial millennial employees, who complained about work pressures interfering with their weekends. Facing tough competition for top talent, senior leaders realized that their traditional assumptions about employee productivity and career advancement were alienating the very people they had just fought to hire.

So they pushed for a new "work to live" value, emphasizing job flexibility, employee health, and work-life balance. They rolled out a dozen reinforcing behaviors to support this new value — but eight months later, adoption was spotty at best. Many supervisors and midlevel managers hadn't fully grasped the deeper cultural shift involved and thus treated the supporting behaviors in ways that undermined their intent. For instance, email on weekends was prohibited, but many managers just set their emails on a time delay, resulting in an onslaught of new demands first thing every Monday morning. Other behaviors were similarly misinterpreted or only partially adopted, and the problems with talent retention continued.

Realizing that this cultural change would take far more time and effort than they had assumed, senior leaders began deliberately modeling the behaviors in their interactions with others in their networks. Over time, as many midlevel managers experienced the resulting positive changes in their own work lives, the underlying value became anchored in their belief systems, and their adoption of the cultural behaviors became more natural.

Another organization, a business services firm, combined survey-based network data with respondents' assessments of whether their peers exhibited important new cultural behaviors, in order to identify places where the company could speed up adoption of those changes. The analysis revealed that some of the more nuanced behaviors —



Culture spreads most effectively through network connections that have an emotional aspect. In particular, people who prompt positive emotions in their colleagues excel at getting others to adopt desired cultural values.

including applying highly discerning judgment to every idea and taking risks that were big but worthwhile — took longer than others to learn. But a small set of employees required less “soak time,” because their networks gave them opportunities to watch senior leaders enact these behaviors and learn what they truly meant. So the organization set up “fly on the wall” situations, inviting more employees to attend meetings where they could see leaders, sometimes several levels up, engage in these very tacit behaviors. (The network analysis identified connections that would legitimize the presence of a junior employee in a meeting of senior leaders and provide assurance of that person’s trustworthiness and discretion.) These experiences accelerated adoption of the desired behaviors through experiences that employees normally would not have had access to for years, perhaps even decades.

In the same company, other nuanced behaviors were poorly adopted because newcomers tried to absorb them too quickly. These employees imitated what they *thought* was being modeled but missed the mark because they didn’t fully understand the underlying cultural values. One such value embraced intensive testing of new ideas for weakness through fierce and informed debate. Unfortunately, these newcomers got the impression that the culture was antagonistic toward innovative ideas, and they simply attacked anything they thought strayed too far from the company’s existing strategy.

The intended behaviors were much subtler. For instance: Don’t argue with data unless you have better data, and don’t object to a claim unless you can explain how your insights provide a different perspective. Understanding what those behaviors meant and looked like would take time. But company leaders didn’t just ask newcomers not to engage in them for a year or two; they used network data to pair the employees with peer-level mentors who demonstrated a mature grasp of the underlying value. These mentors counseled newcomers on when and how to hold back, creating space for them to learn the nuances over time and engage only when they really comprehended the behaviors.

A surprising side effect of this mentoring was improved retention for newcomers. Previously, those who had picked fights without understanding the cultural rules had also left the organization quickly.

But now that they understood the need to hold back at first, they were able to build more productive network ties with others early in their tenures.

COMBINING NETWORK ANALYSIS with assessments of organizational culture provides leaders with a rich understanding of how new values take root. It gives them a more “local” view of culture — one where desired behaviors are communicated, modeled, observed, and adopted on the ground, not broadcast from on high. And that perspective allows leaders to drive change in more targeted ways. They learn how new ideas and beliefs spread, who the real influencers are in their organization, and how long the process can take — which makes it easier to propagate new values where they are needed and produce enduring outcomes.

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Mapping Exclusion in the Organization

Organizational network analysis can reveal ways to bolster inclusivity.

BY INGA CARBONI, ANDREW PARKER, AND NAN S. LANGOWITZ

Annual workforce demographic reports show that despite prominent high-tech companies' pledges to increase gender diversity, the pattern of underrepresentation of women persists.¹ Compared with workers in other industries, executives and professionals in the tech sector are disproportionately male.² Women account for only 30% of the workforce in the top 75 technology companies in Silicon Valley, even though women achieve near parity at nontechnology businesses in the region.³ As a female technical consultant said in a 2018 Pew Research report on women in STEM: "People automatically assume I am the secretary, or in a less technical role, because I am female. This makes it difficult for me to build a technical network to get my work done. People will call on my male co-workers, but not call on me."⁴

One of the biggest barriers to women's success is their exclusion from informal professional networks.⁵ To identify the challenges and solutions involved in developing gender-inclusive networks, we studied the organizational networks of dozens of companies, surveyed thousands of employees, and interviewed senior executives responsible for implementing their organization's gender-related diversity, equity, and inclusion (DEI) efforts. (See "The Research," p. 60.) Our research made clear that *who* you know is as





RESEARCH

The authors studied the organizational networks of more than 30 companies, surveyed 7,000 employees, and interviewed more than 50 senior executives involved in diversity and inclusion efforts.

They worked with a global technology manufacturer to assess the results of their efforts to improve inclusion by conducting organizational network analyses on two of their global teams (one in R&D/engineering and one in manufacturing) and also interviewed team members.

important — often more so — than *what* you know when it comes to rising through the ranks.

Networks are how people learn the unwritten rules of success, hear about job and promotion opportunities *before* they are posted, and — most critically — build a level of interpersonal trust and rapport with their contacts that translates into a willingness to pick up the phone and vouch for someone's capabilities. According to one study, nearly 40% of the gender pay gap can be explained by the informal relationships that men have with their male managers.⁶

In this article, we present the case of Valitron (a pseudonym), a global computer hardware manufacturer based in Silicon Valley, to illustrate how knowledge of organizational networks affects the success of efforts to build more gender-inclusive organizations in two critical ways: by providing a better measure of inclusion, and by fostering actionable insights into precisely where and how to target DEI efforts.

Valitron executives approached us because they wanted to assess the effectiveness of the company's recent, significant investments in reducing gender bias in hiring and promotion. We used *organizational network analysis* (ONA), a methodology that maps informal and formal relationships, to reveal hidden patterns of inclusion and exclusion — because what can be seen can more often be changed.

We conducted ONAs on two of Valitron's global teams (one in R&D/engineering and one in manufacturing) and interviewed team members to add qualitative richness to our quantitative findings. Approximately 30% of the survey respondents were female, with a corresponding proportion among our interviewees. Although the inclusion of women was the focus of our analysis, many of the ONA insights we have gleaned from our research are also applicable to organizations' efforts to be more inclusive of members of other marginalized groups, such as people of color, those identifying as LGBTQ+, and military veterans.

Going Beyond Representation

Typical measures of DEI success, such as employee demographics and employee engagement surveys, ignore a key predictor of career advancement and well-being: workplace relationships. The truth is

that DEI is not merely a pipeline story (how many are hired) but instead an engagement strategy (how those who are part of the organization are included in critical aspects of organizational life). Companies that are truly trying to promote gender inclusion — not just reporting metrics — need to be able to assess and measure the impact of their DEI efforts by seeing how women are embedded in the inner workings of their organizations.

Our earlier research indicated that examining an organization's network can reveal the company's progress in addressing three common networking challenges for women: *where* they are in the network, *who* is in their network, and the *structure* of their network.

At Valitron, we first explored *where* women were in the network and the extent to which their voices were being heard. Network centrality is an important indicator of influence: Individuals who are central in their organization's networks are more influential than others, because their opinions are sought out and listened to by greater numbers of people.⁷ When we compared the centrality of women and men, we found dramatic differences. (See "Gender and Influence.") While women in both teams were much more likely to be central in the *noncritical* decision-making network, they were significantly less likely to be in the center of knowledge, innovation, and critical decision-making networks. Men, not women, were key players in the networks that mattered.

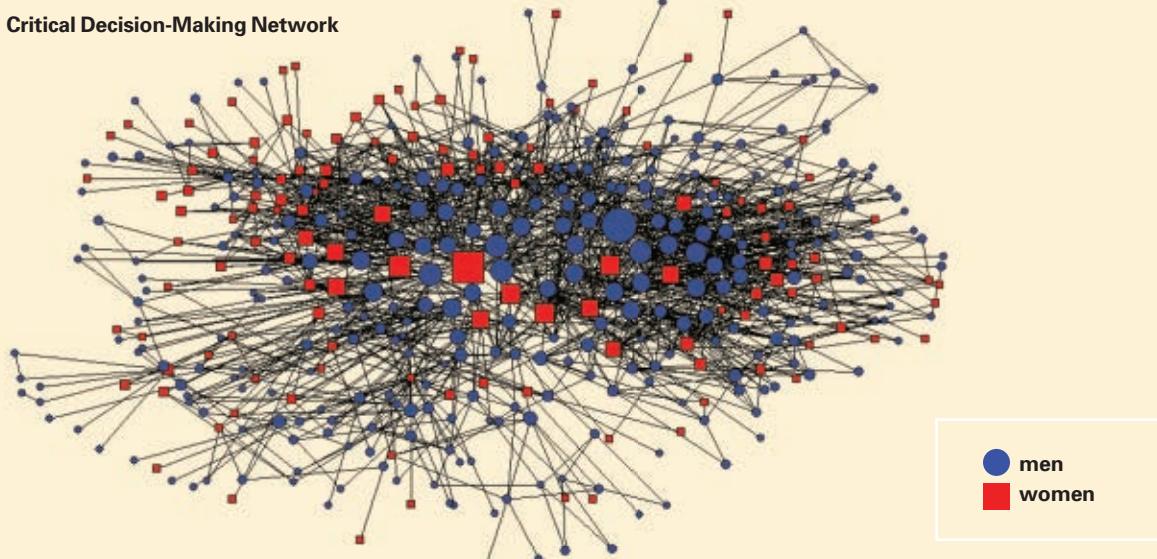
Next, we explored differences between men and women regarding who is in their networks. Unconscious preferences for same-sex workplace relationships are natural. In fact, preferring to bond with similar others is one of the most robust findings in the social sciences.⁸ But when people who are historically underrepresented in leadership positions — such as women — try to connect with similar others, they are far less likely to connect with senior executives. Why should women care? Because *who knows you* is as important as who you know.

Most relationships, especially strong relationships, are characterized by some level of trust.⁹ People who trust each other are more likely to share political information with each other, persist when communicating something complex or intangible, and return favors for each other.¹⁰ This might

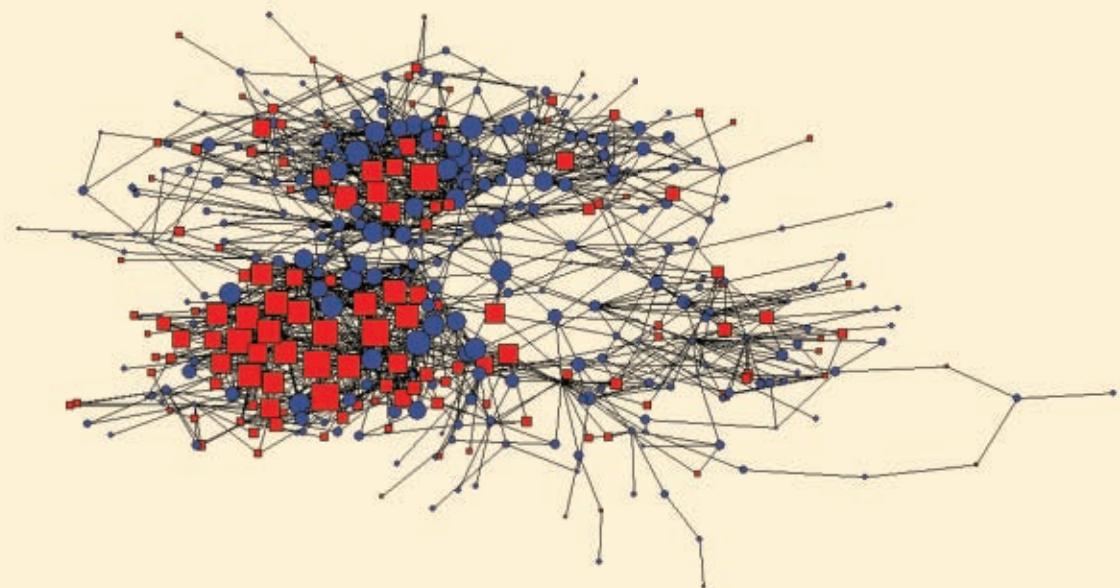
GENDER AND INFLUENCE

Organizational network analysis showed women had far fewer connections than men in critical decision-making networks.

Critical Decision-Making Network



Noncritical Decision-Making Network



include disclosing who the real decision maker is on a project or team, sharing news about upcoming job openings, or providing tips on how to best communicate a project outcome or seek a promotion. Having a trusted person vouch for a job candidate's trustworthiness can increase the likelihood of a job offer being extended.¹¹ Especially for junior employees, having relationships with senior members in the organization can have a major impact on the extent and swiftness of career advancement. Organizations

that rely solely on gender representation to assess the success of diversity efforts overlook the importance of these pivotal relationships.

To explore the *who* of men's and women's networks at Valitron, we divided employees into three groups based on their level — junior, professional, or senior — in the organization. We then compared the average number of connections that men and women had to people who outranked them in the hierarchy. (See "Who Is Best Connected?" p. 62.)

The results were clear. Women at every level — but especially at the professional level — had fewer overall connections to higher-level people than did men. This finding shocked Valitron executives, because the company had a robust formal sponsorship program for both men and women and had assumed that the benefits were equally distributed. The ONA revealed that men once again had a significant advantage over women in the informal networks that shape the flow of opportunities and access to power.

Lastly, we took a look at gender differences in relationship structures. For decades, researchers have known that professional networks that are characterized by connections to otherwise unconnected subnetworks within the organization provide important advantages.¹² These network brokers receive new and more diverse information faster than others in the network and can control the flow of information to the advantage of both themselves and their organizations. Without brokers providing the connective tissue, networks as a whole wouldn't exist. Remove them and the network falls apart. Not surprisingly, brokers are more likely to be tapped as top talent, be involved in innovation, receive higher performance evaluations, get promoted faster, and earn bigger bonuses.¹³

Here is where engagement surveys fall short when seeking to capture inclusion. Individuals who are not brokers are often cozily embedded in tightly knit clusters with nearby or similar others (such as other women in their department). As a result, they might report high levels of engagement, totally unaware that their disconnection from other parts of the organization is having a negative impact on their career advancement opportunities.

At Valitron, senior managers were much more likely to be brokers than were lower-level employees. Given that being a broker is somewhat role-driven, this is not unexpected. What was unexpected was that even after controlling for level in the organization, men were nearly 20% more likely to have networks characterized by brokerage than were women.¹⁴ This was especially true at lower levels in the organization. Organizations that look inward for top talent tend to tap brokers for innovation and promotion opportunities. Our data shows that brokers are far more likely to be men. In other words, the structure of their networks once again puts women at a disadvantage.

Throughout our work with Valitron and other organizations, deeper understanding of the network as revealed by the network analysis not only provides a snapshot of current inclusion but allows for a targeted approach — rather than the more typical scattershot approach — to interventions. These may include the following:

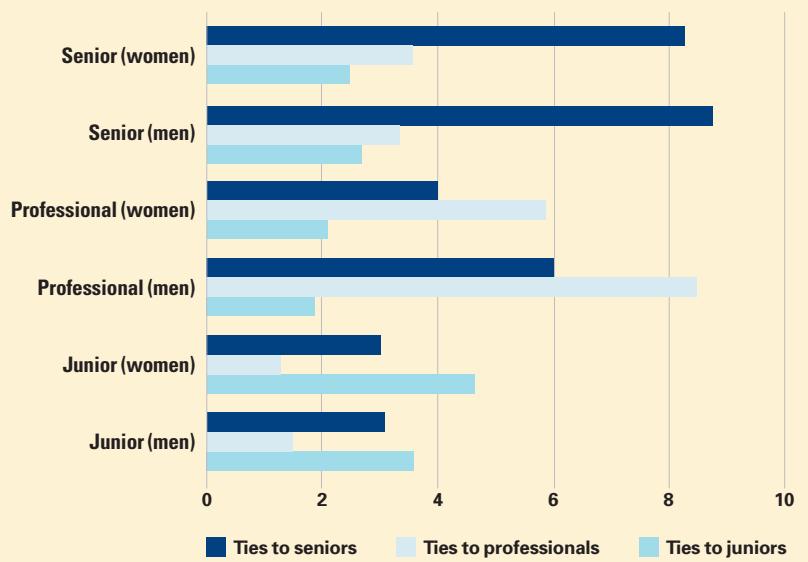
Creating accountability metrics for developing talent. For example, ONA can reveal the extent to which a formal sponsor is building relationships between protégés and more-senior individuals. It can also assess the extent to which individual managers are increasing the gender diversity of their networks and building teams with gender-diverse networks.

Identifying high-leverage individuals. Network analyses can help locate key opinion leaders to drive and support diversity efforts. It can also help in identifying marginalized women who might be more likely to resign, as well as brokers who connect disparate parts of the network.

Codifying and sharing the networking strategies of top performers who have built diverse networks. Top performers might include central women who have networks that comprise senior leaders; managers who have created gender-diverse teams and units; and central men who have

WHO IS BEST CONNECTED?

The ONA of a technology manufacturer revealed that despite its formal sponsorship program, men at every level had more connections to higher-level colleagues.



gender-diverse networks. Valitron built on the study findings to create an enterprise program that captured strategies that high-performing women have used to successfully expand their networks, which were then shared with emerging talent.

Assessing the effectiveness of specific diversity investments. For example, ONA can quantify the extent to which unconscious bias training results in more gender-diverse and -inclusive business units. Employee resource group networks can be examined to see if they are building connections between women and senior leaders.

Developing pull strategies. Women who are peripheral to the network can be connected to more central individuals using “smart mentoring” methods to bring them into the heart of critical networks. Recognizing and valuing the contributions of central individuals who demonstrate inclusionary behaviors can build visibility that pulls women toward them. Valitron provides an online platform where a cohort of carefully selected women come together to share their experiences and develop ongoing programming to support their positioning in the organization.

Restructuring work to promote strategic relationship development. ONA can pinpoint high-leverage opportunities for relationship-building, such as gig rotations that place women in areas of the organization where they are particularly sparse (such as manufacturing). High-visibility projects can be designed to connect junior women with senior executives or, as at Valitron, strategic assignments can be developed by managers to connect women to influential individuals.

Our research and consulting experience indicates that tech companies fail at gender inclusion because they (1) ignore the importance of workplace relationships on career advancement and well-being and (2) take a scattershot rather than analytic approach to interventions designed to foster inclusivity. ONA offers a methodology that sheds light on the invisible nature of inclusion, providing executives with the tools they need to develop more gender-inclusive organizations.

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Does Your Business Need a Human Rights Strategy?

Companies must be prepared to meet their moral and business obligations when operations bump up against labor abuses — or worse.

BY N. CRAIG SMITH, MARKUS SCHOLZ, AND JANE WILLIAMS

Swedish fashion giant H&M's commitment to "operating with respect to human rights across the value chain" recently cost the company \$74 million and the wrath of its third-biggest — and fastest-growing — market. In late 2020, H&M, along with other well-known fashion brands, publicly announced that it was no longer sourcing cotton from China's Xinjiang region due to concerns over the use of forced labor among the country's minority Uyghur population. When a website highlighted the announcement in March 2021, the Chinese consumer backlash was fierce. The company's brands disappeared from Chinese e-commerce sites, landlords in parts of China forced many of the brand's stores to close, and Chinese customs officials issued a warning alleging that H&M's cotton dresses contained "dyes or harmful substances" that could endanger a child's health.¹ By the time the company's quarterly results were announced in July, there was little surprise that sales had fallen by 23% from March to May.² At the time, chief executive Helena Helmersson said the situation remained "complex" and expressed H&M's commitment to regaining the trust of its customers and partners in China.³

H&M was hit hard by the Chinese reaction. However, with customers, employees, and activists paying increased attention to human rights, businesses that turn a blind eye to violations that occur in their sphere of operations face the risk of being exposed as morally complicit as well as



vulnerable to legal action and reputational harm. That's why it's critical for companies to have a human rights strategy and proactively consider when and how to take the action needed to fulfill their moral obligations; meet shareholder, customer, and employee expectations; and keep other stakeholders satisfied.

Drawing on our research in business ethics and sustainability — including discussions with managers and human rights groups, and a close examination of how businesses have addressed these issues in the past — we've created a framework to help companies develop a business and human rights strategy that is applicable to their situations. The framework we provide offers tools to help companies gauge their vulnerabilities and identify approaches and tactics that will assist them in meeting their social and commercial responsibilities.

Three Categories of Human Rights Violations

In our research, we observed three broad areas where human rights issues arise in relation to business and that companies must consider when developing a business and human rights strategy.

1. Abuse in the way a company's products or services are made and delivered. This includes abuse by suppliers or contractors or within a company's own operations. Managing human rights risks in the supply chain is becoming increasingly complicated as geopolitical environments change, supply chains become more complex, and human rights defenders leverage digital media to highlight abuses occurring right under our noses in areas that were previously unseen. Sometimes a job — picking tomatoes, making clothes, or working on a construction site — may appear to be normal. What might not be seen is the way people are being controlled through intimidation, inescapable debt, the removal of passports, or threats of deportation. A 2019 investigation in the U.K. revealed a slave ring involving more than 400 trafficked Polish workers who were being held in appalling conditions. The laborers were receiving a pittance to work on farms and in factories that supplied major supermarket and building supply chains, including Tesco, Waitrose, Sainsbury's, Homebase, Travis Perkins, Argos, and Wickes.⁴

Unsurprisingly, the companies were unaware of the conditions their suppliers' workers were subjected to. In fact, most companies today are vocal in announcing policies to weed out forced labor in their value chains. However, the prevalence of modern slavery in global supply chains has become so entrenched, most multinational companies benefit from it somewhere, often very far down the chain, where they have little visibility or leverage.⁵

2. Abuse in the way a company's products or services are used. While companies may not knowingly create products that violate human rights, they could find themselves complicit when customers employ their products or services to do so — if not legally complicit, then at least guilty in the court of public opinion. Caterpillar, a long-standing supplier of heavy machinery to the Israeli army, found its reputation at risk when evidence of its equipment being used to demolish Palestinian houses and orchards emerged.⁶ Demonstrations against the company gained momentum after an army-driven Caterpillar bulldozer crushed and killed American peace activist Rachel Corrie. More recently, research by Amnesty International made headlines with the findings that digital surveillance systems made by European companies were being sold to Chinese security agencies and used to implement a mass surveillance program against minority groups.⁷

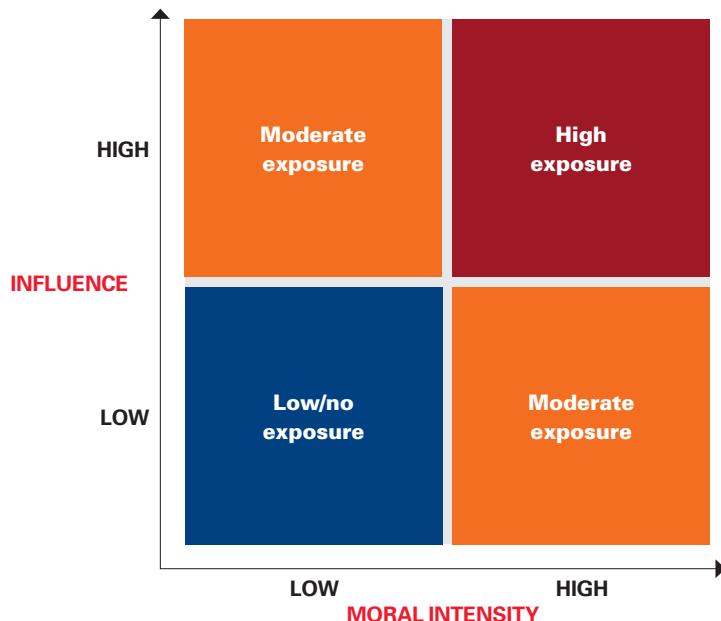
3. Abuse by regimes where the company operates. It is difficult to identify a country where human rights abuses of one kind or another do not take place, whether in the form of forced labor; suppression of free speech; racial, cultural, or gender discrimination; or unlawful incarceration. The issue is nuanced, and countries differ in their views on what constitutes basic human rights. Recently, Russia has been accused of using a military-grade nerve agent to poison opposition leader and anti-corruption activist Alexander Navalny. In 2017, the U.S. was admonished by Amnesty International for the rendition, torture, and indefinite detention of prisoners at Guantanamo Bay without trial following the 9/11 attacks. Meanwhile, Australia's mandatory detention and offshore processing of asylum seekers has been robustly criticized. And investigations into the 2018 murder of journalist Jamal Khashoggi surfaced evidence pointing to the

involvement of Saudi Arabia's Crown Prince Mohammed bin Salman.⁸

Companies can benefit from working closely with governments, but when a regime violates human rights, they can get embroiled in the scandal. International consultancy McKinsey & Co. found itself in such a position over its contract to assist in the organizational transformation of the U.S. Immigration and Customs Enforcement agency. Media reports suggested that the consultancy had been redirected to assist in former President Donald Trump's clampdown on illegal immigration and was responsible for money-saving recommendations that included cuts in funding for food, medical care, and the supervision of detainees.⁹ McKinsey global managing partner Kevin Sneader insisted that the company would not, "under any circumstances, engage in work ... that advances or assists policies that are at odds with our values." However, the incident gave weight to commentators who have accused the company of nurturing cozy relationships with various regimes where violations of human rights are regularly reported.¹⁰

EXPOSURE TO HUMAN RIGHTS ISSUES

When a company has a high degree of influence in a given situation, and a significant amount of harm is being caused, it will have a greater responsibility to take action — or suffer reputational consequences if it doesn't.



Moral and Legal Obligations to Address Human Rights

Historically, responsibility for protecting human rights has fallen primarily to governments — but there are situations where governments are unable, or unwilling, to do so. In this environment, companies can take responsibility for engaging as corporate citizens with often significant influence. There are four reasons why a company should consider human rights a priority and why it can be important to act:

1. Moral reasons. Businesses need to accept that they can no longer be corporate bystanders; there are moral duties that call for action. Inaction could be perceived as silent complicity.¹¹

2. Legal considerations. Many countries have enacted laws that require organizations to act in ways that protect and promote human rights.

3. Compliance with soft laws. When human rights are not directly supported by laws, other standards may come into play, such as the United Nations' Guiding Principles on Business and Human Rights. This document provides a set of guidelines based on the U.N.'s "Protect, Respect, and Remedy" framework. Key elements of it have been adopted by the Organisation for Economic Co-operation and Development, the European Union, the International Organization for Standardization (in ISO 26000), and the International Finance Corp.

4. Reputation. With social media in particular bringing attention to areas that had been inconspicuous in the past, companies are increasingly vulnerable to being accused of complicity with human rights abuses.

What's Your Organization's Exposure?

Business leaders seeking to formulate a clear plan for handling these difficult issues need to start by better understanding their organizations' moral obligation to act, as well as their potential vulnerability. To that end, we have identified some key factors driving corporate human rights strategies and used them to create an exposure matrix. (See "Exposure to Human Rights Issues.") This tool captures both the moral intensity and the potential influence of a company in a specific situation. Knowing where a company sits in the matrix can help focus managerial discussion and decision-making in terms of its response.



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MORAL INTENSITY

First described in 1991 by Thomas M. Jones, *moral intensity* captures the degree to which people see a situation as unethical and demanding of action.¹² Empirical research has confirmed that when circumstances are high in moral intensity, people are more likely to intend to act ethically.¹³ According to Jones, the following factors influence the moral intensity of a particular issue:

- **The magnitude of consequences.** What is the extent of the harm likely to result? Are lives at stake, or is freedom of speech at risk, for example?
- **Social consensus.** What is the extent to which people in society are in agreement on the moral rights and wrongs of an issue? The internationally accepted norms laid out in the U.N.’s Guiding Principles on Business and Human Rights and its Universal Declaration of Human Rights are often considered key sources of guidance (though it must be noted that not all countries are signatories to the declaration, and some assert that it has a Western bias).
- **Probability of effect.** How likely is harm to happen?
- **Temporal immediacy.** How urgent is the issue? Is fast action required to prevent harm?
- **Proximity.** How close is your organization to the issue?
- **Concentration of effect.** What is the proportion of people in a given community affected by the issue?

Take the example of supermarket chains, such as Walmart, Carrefour, and Tesco, that have been criticized for sourcing frozen shrimp from Thailand, the third-largest exporter of seafood in

the world.¹⁴ Research conducted by Human Rights Watch found the use of forced labor in the Thai fishing industry to be “pervasive.” Boats were found to be crewed with Burmese and Cambodian men sold as slaves and forced to work for years at sea without ever seeing shore.¹⁵

Using our tool, managers in the supermarket chains could conclude that the level of moral intensity was high based on five of the six drivers: (1) There were severe consequences from the abuse, with evidence of considerable suffering; (2) there was broad social consensus pushing for the abolition of forced labor; (3) the abuse was already happening and seemed likely to continue; (4) the urgency of the matter remained high for the affected fishermen; and, finally, (5) the harm was highly concentrated on the enslaved fishermen. However, given that the abuse occurred far from their home markets, and that the supermarkets sourced the product through third parties, the managers would likely assess their proximity as low. This would moderate the moral intensity for the supermarkets — though not for their suppliers.

INFLUENCE

An organization’s influence is not always easy to gauge. It may be the case that a large and seemingly powerful company yields little influence on the perpetrators of human rights abuses. Take the example of Shell’s oil operations in the Niger Delta in the 1990s.¹⁶ Given that Shell was the largest multinational in the country and a joint partner in oil production with the government, it might be presumed that the company held great sway over the Nigerian government. However, when the company became embroiled in demands for political rights and oil revenues by the local Ogoni people, and protests resulted in nine activists being arrested, convicted, and subsequently executed, Shell’s calls

for a fair trial and appeals for clemency carried little weight. The fact that other oil corporations were eager to take its place in the Niger Delta further diluted Shell's influence. Despite global condemnation of Shell, it is far from evident that the company could have prevented the executions.¹⁷ Nevertheless, the company's reputation suffered, and in 2009 Shell paid \$15.5 million to settle a court case over its alleged complicity in human rights abuses.¹⁸

To account for these nuances when considering an organization's influence, we suggest that business leaders assess the following:

- **Institutional factors.** What are the formal and informal rules and values that shape the environment, including willingness — or pressure — to conform?
- **Industry specifics.** How is influence affected by factors such as the complexity of supply chains, the geographic location of where vital products are sourced, or the degree of concentration or fragmentation of the industry? For instance, the difficulty in tracing cocoa beans to specific producers makes eliminating child labor hugely difficult for chocolate and cocoa companies such as Barry Callebaut.
- **Firm resources.** What can the organization bring to bear to influence the issue? This includes tangible resources, such as funds, inventory, land, and buildings; and intangible ones, such as networks, skills, and knowledge.
- **Embeddedness.** How closely and on how many levels is the company entangled with the perpetrators of abuse?

Returning to our Thai seafood example, the supermarkets have potential influence by virtue of firm resources — their size and buying power —

and the institutional factor of established practices whereby multistakeholder initiatives are used to improve supplier practices (such as the Marine Stewardship Council). However, when it comes to embeddedness, they are not directly involved with the perpetrators using slave labor, and the industry specifics of an opaque supply chain mean that their influence is diminished because traceability is low. Considering these influence factors in combination with our assessment of moral intensity, the supermarkets would likely place themselves toward the middle on the exposure matrix. In contrast, Thai Union Group, a Thailand-based global seafood company with familiar brands such as John West, has considerably greater influence by virtue of its embeddedness, resources, and dominance in the supply chain.¹⁹ It would likely be judged to be in the upper-right quadrant of the exposure matrix.

Three Key Decisions for Your Human Rights Strategy

The insights gleaned while assessing a company's exposure to human rights issues can also be used during the development and execution of its response strategy. To help business leaders work through this, we've created a decision tree that highlights the key choices that could be made and their potential consequences. (See "Choosing the Best Course of Action.")

DECISION 1: Exit, Voice, or Silence? The first decision a company must make is whether to get involved. Based on the conclusions reached using the exposure matrix, business leaders must decide whether the issue requires further attention and, possibly, action. Is it serious enough to warrant divesting operations and/or possibly leaving the country? If not, what other options are available?

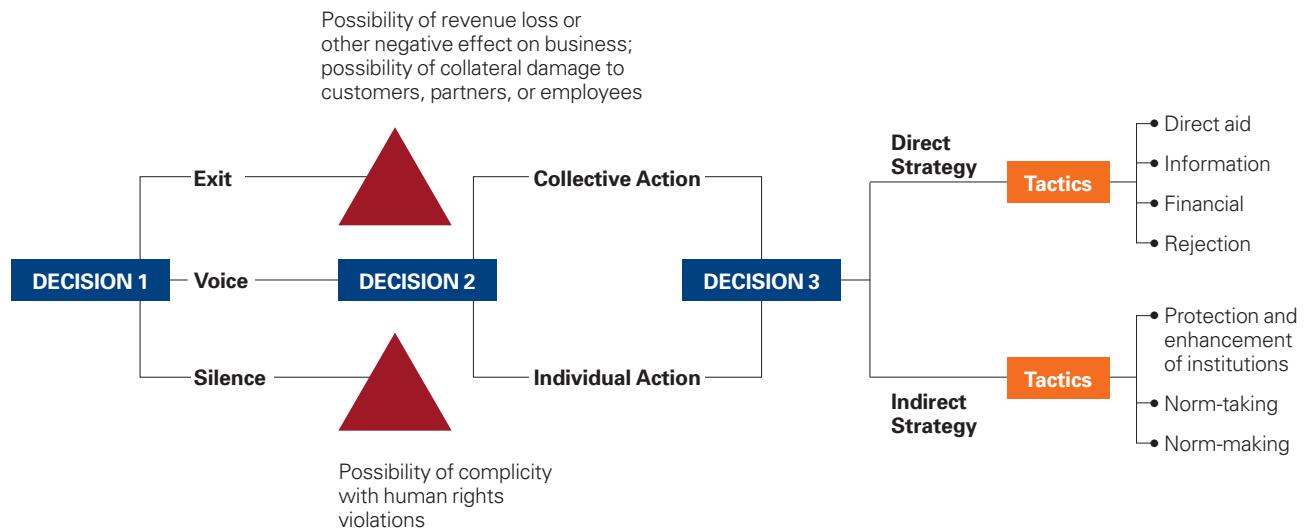
To borrow from Albert Hirschman's famous treatise, *Exit, Voice, and Loyalty*, businesses have the options of leaving the environment where abuse is



A company's influence in human rights issues can depend on factors such as the complexity of supply chains, the geographic location of where vital products are sourced, or the degree of concentration or fragmentation of the industry.

CHOOSING THE BEST COURSE OF ACTION

Leaders facing exposure to a human rights problem face three key decisions.



being committed, taking action to help change the situation, or maintaining business as usual while continuing to monitor the situation and the company's exposure.²⁰ Deciding on the best option is not always straightforward, nor is flight always the most appropriate action: Pulling out of a country can not only seriously impact a business's bottom line but also harm the communities in which it operates, such as by eliminating local jobs or ending prosocial initiatives the company has taken. This was the argument businesses often made against exiting apartheid South Africa: that they should stay and pursue constructive engagement.²¹

If a business makes the choice to continue operating and to work to address systemic human rights abuses within its environment, it needs to develop a nuanced strategy and be very deliberate about how and with whom it interacts.

DECISION 2: A Collective or Individual Approach? This brings us to the second decision, regarding the approach. If a company chooses to stay and take action, it must decide whether the issue is best addressed by the company individually or should be undertaken collectively with other organizations or stakeholders.

An individual approach can be most effective when companies are influential and when time is of the essence. In 2010, Microsoft became aware that Russian government agencies were using allegations

of software piracy as an excuse to search the offices of nongovernmental organizations and harass political activists and journalists. It eliminated that pretext by offering free software to NGOs and independent journalists.²²

As a large company with vast resources, Microsoft had the power to take individual action. Less-powerful companies, or those reacting to a situation where the abuse is widespread, the protagonist too dominant, or the sense of urgency low, may choose to act collectively, teaming up with other organizations and/or stakeholders.

The reaction of companies in the garment sector after the 2012 Rana Plaza tragedy in Bangladesh offers an example of collective action.²³ More than 1,100 factory workers died when the eight-story building collapsed. The disaster highlighted the problem of unsafe working environments that was systemic across the country. Companies in the sector worked together to introduce the Accord on Fire and Building Safety in Bangladesh, an independent, legally binding agreement formed among global brands, retailers, and trade unions. Since the accord's creation, engineers have inspected more than 2,000 garment factories, addressed more than 150,000 safety hazards, and helped set up safety training programs that have educated more than 1.4 million workers in proper workplace safety practices.



Disengaging with a problematic regime may include discontinuing some business operations, such as Google's refusal to provide the Chinese government access to user data and its partial withdrawal from the country.

DECISION 3: Which Actions and Tactics Should Be Chosen?

Should Be Chosen? Having decided on a collective or individual approach, companies are faced with the question of whether to take direct action to stop human rights violations or whether more can be done by indirectly influencing the institutional settings in which they operate.

In Bangladesh, the adoption of the Accord on Fire and Building Safety was an indirect strategy through which businesses were able to create new industry standards. However, if the situation had been different — for example, if ready-made garment brands had become aware that a particular factory presented an extreme and urgent threat to life — they may have instead chosen to take direct action, such as putting pressure on politicians or legal enforcement agencies to close or force repairs to the building.

Having made a choice about whether to act directly or indirectly, organizations have an array of tactics at their disposal. The tactics they choose should take into consideration the influence drivers identified in the exposure matrix.

DIRECT TACTICS

- **Offering direct aid.** In this case, a company uses its core business to protect and promote human rights, as Microsoft did when providing software to the Russian NGOs.

- **Providing information.** This includes companies using their research and communication resources to provide background analyses, develop position papers, testify as expert witnesses, or even directly lobby for human rights. The large German supermarket chain Edeka protested xenophobia by taking products made outside Germany off its store's shelves and replacing them with signs bearing anti-racism messages.

- **Granting or withdrawing financial aid.** Companies may choose to provide financial

support to organizations, politicians, or political parties that promote human rights. In the wake of the George Floyd protests and the Black Lives Matter movement in the U.S., many major companies, including Apple, Amazon, and Facebook, endorsed the movement and pledged millions of dollars to fight racism. Alternatively, companies may withdraw financial aid if they feel that human rights are being abused. Denmark's Danske Bank has an exclusion list that publicly identifies 27 companies it refuses to do business with for moral reasons.

- **Disengaging or rejecting unjust rules.** This may include declining to participate in business events, engaging in civil disobedience, or, in extreme cases, discontinuing some business operations in a particular country. Google's refusal to provide the Chinese government access to user data and its partial withdrawal from the country falls into this category. Companies protesting apartheid in South Africa chose to house workers of different races in common facilities in defiance of provisions of the Group Areas Act. Merck CEO Ken Frazier used this tactic when he very publicly broke with President Trump. Frazier resigned from the administration's manufacturing council after the former president proved unwilling to hold white supremacists to account for the violence that accompanied their August 2017 protests in Charlottesville, Virginia.

INDIRECT TACTICS

When companies feel that they are too small or not in a position to make a difference through direct action, or if the violations are widespread, they may opt to pursue indirect engagement strategies that influence the institutional setting in which the offenders operate. This is an area in which partnering with other organizations can be particularly effective.

Indirect engagement strategies include tactics such as the following:

- **Protecting and enhancing institutions.** This tactic is focused on the support, establishment, or enforcement of well-ordered institutions. A good example is the Norwegian oil company Statoil (now Equinor), which provided human rights law training to judges in Venezuela from 1999 to 2004.²⁴
- **Norm-taking.** Organizations may voluntarily sign on to, and comply with, nonlegal norms and standards that go beyond legal requirements, such as the U.N. Global Compact or ISO 26000. This is a particularly strong tactic when adopted by an industry leader with the influence to encourage other power players in the sector.
- **Norm-making.** This takes the norm-taking tactic a step further with the development, or codevelopment, of new standards that supplement hard law. By acting collectively or alongside other multistakeholder initiatives, organizations can individually create rules of the game that define guardrails for corporate behavior. One example is the Fair Labor Association, a collaborative initiative convened in 1996 to improve working conditions in the apparel and footwear industries.

Deciding which of the possible tactics to employ is often not as clear-cut as it may appear from the examples provided. Businesses should explore these options but exercise judgment regarding how well they apply to the specifics of their own situations.

In some cases, the best way forward is to develop an innovative approach. Amsterdam-based smartphone manufacturer Fairphone was faced with a human rights dilemma when it came to sourcing cobalt (a vital mineral for producing phone batteries). Around 60% of the world's cobalt comes from the Democratic Republic of the Congo, where child labor and poor working conditions present huge human rights challenges. Rather than

looking elsewhere to source its cobalt (leaving the country's small-scale miners with no source of income), Fairphone created an alliance linking small-scale mining operations with the global electronics and automotive supply chain. At the same time, it established control and monitoring mechanisms to ensure that children were kept out of the mines and enrolled in local schools.²⁵

When Leaving Is the Best Option

There may be times when, in balancing the tension between the moral and business imperative, leaders feel that the best—or only—choice is for a company to leave, be it a problematic supply chain, a market where its products are implicated in human rights abuses, or even an entire country. The decision then will be whether to take the high road and exit with fanfare to publicly signal why the company is leaving—as Netherlands-based company Hendriks Graszoden did when it announced that it would not be supplying grass for the 2022 FIFA soccer World Cup in Qatar. A spokeswoman explaining the company's withdrawal cited the harshness of labor conditions observed at the new stadium work sites, as well as the many worker deaths that had been reported during construction.²⁶ Alternatively, but with less potential impact on addressing human rights abuses, a company's leadership might decide to withdraw gradually and quietly, protecting company assets and communicating the move as a change of direction for the organization.

Whatever approach and form of engagement a company chooses, if the evaluation on the exposure matrix suggests that there is high moral intensity, and the company has some power to influence the situation, our analysis indicates that indifference toward and inaction on addressing human rights abuses is no longer an option.

Companies are increasingly expected to assume political responsibilities. Doing nothing when



In cases where there is high moral intensity, and the company has some power to influence the situation, our analysis indicates that indifference toward and inaction on addressing human rights abuses is no longer an option.

there is an arsenal of options available might easily be interpreted as — at minimum — silent complicity with human rights violations.

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Design for Cybersecurity From the Start

To avoid hidden vulnerabilities, security must be baked into the development process, not bolted on.

BY KERI PEARLSON AND KEMAN HUANG

Everyone understands how important security is to digital products and services. Customers expect digital offerings to be secure, especially when they're incorporating them into their own products and services. For example, a manufacturer that includes a sensor in its product design expects the sensor it uses to be cybersecurity and not introduce vulnerabilities. Any device connected to the internet can create an entry point for attacks that access the internal system, steal credentials, plant malware, or collect sensitive data. But as breach after well-publicized breach shows, our development processes to build cybersecurity into products and services continue to break down. We have not yet reached the point where security is not only expected but deeply embedded in every aspect of product development.

To build truly secure digital products and services (which we'll refer to as either "products" or "offerings" for simplicity's sake), cybersecurity must be baked in from the initial design stage. While this isn't easy, doing so can keep costs in check and help organizations better meet customer expectations. However, too often security is an afterthought, addressed only after a product has already been designed.

In our research into how companies build cybersecurity offerings, we found that cybersecurity is rarely considered among the criteria in the early design phase. Most designers focus on making sure their offerings are elegant, marketable, usable, and feature-rich. Security is often "bolted on" after initial designs are completed, either by security development processes running parallel to the product development process



or by security experts who work as consultants to the design team. This approach can add costs, since it usually involves redesigning a product or retrofitting new features — and if a problem cannot be fixed, a design may have to be scrapped entirely.

If your executive team is not talking regularly about how to build secure digital offerings and you are not testing your processes often, most likely your products have hidden vulnerabilities. The number of discovered vulnerabilities within the United States' National Vulnerability Database increases yearly; 18,356 new vulnerabilities were reported in 2020 alone, and it is likely that significantly more went unreported.¹

Company leaders must find ways to change designers' attitudes about building in security from the initial design, and that is done when leaders think about security themselves, talk about it with their teams, and make it an important factor in the product's design. Managerial mechanisms like these are what change the values, attitudes, and beliefs of designers and encourage behaviors that result in more secure initial designs.

Working closely with three large, well-known global companies in telecommunications, industrial controls and digital automation, and energy, we gained insights into why cybersecurity is rarely baked into new digital offerings — and identified actions executives can take to change that. As part of their digital transformations, the companies we studied are including digital capabilities in new devices such as those that manage networks; control heating, ventilating, and air conditioning; or monitor energy consumption.

Cybersecurity Gets No Respect Until It's Too Late

Few leaders will deny the importance of cybersecurity for digital offerings. However, in practice, product teams tend not to prioritize cybersecurity. Our study revealed three reasons why this happens.

First, cybersecurity doesn't directly contribute to revenue. Most customers make a purchase decision on the basis of features that add value, reduce costs, or provide other advantages they seek. They treat cybersecurity like tires on a car: They expect it to be there, but they are buying the product for its other features. Product managers understand this.

THE RESEARCH

The authors studied three global companies — in telecommunications, industrial controls and digital automation, and energy — to learn how their product development teams build cybersecurity into their offerings.

The authors conducted semistructured interviews with 44 employees in different positions involved in the design process, looked at the secure development life cycle in these organizations, and investigated how managers promoted behaviors to create secure product designs and, ultimately, secure offerings.

They then hosted several workshops to discuss and validate their findings with senior executives and managers from product development and cybersecurity areas in the three companies, as well as with leaders in other *Fortune 500* companies and cybersecurity solution providers.

In one company, we were told that the security of its offering is much less important than other features, because it really doesn't matter how secure the product is if it doesn't meet customers' needs.

Second, cybersecurity as it's done today can potentially delay time to market. It often requires additional resources, such as experts or specialized training, and it can take extra time to perform additional testing and rework when vulnerabilities are found. Product managers believe that if their product misses the window of market opportunity, customers will find alternatives or substitutes. If that happens, the product's cybersecurity features quickly become irrelevant.

Finally, designers and managers typically underestimate how severe the consequences of cybersecurity vulnerabilities can be — at least until a security incident affects them. One manager justified giving security considerations a lower priority by saying that the company's product was not connected to anything significant in customers' systems, so a breach was not going to do much damage. When managers learn about a cybersecurity incident, they begin to wonder whether their products may have the same vulnerability. But by then, it could be too late, and the offering might already be in customers' hands.

While managers debate the merits of spending resources and time on cybersecurity, customer attitudes toward cybersecurity for digital offerings are changing. Increasingly, cybersecurity is becoming a de facto requirement and thus a key selling point. A cybersecurity vulnerability can shut down a company's operations (as in the May 2021 ransomware attack on Colonial Pipeline in the U.S.), cascading costs through the whole ecosystem. It can damage brands, negatively affect stock price, or create legal exposure for the manufacturer that designed the offering.²

Design Processes for Cybersecurity Must Change

The organizations we studied were approaching cybersecurity in the following three ways that we believe are fairly typical.

1. Bolting on security fixes. Some development teams do not specifically consider cybersecurity until a vulnerability is uncovered through testing after the design is complete. They then bolt on

cybersecurity as needed. The most common types of testing where cybersecurity issues were uncovered were vulnerability testing, penetration testing, and quality-control testing.

In this scenario, when a vulnerability is uncovered, it is sent back to the design team to be fixed. In some cases, that might mean undergoing costly redesigns or finding different but more secure components. In our research, managers whose organizations used this approach had many excuses for why it was done that way. In most cases, leadership felt that designers should focus on design and that cybersecurity could be handled when any issues came up. In one case, a designer told us that a product got all the way to the final check for delivery to a customer before cybersecurity concerns were raised, and in more than one case, a product could not be redesigned easily to fix the vulnerability. That meant either canceling the product delivery or sending it back to the initial design phase and starting over. Both are very costly options.

2. Incorporating secure development life-cycle processes. Another approach we observed was parallel processes of reviewing design and injecting security tests and considerations — the security checkpoints or gates — into the design and subsequent development processes. The organization that used this approach had a series of checkpoints where cybersecurity was tested. The product design process continued unless the design failed to make it past one of these gates, and at that point the team discussed how to fix the vulnerability. Again, this can be costly, but it's much less costly than waiting until the end of the process to see whether security features need to be bolted on. When there are parallel processes, there are specific steps the designers can take to ensure that the design and prototypes have the right security built in. There is still the risk of having to scrap an early-stage design and start over. However, catching the vulnerability at an earlier stage in the design process is less costly than finding it after the design has already been completed.

3. Embedding security consultants. A third approach is to inject security experts directly into the design team to work with designers. In some of the teams we studied, one member was designated to focus on cybersecurity. That person's role was to

ask important questions to make sure designers factored security into their work. While this approach does bring security design into the process earlier than the other two approaches, it does have flaws. In the teams we studied, this expert was a shared resource among multiple design teams. Someone in such a role may not be fully up to speed on the current design, requiring extra work to fill in the missing pieces. And since the expert is assigned to multiple teams, they may not always be available when needed, causing delays in the process. One designer told us that his team's consultant — a security expert but not a product designer — did not understand the product at the level necessary to offer helpful design advice.

Design With Cybersecurity Baked In

The answer, then, is for designers themselves to have enough knowledge of security needs to build in cybersecurity from the start. They will need both a general understanding of secure design principles and specific knowledge about the security considerations for the offerings they are creating. They must also believe that it's important to include security starting at idea conception and that it's their job to ensure that this is done. When those conditions are met, cybersecurity becomes one of the basic design criteria, similar to manufacturability, usability, quality, cost, and the many other elements that are part of any design process.

In the companies we studied, designers with security backgrounds reported that they made decisions on tools, libraries, and components to use in their product designs based in part on how secure they were. Such teams design for cybersecurity as naturally as they do for other criteria. In one case, a team chose not to use an open-source library because of its known vulnerabilities.

Executives and managers told us that they increasingly want to see cybersecurity built into product design from the beginning. To accomplish that, the first step they must take is to genuinely prioritize cybersecurity as a major design criterion. If leaders do not show that they value cybersecurity by talking about it and prioritizing it in their resource allocation decisions, they send a clear, if subliminal, message that it is not really important. Leaders also need to educate themselves about how

cybersecurity is being incorporated into their organization's offerings. If it is by one of the three approaches we saw in our research, they must allocate resources to change the process and show designers what behaviors are expected of them. In one company, a designer said that his managers did not follow through on their stated priority; executives talked about cybersecurity in customer meetings but then did not invest in it. This made the team question whether it was really a priority.

The difference was noticeable at companies where executives did follow through. "Everyone has a real cybersecurity mentality," said a developer from one such company. "It's ingrained in the culture at the highest levels of our organization from day one. It's everywhere in everything you do around here."

It can be a slow process to turn a large design shop into a secure design shop. One designer explained that "it can take three years to get very good at cybersecurity implementation and very familiar with what needs to be done." But that only suggests that leaders must be consistent and persevere in prioritizing this objective.

Change Designers' Values, Attitudes, and Beliefs About Security

Company leaders can tell their design teams that they want them to build for cybersecurity, but that will not happen unless additional managerial mechanisms are put in place to change the values, attitudes, and beliefs of the designers. Our model of building a culture of cybersecurity provides four steps that leaders can take to change the behaviors of their development teams and move them toward a mindset of designing for cybersecurity.³ We saw examples of these mechanisms in the teams that did bake cybersecurity into their offerings.

1. Tie performance appraisals to cybersecurity. Development teams are typically rewarded for elegant product designs and speed to market rather than for secure designs, and this sends the clear message that security is not the priority. One manager commented that designers equated their performance with getting products shipped quickly rather than getting better products shipped later, even if it meant having a product returned for

rework due to a vulnerability discovered after the offering was received.

To drive a change in the attitudes of designers, security metrics must be visible to leaders. However, our research showed that the most neglected technique for encouraging desired cybersecurity behaviors was the formal evaluation process. Criteria such as including security design components and security controls, creating designs that pass testing gates, and collaborating with security experts to ensure that offerings are as secure as possible from the early design phase should be part of individuals' performance evaluations.

More important, leaders must be ready to delay or reject the release of digital offerings with insufficient cybersecurity built in and hold the development team accountable. This will make it clear that there are consequences for insufficient security.

2. Make heroes out of designers who engage in positive cybersecurity behaviors. Recognition can be a big motivator for employees, and, as with conducting performance appraisals, leaders often fail to call out the accomplishments of those who find and fix cybersecurity issues. This sends a very clear but unintended message about what is valued in the organization.

There are numerous ways to reward and recognize employees who take cybersecurity seriously. For example, one manager we interviewed gave bonuses to designers who solved a complex security problem or drove a process that baked cybersecurity into the company's offerings. At an annual security conference, the same company formally recognized team members who were strong advocates of and contributors to the security of its offerings. Another company used membership invitations to a social network of corporate experts as a way to highlight its cybersecurity heroes. Recognition of security effectiveness can take the form of something as simple as providing a "cybersecurity champion" badge that an employee can add to their email signature. Rewards and recognition can be as easy as adding a virtual badge to an email signature. By doing so, leaders send a clear message that they value cybersecurity behaviors and publicly acknowledge them.

3. Train designers on security in addition to using experts and safety nets. Designers told us

they were not focused on the cybersecurity of their designs because others in the organization knew more than they did and would catch any issues later in the development process. This is not an attitude companies should encourage. Designers need basic training on how to design for cybersecurity and should be reminded that it is their responsibility. Agile development processes must also include stories based on cybersecurity requirements. This both highlights the need for secure offerings and provides a platform for assessing whether cybersecurity was built in from the beginning. Safety nets, testing activities, and experts in secure development life-cycle processes are still needed to supplement the initial security designs, but designers must have enough knowledge to do the first pass. (See “What Product Designers Should Know About Security.”)

4. Deliver strong and frequent messages to increase awareness of cybersecurity needs. Designers may not realize it's their job to develop elegant, cost-effective, secure offerings. This might sound counterintuitive to managers who believe they have communicated this priority. But our research shows that the security message can get lost in the complexity of product design and the many messages designers hear. Leaders need to build a communication plan to consistently reinforce the importance of creating cybersecure offerings. This can include facilitating short discussions or presentations at team or organization meetings, launching funny and engaging campaigns to make the message memorable, or even using traditional marketing techniques to change hearts and minds. The key action here is to continually remind everyone involved in the product development process how important cybersecurity is so that they internalize that belief and align their personal attitudes with the need to develop secure offerings. One leader to whom we suggested this action commented that he had never thought to voice the importance of cybersecurity in product design because he assumed his team already knew it. Upon reflection, he realized that he could not overcommunicate this message.

DIGITAL PRODUCTS ARE creating new revenue streams for many companies, but every digital product carries the risk of creating new cybersecurity

WHAT PRODUCT DESIGNERS SHOULD KNOW ABOUT SECURITY

While product designers don't have to be cybersecurity experts, they do need basic cybersecurity skills and knowledge. Our research suggests that they should incorporate the following elements into the design process:

1

Knowledge about how to design for cybersecurity in general

2

Specific security considerations for the offering they are designing

3

Basic security design protocols and practices

4

Basic security considerations for parts, components, and libraries used in designs

5

Knowledge of what tests their designs must pass to ensure that they are secure

6

Awareness of the security processes being done in parallel to build in security

7

An understanding of what level of security customers expect in the offering

8

Knowledge of what company leaders expect of designers related to cybersecure designs

9

Awareness of whom to call upon in the moment for cybersecurity expertise

10

An understanding of how to collaborate with cyber experts and the company's cybersecurity team

vulnerabilities that must be addressed. Including “design for cybersecurity” as a key design criterion at the beginning of the process will begin to address this issue by reminding designers of the value and importance of secure offerings. Demonstrating that your brand delivers secure products is increasingly important and may even confer a new competitive advantage.

Building in cybersecurity earlier in the design process makes the whole product development process more effective. It avoids the additional work, increased costs, and delays caused by last-minute reviews or testing while making it less likely that cybersecurity issues will arise later down the road. And that should make company leaders—and their customers—sleep more soundly at night.

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ACKNOWLEDGMENTS

The authors wish to thank Abigail Kolyer, MIT research assistant, and George Wrenn II, adviser, for their assistance with this research. Thank you also to the numerous product development professionals who generously gave their time to be interviewed as part of this project, and to the leaders of the companies who supported this work through access to their development teams. Funding for this project was provided by CAMS. The authors contributed equally to this work and are co-corresponding authors.

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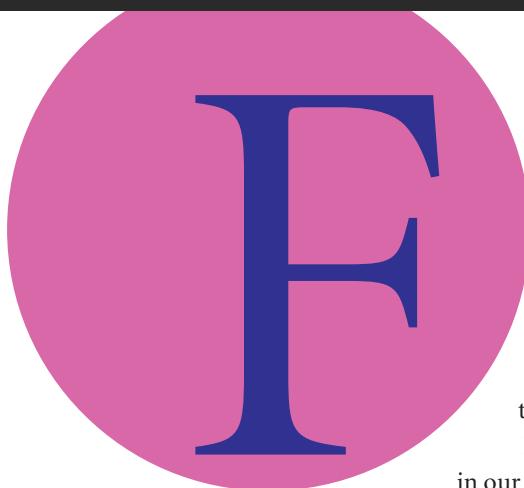
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Why Leaders Resist Empowering Virtual Teams

Many remote leaders who feel constrained, drained, and isolated are just getting in their own way.

BY PAYAL N. SHARMA, LAUREN D'INNOCENZO, AND BRADLEY L. KIRKMAN

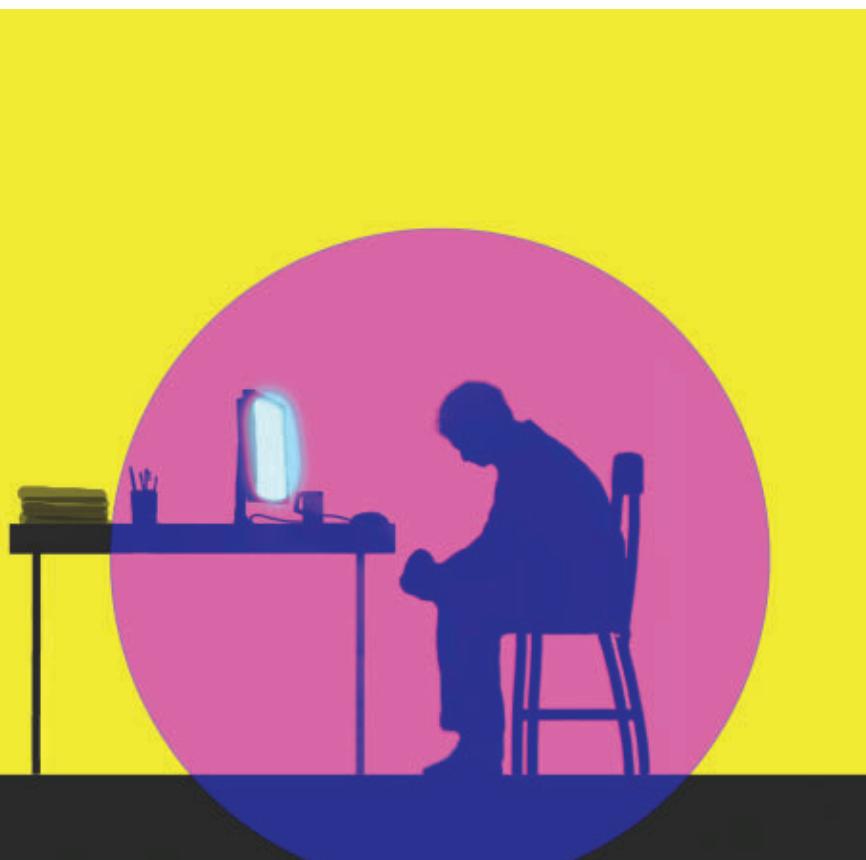


or Indira, a midlevel manager in the financial services industry, leading a virtual team has been stressful.¹ Now that everyone no longer works in the same office space, opportunities for spontaneous check-ins are limited, so it's tough to know exactly how or when people are having trouble doing their jobs. As a result, Indira worries that she can't effectively support her team. She also says her "real work" begins after a long day of video meetings. By the time she's able to focus on her independent tasks and bigger-picture thinking, she's burned out, and it's difficult to be productive.

Indira is not alone. We've heard many stories like hers over the past few years in our interviews with hundreds of remote leaders in a range of roles and industries. And studies show that such leaders associate a host of problems (both real and perceived) with all-virtual interactions. For instance, they cite technical difficulties, constrained access to information and resources, distractions at home, social isolation, and ever-blurrier work-life boundaries.²

These issues won't simply disappear after the global COVID-19 pandemic dies down, because for many businesses and employees, remote work isn't going away. According to recent surveys, over 80% of business leaders plan to keep at least a partial work-from-home arrangement in place, and executives expect a 30% reduction in physical office space.³

One viable solution to some of the challenges leaders face is to adopt an *empowering leadership* style. This involves delegating authority and decision-making to team members, coaching employees rather than directing them, and regularly seeking their input to solve problems.⁴ When leaders allow employees to have an ownership stake in their day-to-day work, people can show what they're capable of doing, which leads to



more trust and less micromanaging. That means soul-crushing “task master” meetings (all the more draining online) can be replaced with more meaningful, energizing conversations about strategy and talent development, fueling performance and growth while allowing leaders to build deeper connections with team members. Empowering leadership has many positive effects on employees, too. It’s linked to increased job satisfaction, commitment, self-efficacy, creativity, and performance, as well as decreased intentions to quit.⁵

One of the most important benefits is greater knowledge sharing among colleagues, a vital source of competitive advantage.⁶ We’ve seen this dynamic play out consistently in our research and consulting over the years, with particular rewards in remote settings. For example, in one study we conducted with Sabre, a high-tech travel reservations company that makes extensive use of virtual teams, we found that remote leaders who empowered people to experiment and take risks on the job helped them to learn and innovate more effectively. Their

team members did not have to wait around for managerial permission or guidance before making process improvements in a fluid business environment and proactively meeting ever-changing customer needs. Given the latitude to solve problems they encountered, team members devised resourceful ways of getting and sharing the necessary information remotely — by using virtual communities and easily accessible knowledge repositories — so that they could make smart decisions on the ground.⁷

Despite the noted advantages of empowering leadership, here’s the catch: Leaders often resist this approach, *especially* when managing people remotely. Whether or not they thought they had a good handle on their team before shifting to virtual work, they tend to worry about ceding power and control to employees and taking new risks in a virtual environment, where they can’t observe people directly. Although we, and others, are starting to explore these fears and identify ways to address them, much more attention has been paid to the benefits

of empowering leadership than to the reasons why managers resist this approach. Drawing on research about leadership and virtual-work stressors, we'll describe some of those reasons in detail and then recommend ways organizations can help leaders move beyond resistance.

The Sources of Resistance

Let's look at the primary reasons leaders resist empowering remote team members.

Problems with motivation. Psychological research suggests that three types of motivation compel people to lead others: *affective motivation* (they like doing it), *social-normative motivation* (they feel a sense of duty or responsibility to lead), and *noncalculative motivation* (they clearly see the benefits of leading others and focus on pursuing them rather than continually weighing the costs and fixating on the leadership "bottom line").⁸ Leaders who are significantly lagging on any one of these dimensions may resist an empowering style; they're highly likely to oppose it if they're lagging on two or three. Those who don't like leading to begin with will derive no intrinsic value from empowering others and won't want to invest energy in doing so. The same is true of those who don't feel duty-bound to lead—the buy-in simply isn't there. And constantly focusing on the costs of empowering others triggers leaders' risk aversion.

Facing additional stressors in a virtual setting can further thwart leaders' motivation and intensify their resistance to empowering leadership. For example, our conversations with leaders suggest that poor communication with remote team members can dampen leaders' affective motivation. Although leaders typically view all-virtual interactions as the root cause of communication problems, when they feel kept in the dark about other projects team members are supporting, they can't help getting frustrated with the people rather than the process. They may, in turn, be less compelled to delegate work and share responsibilities. Some leaders also confided that they are less driven to lead in a virtual environment, where they feel less visible and accountable to the organization—and less obligated to develop and coach their teams. As for fixating on costs, many remote leaders told us that they think a great deal about the long hours they

put in that take time away from their families and other personal priorities. Their jobs seemed more doable within a regular workday when they managed people in person. But now that those hours are consumed by virtual meetings, their independent work eats into what used to be personal time, and they are keenly aware of the sacrifices they are making for their jobs.

Perceived loss of control. Research also shows that people are intrinsically motivated when they believe they have power over events in their lives. This perceived *internal locus of control* promotes feelings of competence and autonomy. In contrast, those who ascribe their successes and failures to factors beyond their influence—an *external locus of control*—tend to feel that events happen to them.⁹ Thus, leaders with an internal locus of control would be more comfortable empowering others, because they wouldn't be threatened by sharing power—they would still feel they had a hand in their own fate. But leaders with an external locus of control may fear that what little control they have would be diminished if they empowered others. That is, they may worry that giving their teams more control or agency means having less themselves.

Tech-related stressors, such as internet outages, bandwidth concerns, spotty service, and crashing systems—many of which are outside the remote leader's purview—can exacerbate fears of losing control. Indira, the financial services manager we interviewed, sometimes has intermittent internet access and cannot connect to her company's internal messaging platform during the workday, which makes her feel less on top of things. It's not surprising that leaders may try to compensate by clamping down in other areas—by closely monitoring employees' progress on project tasks, for example, or strictly tracking how people allocate their time.

Concerns about risk. Psychological insights about *regulatory focus*—the tendency to either seek pleasure or avoid pain—tell us a lot about why people behave as they do.¹⁰ *Promotion*-focused individuals, who see their goals as steppingstones on a path to advancement, concentrate on the rewards that will accrue when they achieve those objectives. *Prevention*-focused individuals, who see their goals as responsibilities they are on the hook to fulfill, concentrate on minimizing losses and staying safe.

Leaders with a prevention focus may thus resist empowering their employees to take on more, because they worry about the risks of doing so. Team members might need extra hand-holding as they're learning, for example, or they might make costly mistakes that could come back to haunt and overwhelm the leader.

A leader's concerns about such risks can be intensified by the stressors associated with leading virtually. Indeed, since the major shift to remote work in 2020, many leaders we've spoken with have felt increasingly isolated being at home and exhausted because their work bleeds over into their personal time. However, instead of empowering team members to use their knowledge and expertise to accomplish the team's tasks and goals (which could solve both problems), some leaders tend to do things themselves to make sure they're done right the first time. They may believe they'll save time and energy down the line and avoid difficult interactions with team members if they don't have to fix others' mistakes. But dodging those risks actually exacerbates the leader's sense of isolation and burnout. Leaders who don't give others a chance to demonstrate their capabilities and contribute substantively are in go-it-alone mode. They take on more and more themselves — and have less and less faith in their team. Camaraderie dissipates.

Reducing Leaders' Resistance

These three reasons for resistance to empowering leadership are largely rooted in the assumption that power is a zero-sum game. Here's the thinking: Investing in people's development will cost you time and set you back. Giving others control and ownership over the work means you control and own less of it yourself. Their gains become your losses.

That thinking is misguided, however, because power is not a finite resource, and empowering leadership is about lending or sharing power — not ceding or giving it up entirely.¹¹ Paradoxically, when using an empowering style, remote leaders often become more powerful themselves. They are no longer doing the types of tasks that their employees should be and are capable of doing, so they can turn their focus to bigger-picture, longer-term, strategic pursuits. Once leaders recognize this, they

Leaders who don't give others a chance to demonstrate their capabilities and contribute substantively are in go-it-alone mode. They take on more and more themselves — and have less and less faith in their team.

become more motivated to delegate and coach employees, less fearful about losing control in the process, and eager to develop people with an eye toward what will be gained to benefit all.

How can organizations make it easier for remote leaders to share power? By addressing some of the motivation-, control-, and risk-based issues and virtual stressors that are getting in the way. Here are a few recommendations, drawn from various research findings, our observations in companies across sectors, and our interviews with leaders over the past few years.

Reframe their motives. First, help remote leaders regain their joy in leading — their affective motivation — by facilitating richer exchanges and stronger ties among team members. Having that sense of connection makes leaders feel more invested in the people they're working with and developing.

Tech-based communication tools can help serve this purpose when face-to-face interaction isn't possible. For example, some of the companies we have worked with encourage employees to turn on their cameras during virtual meetings. It may seem like a small adjustment to make, but people do interact on a deeper level when they see one another's facial expressions and body language; information gets lost in the absence of nonverbal cues.¹² In companies where cameras are usually off, we've noticed a palpable lack of energy during meetings —

people literally and figuratively phoning it in. Although not every meeting needs to be on video (too much time on-screen can actually cause fatigue), regularly seeing colleagues can certainly help strengthen bonds. So can having brief meetings that are focused not on work but on getting to know one another. For example, organizations can encourage leaders to connect once or twice a month with small groups of direct reports for just 15 minutes or so to chat about what's going on in people's lives. Don't know where to start? Leaders can ask icebreaker questions like "Who would you pick to play you in a movie of your life, and why?" If people see this as "forced fun," they may need a little push to engage interpersonally. Eventually the bonding, which can energize leaders to invest in their employees, will come more naturally.

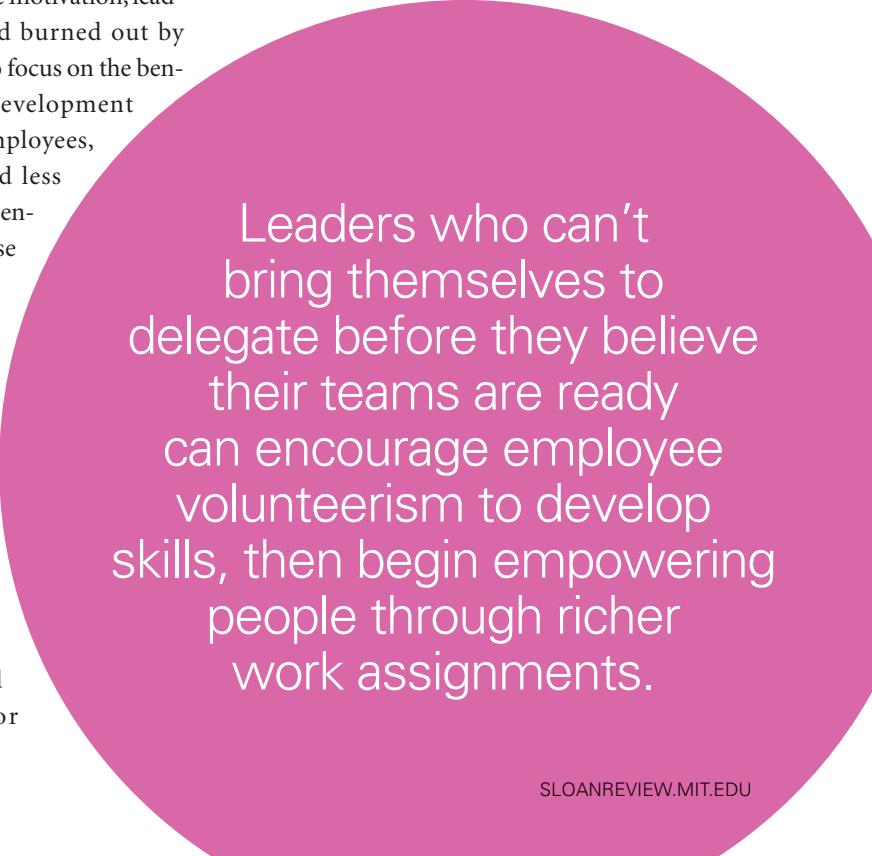
Indira, the financial services manager, suggested that leaders can gain social-normative motivation by clearly prioritizing tasks to be completed. To do this, she likes to plot things out on an urgency-importance matrix. Working with the team to outline what needs to happen in what order can help everyone — including the leader — recognize how each task affects their colleagues. This fosters a shared sense of responsibility for the group's accomplishments and performance.

As for restoring noncalculative motivation, leaders who aren't overloaded and burned out by remote stressors are better able to focus on the benefits of investing in others' development (shared workload, engaged employees, strengthened capabilities) and less likely to fixate on the costs (time, energy, potential mistakes). To ease into delegating work that will expand people's capabilities, some leaders find it helpful to create a buddy system, breaking down responsibilities into smaller pieces and assigning those to pairs of team members. This can make the delegation less risky while still freeing up leaders' time, encouraging meaningful exchanges among teammates, and providing opportunities for

growth. Leaders who can't quite bring themselves to delegate before they believe their teams are ready can avoid potential costs by encouraging employee volunteerism to develop skills.¹³ Without the costs looming, it's easier to focus on benefits: Leaders can see *how* team members are growing through their volunteering, identify ways of putting that growth to use, and then gradually begin empowering people through richer work assignments.

To prevent overload and burnout — costs that are top of mind for leaders — it helps somewhat if companies have strong guidelines or formal policies to promote better work-life balance at all levels. It's even better if senior executives model balance themselves, given that social learning theory suggests that they set the tone in organizations. Of course, organizations haven't yet figured out how to help people draw a sharper line between work and home when work is *at* home. But in the meantime, they can take reasonable steps like explicitly asking leaders and employees not to send or respond to messages after regular working hours and setting clear boundaries for clients and other stakeholders so that they won't expect round-the-clock availability.

Boost their sense of control. To counter leaders' fears of losing control, organizations should do what they can to make technology easier to manage.



Leaders who can't bring themselves to delegate before they believe their teams are ready can encourage employee volunteerism to develop skills, then begin empowering people through richer work assignments.

Equip remote leaders and their teams with the digital tools and training they need to operate smoothly and predictably, and outline some contingencies they can fall back on when things go wrong. For instance, provide alternative ways of connecting online, such as mobile hot-spot devices to use when internet service isn't reliable. If leaders feel that day-to-day work isn't threatened by connectivity problems, glitchy systems, and user fumbling and errors, they may be less inclined to micromanage their employees in an effort to control *something* in an uncertain world.

When we spoke with Terrence, a gaming casino executive in Las Vegas, he shared another idea for fostering control for both leaders and employees. He hosts mandatory weekly town hall meetings in his department. Pre-pandemic, when everyone was working onsite, these meetings were held monthly. But Terrence noticed that hallway conversations — what he termed “natural collisions” — were not happening in remote work settings, which limited information exchange and opened the door to feelings of uncertainty and powerlessness. So he increased the frequency of the meetings, deliberately encouraging people to overshare so that less information would fall through the cracks. After instituting these weekly forums, he noticed improved productivity in his department. Now he feels more confident about empowering his direct reports because he can see that they are up to speed, and he is still maintaining control of information flow through the town halls.

Make empowerment feel less risky. To encourage remote leaders to be more promotion-focused and less risk-averse so that they'll support team members' growth, we recommend taking a more holistic view of how time is spent and managed in organizations. For example, companies can mandate time off for their leaders — perhaps requiring them to take a set number of vacation days every two or three months. Of course, this gives leaders regular opportunities to reenergize, recharge, and recover from the stressors of managing remotely. But their periodic absence also forces them to allow employees to step up and take care of certain tasks so that they can become more competent and confident. The more often this happens, the less risky — and more worthwhile — it will feel for leaders to delegate.

In addition, leaders can empower employees incrementally, one task at a time, so that it's easier to anticipate and manage errors as people learn.¹⁴

Organizations can set aside meeting-free days as well — a welcome reprieve for remote teams that spend much of their time coordinating and collaborating with one another online. Many companies have instituted meeting-free Fridays to create space for exploratory, nonurgent projects that can feed longer-term development, engagement, and performance on a leisurely schedule. That's certainly one benefit. But often, employees need this meeting-free time simply to get their regular work done — and that presents another opportunity to empower them. One day a week, while you're giving people a break from meetings, give them a break from micromanagement, too. If you stay out of their way altogether on Fridays, allowing them to do their focused work completely uninterrupted, they'll gain independence, and you'll consistently get practice trusting people to do their jobs.

To get comfortable with empowerment, it's also important to establish bonding as an essential activity, not just a nice-to-have. If leaders regularly conduct brief interpersonal check-ins with teammates, they develop the trust needed to loosen their grip, so their employees can take on more challenges. This can happen in small groups, as suggested earlier, and in one-to-one sessions. Terrence, the gaming casino executive, has created a system termed “get me, guide me, and root for me” (or GGR, which corresponds to the industry phrase “gross gaming revenue”) to build relationships with remote employees, one at a time. Terrence explained that “get me” is about understanding employees and their lives, “guide me” involves coaching, and “root for me” refers to encouragement. Each check-in takes him 10 minutes at most, once a week (he deliberately schedules these meetings with this time cap in mind), and he says it usually involves “nine minutes of listening.” The benefit is clear on both sides: The employees feel supported, and Terrence gets to know them and care about them as people, which makes him want to develop them. He's touching base with them often enough to know where they are with their tasks and where they need help, which lowers the perceived risk of sharing responsibilities with them.

THERE'S NO QUESTION that remote leaders have their hands full trying to keep their teams productive, engaged, and on track — all from a distance. Although they can make things more manageable by encouraging and enabling others to step up, instead they often react to the stressors of leading in a virtual environment by feeling less motivated to lead, clamping down and asserting control, and avoiding risk wherever they can. It's a maladaptive response, but it's understandable.

By empowering others to grow, leaders can empower themselves to think bigger, achieve more, and breathe easier. Once they wrap their heads around that paradox, with some support from their organizations, they can replace a vicious cycle with a virtuous one. And who wouldn't want that?

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Sharing Value for Ecosystem Success

Winning platforms require that both leaders and followers work to further the other's interests.

BY RON ADNER

What do you call an ecosystem in which you always see your company as the central actor?

An ego-system. This is how we end up with labels such as the “Google ecosystem,” the “Facebook ecosystem,” the “insert-your-name-here ecosystem.” These labels seem impressive at the get-go, but they undermine an important truth: Ecosystem strategy is alignment strategy.

Defining ecosystems around companies blinds everyone involved to alignment hurdles and limits their ability to craft appropriate strategies. The presumption of centrality makes it harder to establish the relationships needed to achieve their goals: It’s harder for ecosystem leaders to create strategies that attract followers, and harder for ecosystem partners to know which leaders to follow and where to place their bets.

Apple offers a stark example. The most valuable company in the world has been enormously successful in extending the mobile data device ecosystem it leads — iPod to iPhone to iPad to Apple Watch, encircled by its App Store and iOS platforms. But it has been shockingly disappointing in its efforts to expand into new businesses that require the construction of new ecosystems. Apple’s failures to deliver on ambitious promises — that health care would be the company’s “greatest contribution to mankind”; that the HomePod would “reinvent home audio”; that its classroom education platform would “amplify learning and creativity in a way that only Apple can” — are concealed by the profits gushing from its core ecosystem, but they are failures nonetheless.¹ The consequences of these failures are borne not only by Apple, but also by all the companies that joined as complementors in these efforts.



If successfully aligning the partners and other participants in new ecosystems is challenging to a company as sophisticated as Apple, a giant at the height of its power, then (1) no would-be market leader should be deluded into thinking that its success in one ecosystem will naturally translate to leadership elsewhere, and (2) no would-be complementor should assume that following established leaders into new domains is a safe bet.

How can all ecosystem players do better? They can anchor their notion of ecosystems in the value propositions that are being pursued, not in corporate identity. This shift in mindset supports the formulation and execution of more successful strategies for leadership (not always the most advantageous role to play) and followership (far more common, but too often neglected) in an ecosystem world.

The Hierarchy of Ecosystem Winners

Ecosystems defined around the roles, positions, and flows across the partners that create a value proposition² will each require a unique alignment strategy. Apple, for example, participates in health, education, and smart-home ecosystems. Even though its participation in each is anchored in many of the same elements (iPhone, iOS, App Store), its role and position within the coalition of critical partners that cocreate these ecosystems is different in each case: There is no monolithic “Apple ecosystem.” This means that Apple and its partners should not expect its leadership in one ecosystem to automatically extend to leadership in another.

It almost always makes sense for companies to strive for leadership within their industries — winning that position brings great profit and pride. But ecosystems present a different hierarchy: In a successful ecosystem, there are no losers — only partners that win in different ways. In contrast, in an unsuccessful ecosystem, there are only losers. Failing at leadership in an ecosystem is failing at value creation. Although aiming for but falling short of a “first place” leadership position in an industry often leaves companies better for having made the effort, there’s little consolation for making an unsuccessful, “last place” effort in an ecosystem. You have simply failed. Here’s how the winners — and losers — typically place:

First place: At the top are leaders of successful ecosystems. No surprise there. These companies have managed to align their partners in a mutually agreeable, coherent set of positions. Their partners accept the guidance and guardrails that govern the collaboration. The leader makes the early investment in time and resources to achieve this alignment and usually is rewarded with an outsize share of overall gains.

Second place: The followers in successful ecosystems are contributors to and beneficiaries of the ability to manifest the value proposition. The absolute size of followers’ gains is often (though not always) smaller than that of the ecosystem leader. But the investments that followers need to make are smaller as well. This means that the relative returns to followers in successful ecosystems can be attractive indeed.

Third place: Third place in the hierarchy goes to followers in unsuccessful ecosystems. Followers lose when an ecosystem fails, but because their stakes are relatively small, their losses are small too.

Last place: The biggest losers are the leaders of unsuccessful ecosystems. These are the companies that invest the most upfront — in money, time, bandwidth, and prestige. When the ecosystem fails to converge, it is these companies that face the biggest write-downs.

The Clash of Ego-Systems: Mobile Payments in the United States

Apple’s ongoing efforts in mobile payments offer a clarifying study in the limits of ecosystem leadership. Phone-enabled mobile payments were supposed to revolutionize in-person transactions by eliminating the need for cash and credit cards, but this has failed to happen in the U.S., despite big investments. Since 2010, tech giants, dominant retailers, and telecom leaders have all bet big on proximity mobile payments. In 2014, Apple placed its bet with great fanfare. “Apple Pay will forever change the way all of us buy things,” announced CEO Tim Cook. But it took until 2019 for Apple Pay to edge out the Starbucks app for the top spot in U.S. mobile payment transactions. This is failure: If you’re barely beating coffee, you haven’t made a dent.

Why hasn’t Apple (or any of the big players) been able to lead a successful mobile payment ecosystem? Because so many of them have been so intent on leading it themselves, falling prey to the ego-system trap.

Success in this ecosystem depends on collaboration among four types of actors: smartphone players, banks, retailers, and mobile operators, each of which sees a clear win in the transition to mobile payments. (This is a simplification to avoid getting bogged down in technical, legal, and regulatory details.) Apple, with its undisputed leadership of the iPhone ecosystem, ocean of users, and direct control of its App Store, saw mobile payments as an important ecosystem extension. From Apple's perspective, the other three actors were already established as followers: Banks and retailers were willingly submitting their apps for inspection and approval as required for distribution via the App Store, and phone operators were happy sellers of iPhones and service plans.

Shifting to a new value proposition, however, can trigger new tensions among partners. While there is always some strain regarding terms of exchange (developers objecting to the level of App Store commissions, for example), realigning partners in pursuit of a new value proposition can give rise to more fundamental disagreements about roles and positions, which can stymie value creation.

Apple's entry into payment processing raised serious concerns for banks. It was one thing to offer web-like services through a phone app; it was quite another to have a phone-maker move into their part of the value stream. Apple overcame this hesitancy with a masterful alignment strategy: It required users to choose one default card — the “top card” — for all Apple Pay transactions. The gambit was clear: Banks that were not immediately ready to support Apple Pay would lose the chance to be a user's go-to card and the fees associated with their payments. By February 2015, more than 2,000 banks were participating.

Unfortunately, successfully aligning just one actor does not secure an ecosystem — not for the leader, and not for the followers. The mobile operators, who had been charging for mobile interactions for longer than anyone, had their own view. AT&T, Verizon, and T-Mobile, the three dominant operators in the U.S., had launched their own mobile payment initiatives as early as 2010 and had already invested hundreds of millions of dollars based on the assumption that handset-makers would be interchangeable, commoditized followers.

The largest retailers in the United States had yet another perspective as they joined together to create

the Merchant Customer Exchange to lead the ecosystem. For them, mobile payments represented an opportunity to reset unfairly high credit card transaction fees. Moreover, tying payments to smartphones presented tantalizing opportunities to collect the consumer data needed for better promotional targeting, loyalty programs, and inventory forecasting.

What mattered was not whether the solutions pursued by mobile operators and retailers were better technologies or better propositions to consumers. (They were neither and would be shut down within a few years.) What mattered was that so many of the critical partners needed for Apple Pay to succeed saw themselves as anything but followers in this new ecosystem.

The use of mobile payments in the U.S. did rise during the COVID-19 crisis, but it was the pandemic that drove adoption. Even with this once-in-a-lifetime spur, the dollar value of transactions remains far below those of credit cards, and the technology is very far from meeting the promise of “forever changing the way we buy things.” At some point, mobile payments may come to dominate transactions in the U.S. If and when they do, two things will necessarily be true: First, alignment among the actors finally will have been achieved; and second, this point of success will have been reached with incredible inefficiency and long after the failure to meet the original expectations of leaders and followers alike.

The lesson: Presuming leadership creates a false sense of alignment. It also limits the ways in which ecosystem leaders and followers can envision success.



Realigning partners in pursuit of a new value proposition can give rise to disagreements about roles and positions, which can stymie value creation.

Strategies for Ecosystem Leaders

Ecosystems are unsuccessful until they succeed, but they fail only when would-be leaders finally give up. This is the painful manifestation of the ego-system trap: You can back yourself as a leadership candidate for as long as you are willing to fund the campaign, no matter whether your required partners view your candidacy as unlikely or unreasonable. The only limit to companies throwing good money after bad is the balance of their bank accounts or the patience of their investors. These two constraints are softest for companies whose accounts are replenished by torrents of cash generated in their core businesses, which is why we see the same set of usual suspects involving themselves in so many ecosystems and, at the same



Confidence in your own leadership of a new space requires confidence that followers will value your leadership more than their own candidacy for the role.

time, making so little progress. There are steps leaders and followers can take to increase the odds of a successful ecosystem strategy.

Evaluate your leadership claim. A key to any company's ecosystem strategy is identifying when it's worthwhile to compete for leadership and when followership is advisable. The choice depends on the company and the context.

Successful ecosystem leadership, then, depends on having a compelling answer to one key question: Will your partners agree that they are better off as followers under your leadership than they would be contending for leadership themselves?

A clear “yes” is an indicator that you have a defensible — though not guaranteed — claim for leadership. A “no” is a warning sign that your ambition may be unfounded and that you risk ending up at the bottom of the hierarchy of winners. Looking for where these answers shift to “no” and “maybe” is the key to identifying the boundaries of your ecosystem, your ecosystem role, and your choice of partners.

In the case of new partners, leaders need to guard against overconfidence that is founded in a shared excitement around the value proposition. The stumbling block here is rarely the merit of the effort, but rather the fundamental debate regarding who will adjust to whom. Who will set the pace, direction, and rules of the ecosystem? If everybody involved thinks the answer is “me,” we can predict paralysis.

With existing partners, overconfidence may stem from expectations based on prior ecosystem roles. The leadership claim that Apple established with the iPhone gave it the legitimacy to dictate terms in mobile payments, but only up to a point. As the proposition shifted from connected convenience to financial operations — activities closer to the core of its partners' businesses — the answer to the leadership question shifted dramatically.

Foster followership. The ecosystem leader's job is to drive alignment. What matters is not just what you want to do with others, but what others are willing to do with you. Unlike in the U.S., mobile payments have been transformative in China. The comparison is instructive, because the difference is not just in the strength of the existing alternative (China did not have an established system of credit card payments) but in the approach taken by the successful leaders to align the ecosystem. Despite China

being more of a blank slate, the challenge of ecosystem alignment there was just as real as in the U.S. In China, however, the mobile payment proposition wasn't led by handset-makers, banks, or traditional retailers. Rather, it was Alibaba (the established leader in e-commerce) and Tencent (the established leader in messaging) that led the way in their own parallel ecosystem construction journeys.

Starting from very different initial positions, both companies pursued a strategy of sequential alignment — staged expansion — through which the value proposition and the requisite partners were brought on board in a logical order over time. For Alibaba, customers looking for alternatives to cash on delivery led to Alipay — a digital wallet funded with money deposited in a separate account that enabled a trusted way to pay for purchases. For Tencent, it was a peer-to-peer method to transfer money between users of its WeChat Pay messaging system. By enabling access to a growing number of third-party online merchants and services, it gradually entered into the realm of mobile payments in the physical world. Tencent achieved this through the use of app-generated QR codes that could be scanned with the counterparty's smartphone camera — an approach that did not require significant investment on the part of the merchant.

Positive progress with partners in each stage provided the strategic rationale for new partners to agree to followership. While the litmus-test question posed earlier must be answered in the affirmative, getting to “yes” step by step can be a much more productive path than trying to align the entire system all at once.

To be confident in your leadership as you move into a new space, you must be confident that followers will value your leadership more than their own candidacy for the role.

But what if you are not?

Wise ecosystem innovators will always view the full set of choices in the hierarchy of winners before committing to a role. They know that having a great idea and the right resources is a start, not an end. If you cannot align others around your leadership, you can always walk away to pursue another opportunity. But better than simply walking away when you cannot lead is finding a way to fit your offer within someone else's vision — thinking of followership as a role that can be shaped and a victory to be won — and developing a strategy to pursue it successfully.

Strategies for Smart Followership

Followership is no less strategic than leadership, but its rules are different. In a nascent ecosystem, it is the followers that hold the power to determine the leader. Once the leader is established and the system is secure, however, the power of followers can wane. Smart followers will be thoughtful about this window of influence — how it opens and how it closes. They will also know that roles are not permanent and recognize that they hold the power to change leaders and, potentially, seize the leadership mantle themselves. Understanding these implications is the difference between smart and naive followership. There are two key considerations when choosing followership.

Pick the leader that is right for you. Smart followers in an emerging ecosystem hold a unique power: They choose, proactively, to support the plan of a would-be leader. They recognize that the value of their endorsement gives them far more influence than companies that sit on the sidelines waiting for uncertainty to be resolved before joining.

Smart followers create momentum behind a given leader. The realpolitik is an exchange of power for influence, which means that smart followers pick their leadership candidate with care and think carefully about what they want in return.

If you choose to be a follower, first insist on understanding the way in which the leader seeks to construct the ecosystem's value proposition. How is the leader defining value? How does it envision your contribution to the proposition? Is this consistent with your own vision and strategy? Although an ecosystem is a collaboration, every business defines its own ecosystem strategy, which encompasses a view on structure, roles, and risks. Across participants, these strategies can range from consistent to contradictory. The greater the consistency in strategy among the relevant actors, the higher the likelihood that their actions will converge and succeed.

Second, if the leadership claim makes sense to you, ask yourself whether it will make as much sense to other needed participants. Recall the banks in the Apple Pay case — it is not enough that one actor is willing to follow if other critical partners are not. Who else is in the early coalition, and how will you get along?

Third, before committing precious resources and credibility to a leader, smart followers seek

clarity on the leader's goals and motives. Does the leader win when you win? Do you win when the leader wins? The answers should be "yes" and "yes."

The e-book ecosystem offers a good example. Amazon and Apple offered very different choices and constraints to book publishers as they sought to attract them to their respective platforms. Whereas Amazon insisted on setting e-book prices (initially at \$9.99 per book, which the publishers thought was much too low), Apple was very willing to let the publishers set prices themselves. Publishers loved the pricing power enabled by Apple. What the publishers missed, of course, is that the driver of Apple's profits was selling hardware; racking up zero book sales would hardly matter to Apple, as long as people bought iPads. Amazon's profits, on the other hand, were based in content sales; for it, hardware was a loss leader. Although publishers and Amazon disagreed about pricing, there was perfect alignment in wanting to drive book-purchase volume. And indeed, sales of books through Apple's digital bookstore are a rounding error relative to Amazon's sales numbers.

Shape the larger game. Smart followers will consider how they want to interact not just with the leader but with other followers as well. This is where the smartest followers make their best moves — not in negotiating against the leader, but in shaping the rules for other followers. Nowhere is the contrast starker than in the case of electronic health records (EHRs), which powered the promise of error prevention, process efficiency, and the elimination of redundant tests in the U.S. health care system. For 20 years, the IT industry had lobbied to keep the U.S. government out of EHR discussions, assuming that regulation would be bad for business. But after 20 years of failing to persuade health care providers to purchase the technology, the IT champions came to the collective realization that they were in no position to lead. For health systems, the main barrier to adoption was cost (these were expensive IT systems that would require big upfront payments and annual service fees) and opposition by doctors (who were rightly wary of the data-entry burden that these systems would impose on them).

IT giants Cerner and Epic led the charge to become followers, successfully lobbying for the U.S. government to take the lead in aligning this complex ecosystem. With the 2009 passage of the Health Information Technology for Economic and Clinical

Health Act, the government officially took charge: It addressed the goals of IT vendors by penalizing providers that did not adopt EHRs, and it addressed the goals of providers by subsidizing the adoption of EHRs. In all, \$27 billion was allocated in the form of increased Medicare and Medicaid payments for “meaningful use of certified EHR systems.”³ In 2015, these subsidy carrots would turn into sticks when providers that had not adopted EHRs “meaningfully” (consistently updating digital records with diagnoses, monitoring drug interactions, and ordering prescriptions) would see their payments cut. No follower is thrilled when their behavior is constrained or micromanaged, but although meaningful use was distasteful to hospitals, it was not so onerous as to be a deal breaker. After all, there were 27 billion reasons for them to find common ground.

Here is the crux: Hospitals agreed to follow, and in return they demanded financial compensation, which they negotiated with the leader. This is a naive approach to followership. The IT companies played a smarter game. They not only negotiated with the leader for the financial assistance that would help their sales; they also negotiated for the inclusion of meaningful use — an imposition not on the leader, but on the behavior of other followers. They shaped the long-term governance of the ecosystem when the rules were still emerging.

In the window when alignment and agreement were still being negotiated, providers could have made a reciprocal set of demands — insisting on interoperability standards across EHR systems, for example. The IT vendors were against this idea for the obvious reason that it would increase both development costs and competition among vendors. But this would likely not have been a deal breaker; they, too, had a strong financial incentive to agree. The providers did not insist, however — at least not until after the deal was done and the act was passed. By that time, it was too late. The rules were set, the alignment structure was in place, and it would be another decade before a serious move toward interoperability would have another chance to gain traction.

This is the followers’ version of the ego-system trap: acting as though the game is played only between themselves and the leader, rather than positioning broadly with regard to the other players in the ecosystem. Just as no one will stop you from throwing good

money after bad in the pursuit of futile leadership, no one will force you to exercise smart followership while the window for leverage is still open.

SUCCEEDING IN ECOSYSTEMS requires understanding and strategizing roles and structure not just for yourself, but also for those partners on whom your success depends. More broadly, strategy in the context of ecosystems must pay at least as much attention to allies as it does to rivals (something I discuss in more detail in *Winning the Right Game: How to Disrupt, Defend, and Deliver in a Changing World*).

The message for would-be leaders is that followership must be earned and then re-earned. Enduring leadership depends on being watchful, being thankful, taking nothing for granted, and staying humble. Followers, on the other hand, should think broadly and leverage the power of their role in allowing the leader to achieve alignment, with the awareness that power fades over time.

For both leaders and followers, avoiding the ego-system trap is easier said than done, but it’s worth the effort.

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EXECUTIVE BRIEFINGS

WINTER 2022 • VOLUME 63 • NUMBER 2

How Collaboration Needs Change From Mind to Marketplace

Jill E. Perry-Smith **pp. 25-31**

Key Insight: Deftly turning innovative new ideas into real offerings requires an understanding of the four stages they pass through — generation, elaboration, promotion, and implementation — and which kinds of collaboration are most effective in each phase.

Top Takeaways: Most truly novel ideas either stall out in development or lose their originality along the way. To defy the odds, leaders need to help innovators collaborate in the right ways at the right times. Idea generation benefits from random, brief encounters, while elaboration works best with the support of close colleagues. Promotion — the process of gaining support and funding to develop a concept — is most effective when innovators can ally themselves with well-connected colleagues or managers who can propagate an idea more broadly. When an idea reaches the implementation stage, the primary collaborative need is for a shared vision, trust, and group cohesion; that gives team members a sense of ownership and the drive to overcome obstacles.

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Better Ways to Green-Light New Projects

Thorsten Grohsjean, Linus Dahlander, Ammon Salter, and Paola Criscuolo **pp. 33-38**

Key Insight: To eliminate bias when deciding which new ideas to pursue, organizations need to adjust the process before, during, and after making selections.

Top Takeaways: New initiatives are inherently uncertain, particularly if they are based on new technology or approaches to the market. Deciding which new ideas are winners and which are duds is tough, in part because bias and process issues can muddy decision-making. Ideas that are extremely novel generate discomfort because of the risks involved, and factors like the race and gender of presenters can influence decision-making gatekeepers. Changes to the green-lighting process can help mitigate these biases. They include removing the name and demographic information of idea creators, standardizing submissions, having diverse voices on the evaluation team, and even choosing to randomly select midlevel projects. While there will always be some hits and some misses in the process, understanding the potential pitfalls and using processes designed to avoid them will help generate better outcomes.

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Break Out to Open Innovation

Denis Bettenmann, Ferran Giones, Alexander Brem, and Philipp Gneiting **pp. 39-43**

Key Insight: Participating in a multisponsor, industry-specific corporate accelerator program can enable organizations to more rapidly integrate innovations from startups into new-product development.

Top Takeaways: Open corporate accelerators can attract a broader array of more mature startups than single-company accelerators, and expenses are typically lower than go-it-alone accelerators. One company that has successfully adopted this model, Mercedes-Benz, emphasizes strategic fit between startups and the pressing innovation needs of its business units by hosting one-day events focused on specific technologies. It also situates the startup relationship in the business unit with proof-of-concept projects that validate solutions at low risk and cost. For the sponsor, this increases the likelihood of successfully integrating innovations into products, while startups receive the funding needed to develop and adapt their solutions without sacrificing an ownership stake.

REPRINT 63208



Setting the Rules of the Road

Ulrich Pidun, Martin Reeves, and Niklas Knust **pp. 44-50**

Key Insight: Putting the right rules in place to orchestrate a platform will create value for all participants — and help manage risk.

Top Takeaways: The high failure rate of digital business ecosystems often results from governance failure. Good governance supports an ecosystem's ability to create value, manage risk, and optimize value distribution among its partners. Platform orchestrators must determine which partners and other participants should have access to the platform; decide what level of decision rights will be given to partners and participants; decide how they will manage conduct on the platform; and define the data and property rights of partners and the distribution of value among them.

REPRINT 63223



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see page 4.

Use Networks to Drive Culture Change

Peter Gray, Rob Cross, and Michael Arena **pp. 51-58**

Key Insight: Analyzing the patterns of connection and collaboration in an organization can help leaders see more precisely where desired behaviors are communicated, modeled, observed, and adopted on the ground.

Top Takeaways: Most employees learn about culture from informal conversations that signal who they should take seriously, what to care about, and “how we do things around here.” Organizational culture reflects people’s values — their deeply held beliefs about what is good, desirable, and appropriate — and is notoriously difficult to change, especially when colleagues are embedded in informal networks with people who share their values. But those same networks can help leaders identify and overcome



obstacles to change. Network analysis can surface cultural influencers — in particular, those who prompt positive emotions in their colleagues, who excel at getting others to adopt desired cultural values. It can also provide insight into hidden tensions in order to resolve organizational conflict, and give leaders a better sense of how much time they must allow for a true cultural shift to take root.

REPRINT 63207

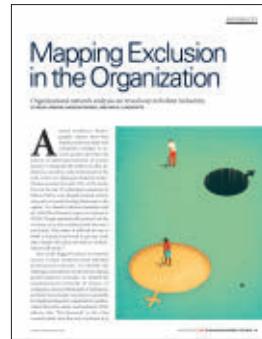
Mapping Exclusion in the Organization

Inga Carboni, Andrew Parker, and Nan S. Langowitz pp. 59-63

Key Insight: Typical measures of success in diversity, equity, and inclusion efforts, such as employee demographics and employee engagement surveys, ignore a key predictor of career advancement and well-being: workplace relationships.

Top Takeaways: Research makes clear that who people know is often more important than what they know when it comes to rising through the ranks. For instance, despite prominent high-tech companies' pledges to increase gender diversity, the pattern of underrepresentation of women persists, with women making up only 30% of the workforce in the top 75 tech companies in Silicon Valley. One of the biggest barriers continues to be women's exclusion from informal professional networks. An examination of a global computer hardware manufacturer illustrates how analyzing organizational networks reveals progress — or a lack thereof — toward building gender-inclusive organizations. Despite proactive efforts, the company found that women remained outside of critical decision-making networks. Such information can be used to inform new, more targeted inclusion efforts, such as identifying high-leverage individuals who can help drive and support diversity efforts, and developing pull strategies with "smart mentoring" to bring women who are on the periphery into the heart of critical networks.

REPRINT 63224



Does Your Business Need a Human Rights Strategy?

N. Craig Smith, Markus Scholz, and Jane Williams pp. 64-72

Key Insight: It's critical for companies to have a human rights strategy and proactively consider when and how to take action to fulfill their moral obligations and meet the expectations of stakeholders.

Top Takeaways: Customers, employees, and activists are paying increased attention to human rights. Businesses that turn a blind eye to violations in their sphere of operations risk being exposed as morally complicit as well as vulnerable to legal action and reputational harm. In assessing their alternatives, organizations need to consider how much influence they might wield — or whether their best course of action is to walk away. If they stay and act, addressing the issue collectively with other organizations may be more effective. Tactics include offering direct aid to those affected, rejecting unjust rules, and protecting institutions such as those that provide human rights law training. Companies need to assess their exposure in each situation: If an issue has high moral intensity and the company is at moderate or high exposure, inaction on addressing abuses is no longer an option.

REPRINT 63225



Design for Cybersecurity From the Start

Keri Pearlson and Keman Huang pp. 73-77

Key Insight: To lessen the vulnerability of digital products and services, cybersecurity needs to be baked into their initial design, not bolted on as an afterthought.

Top Takeaways: Development processes for building security into digital products and services continue to fail. Most designers are incentivized to focus on making offerings elegant, marketable, usable, and feature-rich, with cybersecurity rarely introduced as a key criterion in the early design stage. Organizations must include designing for security as a criterion in performance appraisals. They must ensure that digital product designers have adequate training in security issues, and place dedicated security experts on product design teams.

REPRINT 63202



Why Leaders Resist Empowering Virtual Teams

Payal N. Sharma, Lauren D’Innocenzo, and Bradley L. Kirkman pp. 78-84

Key Insight: Leaders who manage far-flung workers often need extra help developing an empowering leadership style due to overload and a fear of losing control.

Top Takeaways: While it's well known that an empowering leadership style benefits both managers and employees, remote leaders often resist adopting the approach, which includes delegating authority, coaching rather than directing, and regularly seeking employee input to solve problems. The cause is often their own overload and burnout. Organizations should focus on helping remote leaders feel in control via reliable technology, and encourage them to develop the trust to loosen their grip.

REPRINT 63205



Sharing Value for Ecosystem Success

Ron Adner pp. 85-90

Key Insight: Ecosystem players can avoid the “ego-system trap” by focusing on the value propositions being pursued — not their corporate identities.

Top Takeaways: While it almost always makes sense for companies to try to be leaders within their industries, leadership in ecosystems doesn't always guarantee success, and choosing to lead in a failed ecosystem can expose a company to greater losses than the other participants. Companies should carefully evaluate their claim to leadership and, if others have a stronger claim, consider whether following would be more profitable. In these cases, they should evaluate how the would-be leader seeks to construct the ecosystem's value proposition: How does it define, value, and envision followers' contributions to the proposition? They should then weigh whether it is consistent with their own vision and strategy. And when choosing to be an ecosystem follower, companies should look for ways to influence ecosystem rules in concert with other followers.

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information,
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The Progressive Roots of Management Science

(Continued from page 96)

prominent businesses embraced his ideas about what we might today call *sustainable work*. Brandeis was a consultant to William H. McElwain of Boston, whose shoe company's sales grew from \$75,957 in 1895 to \$8,691,274 in 1908, making it one of the largest shoe manufacturers in the world. McElwain tackled the problem of what Brandeis termed the "irregularity in the employment of the shoe worker" due to unforeseen closures that brought "misery to the workers," who often could not make rent or insurance payments. (Today, we'd call them gig workers.)

As Brandeis put it in a commencement address to Brown University students in 1912, "This irregularity had been accepted by the trade — by manufacturers and workingmen alike — as inevitable. ... But with McElwain an evil recognized was a condition to be remedied, and he set his great mind to solving the problem of irregularity of employment in his own factories." By 1908, deft management meant that "every one of his many thousand employees could find work three hundred and five days in the year."

Brandeis also advised the William Filene's Sons department store. In 1912, the business moved into a new building in Boston with more than 9 acres of floor space and 2,000 employees. With Brandeis's guidance, the company set up new processes for working conditions, as well as social facilities. It established a system of self-government, administered by the Filene Co-operative Association, which gave workers the right to appeal and even veto policies deemed detrimental to their well-being. Employees were granted 15,000 square feet on the eighth floor of the Filene's store to use for gatherings, clubs, and a library. A system of arbitration was agreed upon, and a minimum-wage scale launched, guaranteeing pay of at least \$8 a week — a big improvement for jobs

traditionally garnering what Brandeis termed "the lowest rate of wages possible."

Brandeis wasn't alone in his early advocacy of businesses pursuing broader social purposes. Pioneering organizational expert Mary Parker Follett wrote about how professional education and a diverse workforce led to greater creativity, earning her speaking invitations from the London School of Economics. Businessperson Charles Clinton Spaulding, who led the North Carolina Mutual Life Insurance Company, part of Durham, North Carolina's Black Wall Street, promoted co-operative approaches with employees as he built the largest Black-owned business in the U.S. Both should be seen as management pioneers but are largely absent from

through improved leisure, greater social connections, and time spent in nature, as well as collective well-being and better civic engagement. Brandeis advocated for ethical supply chains, stating that a retailer should know "whether the goods which he sold were manufactured under conditions which were fair to the workers — fair as to wages, hours of work, and sanitary conditions." He based his management advice to the Filenes, McElwain, and countless others on the idea that businesses are engines of progress and their goal should be to facilitate the development of better citizens, because better citizens built better communities.

So the next time you consider how your organization's performance should be measured and want to incorporate metrics

Brandeis advocated for ethical supply chains, stating that a retailer should know "whether the goods which he sold were manufactured under conditions which were fair to the workers."

curricula. Even the founding father of economics, Adam Smith, wrote that social well-being and opportunities for the disadvantaged were the ultimate purpose of good management. (Read Book V of *The Wealth of Nations*.)

Recalibrating how we understand the history of this field and seeing Brandeis and figures like Follett and Spaulding as the discipline's cofounders enables us to see sustainable management and the idea that businesses should advance social goods not as modern trends but as fundamental practice.

Brandeis wasn't against greater economic or financial gain (nor were Follett, Spaulding, or Smith). He just thought that they should not be ends in themselves. Economic efficiency must be a means to other ends: a more balanced existence

of success other than economic efficiency and financial ratios, know that you are not pushing against the weight of management's past. New perspectives on the history of management have your back and contain many inspirational examples of how we might build better ways of managing for the future.

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Reprint 63229. For ordering information, see page 4.
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The Progressive Roots of Management Science

BY STEPHEN CUMMINGS AND TODD BRIDGMAN

CONVENTIONAL WISDOM HOLDS that the original objectives of management science were to promote economic efficiency and financial returns; the pursuit of goals loftier than moneymaking is seen as a recent development. But this isn't the full picture. At its roots, the discipline is also closely aligned with current thinking about organizational purpose and managing with a broad community of stakeholders in mind. Today's conversations about corporate social responsibility are not moving away from the principles of scientific management; they're returning to them.

Anyone who has studied management will likely have been taught that the field's founder is the efficiency-obsessed Frederick Winslow Taylor. The notion attributed to Taylor — that economic efficiency is management's fundamental principle — reigned in the 20th century and into the 21st. Administration expert Luther Gulick wrote in 1937 that for management, "whether public or private, the basic 'good' is efficiency." Management guru Peter Drucker echoed the idea in 1946, stating that "the purpose of the corporation is to be economically efficient." More recently, management thinker Gary Hamel has perpetuated the view that "management was invented to solve the problem of inefficiency."

Over the past century, managers have

certainly acted as if their ultimate performance metric were economic productivity, made manifest in common measures like return on investment, earnings per share, and profit margins.

However, our new research highlights that the work of Louis Brandeis preceded Taylor's. In the early 1900s, Brandeis was an advocate and business adviser who



came to be known as "the people's lawyer." His view that business should serve a higher social purpose sounds strikingly contemporary. His ideas became popular and found significant audiences among businesses that applied and advocated sustainable work practices.

Brandeis — who would go on to serve as a justice on the U.S. Supreme Court from 1916 to 1939 — was the primary legal counsel for the conservation movement, which was conceived by U.S. President Theodore Roosevelt and adviser Gifford Pinchot at the turn of the 20th century. It was developed to counter the prevailing view that the American dream conferred freedom to take advantage of natural resources for financial gain, whatever the environmental or social costs.

In 1910, as part of the campaign promoting conservation, Brandeis articulated a new approach he termed *scientific management* (a term often wrongly credited to Taylor). He used it to argue a high-profile lawsuit against a railroad company. The railroad's near monopoly and constant price increases were harming small businesses, and Brandeis made the case that if it employed scientific management to reduce waste, it could keep prices stable and increase profits in the process. Newspapers celebrated Brandeis as a "legal Hercules" on their front pages. After he won, Brandeis and Roosevelt told the world that scientific management was "a new approach to industry which has conservation as its central motive."

Importantly, Brandeis's ideas weren't just theoretical. He became the world's best known management consultant after his victory, and several (Continued on page 95)

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