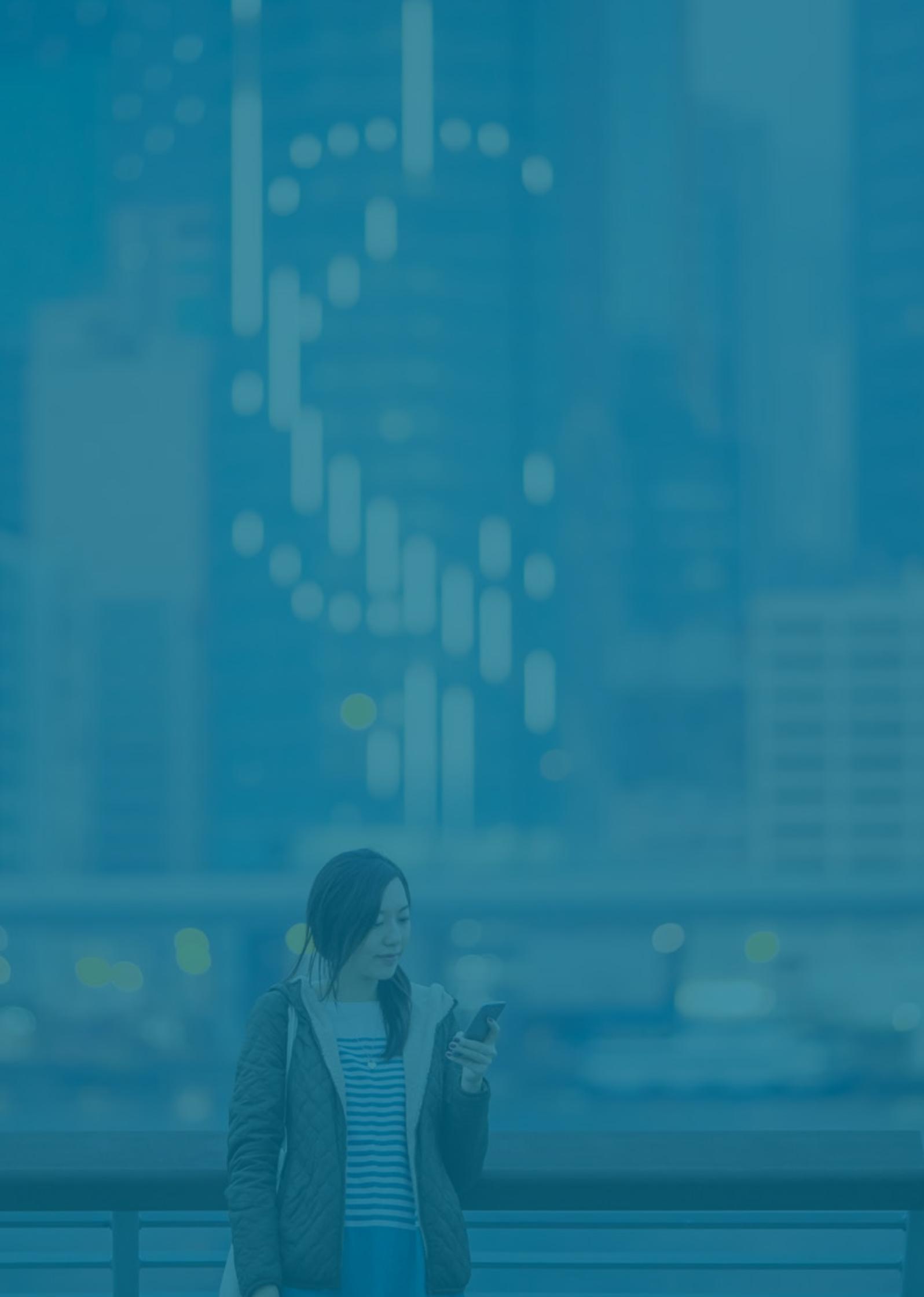


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The case for digital reinvention

Digital technology, despite its seeming ubiquity, has only begun to penetrate industries. As it continues its advance, the implications for revenues, profits, and opportunities will be dramatic.

by Jacques Bughin, Laura LaBerge, and Anette Mellbye

As new markets emerge, profit pools shift, and digital technologies pervade more of everyday life, it's easy to assume that the economy's digitization is already far advanced. According to our latest research, however, the forces of digital have yet to become fully mainstream. On average, industries are less than 40 percent digitized, despite the relatively deep penetration of these technologies in media, retail, and high tech.

As digitization penetrates more fully, it will dampen revenue and profit growth for some, particularly the bottom quartile of companies, according to our research, while the top quartile captures disproportionate gains. Bold, tightly integrated digital strategies will be the biggest differentiator between companies that win and companies that don't, and the biggest payouts will go to those that initiate digital disruptions. Fast-followers with operational excellence and superior organizational health won't be far behind.

These findings emerged from a research effort to understand the nature, extent, and top-management implications of the progress of digitization. We tailored our efforts to examine its effects along multiple dimensions: products and services, marketing and distribution channels, business processes,

supply chains, and new entrants at the ecosystem level (for details, see sidebar “About the research”). We sought to understand how economic performance will change as digitization continues its advance along these different dimensions. What are the best-performing companies doing in the face of rising pressure? Which approach is more important as digitization progresses: a great strategy with average execution or an average strategy with great execution?

The research-survey findings, taken together, amount to a clear mandate to act decisively, whether through the creation of new digital businesses or by reinventing the core of today’s strategic, operational, and organizational approaches.

MORE DIGITIZATION—AND PERFORMANCE PRESSURE—AHEAD

According to our research, digitization has only begun to transform many industries (Exhibit 1). Its impact on the economic performance of companies, while already significant, is far from complete.

This finding confirms what many executives may already suspect: by reducing economic friction, digitization enables competition that pressures revenue and profit growth. Current levels of digitization have already taken out, on average, up to six points of annual revenue and 4.5 points of growth in earnings before interest and taxes (EBIT). And there’s more pressure ahead, our research suggests, as digital penetration deepens (Exhibit 2).

While the prospect of declining growth rates is hardly encouraging, executives should bear in mind that these are *average* declines across *all* industries. Beyond the averages, we find that performance is distributed unequally, as digital further separates the high performers from the also-rans. This finding is consistent with a separate McKinsey research stream, which also shows that economic performance is extremely unequal. Strongly performing industries, according to that research, are three times more likely than others to generate market-beating economic profit. Poorly performing companies probably won’t thrive no matter which industry they compete in.¹

At the current level of digitization, median companies, which secure three additional points of revenue and EBIT growth, do better than average ones, presumably because the long tail of companies hit hard by digitization pulls down the mean. But our survey results suggest that as digital increases

¹ Chris Bradley, Angus Dawson, and Sven Smit, “The strategic yardstick you can’t afford to ignore,” *McKinsey Quarterly*, October 2013, McKinsey.com.

economic pressure, all companies, no matter what their position on the performance curve may be, will be affected.

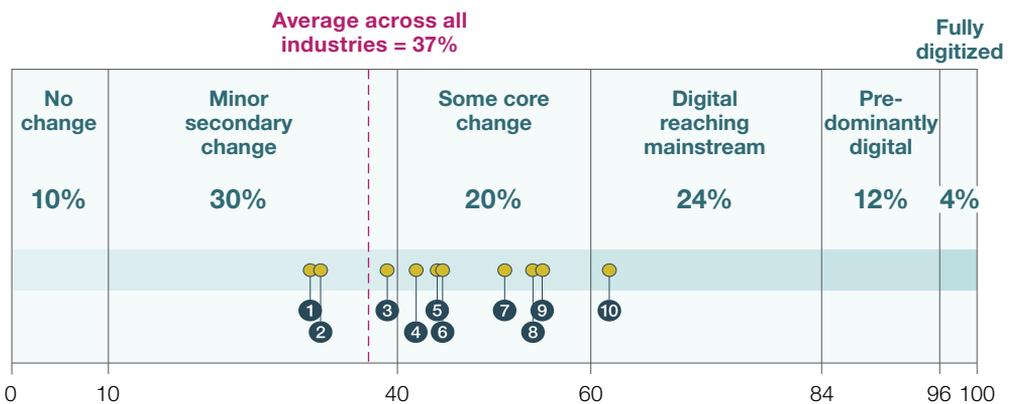
UNEVEN RETURNS ON INVESTMENT

That economic pressure will make it increasingly critical for executives to pay careful heed to where—and not just how—they compete and to monitor closely the return on their digital investments. So far, the results are uneven. Exhibit 3 shows returns distributed unequally: some players in every industry are earning outsized returns, while many others in the same industries are experiencing returns below the cost of capital.

Exhibit 1

Digital is penetrating all sectors, but to varying degrees.

Perception of digital penetration by industry,¹ % of respondents



Selected industries²

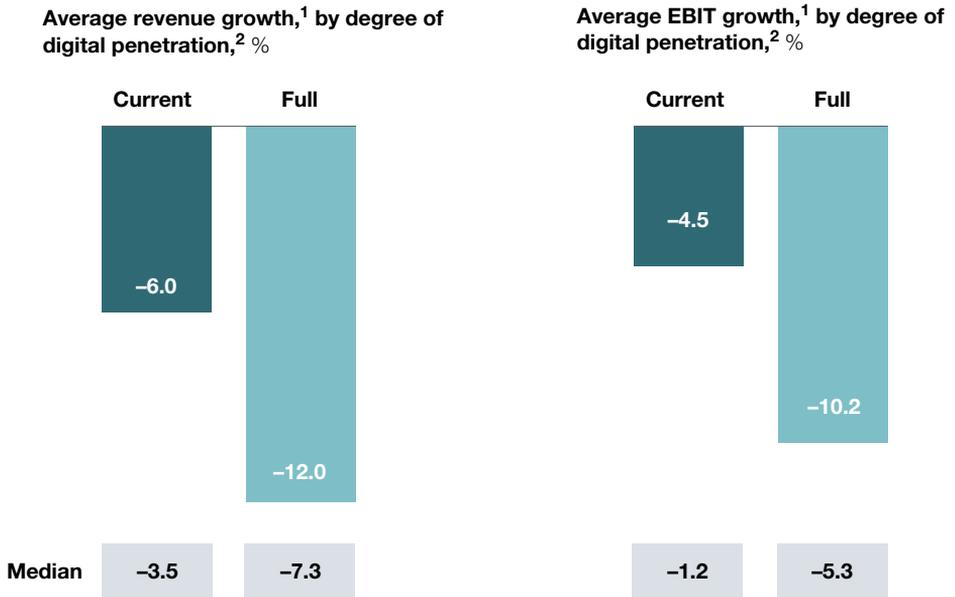
- | | |
|---------------------------------|--|
| ① Consumer packaged goods (31%) | ⑥ Travel, transport, and logistics (44%) |
| ② Automotive and assembly (32%) | ⑦ Healthcare systems and services (51%) |
| ③ Financial services (39%) | ⑧ High tech (54%) |
| ④ Professional services (42%) | ⑨ Retail (55%) |
| ⑤ Telecom (44%) | ⑩ Media and entertainment (62%) |

¹ Data reflect average of respondents' ratings on degree of change in the past three years within each industry across 5 dimensions (products, marketing and distribution, processes, supply chains, and new entrants at the ecosystem level).

² For consumer packaged goods, n = 85; automotive and assembly, n = 112; financial services, n = 310; professional services, n = 307; telecom, n = 55; travel, transport, and logistics, n = 103; healthcare systems and services, n = 78; high tech, n = 348; retail, n = 89; and media and entertainment, n = 86.

Exhibit 2

Digitization is putting pressure on revenue and profit growth.



¹ We based our model of average growth in revenues and earnings before interest and taxes (EBIT) at current and full digitization on survey respondents' perceptions of their companies' responses to digitization, postulating causal links, and calculating their magnitude through both linear- and probit-regression techniques.

² Digital penetration estimated using survey responses; average digital penetration across industries currently = 37%.

These findings suggest that some companies are investing in the wrong places or investing too much (or too little) in the right ones—or simply that their returns on digital investments are being competed away or transferred to consumers. On the other hand, the fact that high performers exist in every industry (as we'll discuss further in a moment) indicates that some companies are getting it right—benefiting, for example, from cross-industry transfers, as when technology companies capture value in the media sector.

WHERE TO MAKE YOUR DIGITAL INVESTMENTS

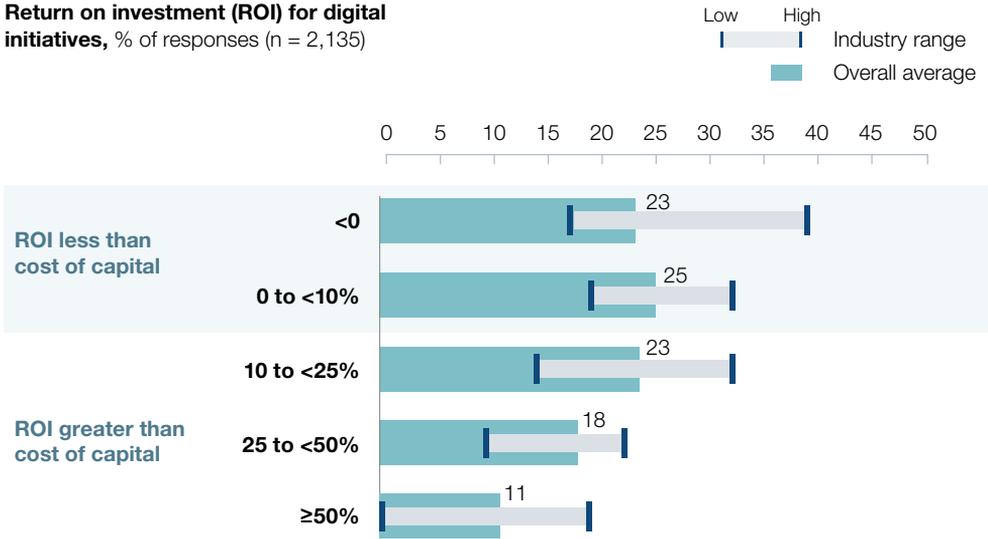
Improving the ROI of digital investments requires precise targeting along the dimensions where digitization is proceeding. Digital has widely expanded the number of available investment options, and simply spreading the same amount of resources across them is a losing proposition. In our research, we measured five separate dimensions of digitization's advance into industries: products and services, marketing and distribution channels, business processes, supply chains, and new entrants acting in ecosystems.

How fully each of these dimensions has advanced, and the actions companies are taking in response, differ according to the dimension in question. And

Exhibit 3

Some digital initiatives generate attractive returns, while others don't return their cost of capital.

Return on investment (ROI) for digital initiatives, % of responses (n = 2,135)



there appear to be mismatches between opportunities and investments. Those mismatches reflect advancing digitization's uneven effect on revenue and profit growth, because of differences among dimensions as well as among industries. Exhibit 4 describes the rate of change in revenue and EBIT growth that appears to be occurring as industries progress toward full digitization. This picture, combining the data for all of the industries we studied, reveals that today's average level of digitization, shown by the dotted vertical line, differs for each dimension. Products and services are more digitized, supply chains less so.

To model the potential effects of full digitization on economic performance, we linked the revenue and EBIT growth of companies to a given dimension's digitization rate, leaving everything else equal. The results confirm that digitization's effects depend on where you look. Some dimensions take a bigger bite out of revenue and profit growth, while others are digitizing faster. This makes intuitive sense. As platforms transform industry ecosystems, for example, revenues grow—even as platform-based competitors put pressure on profits. As companies digitize business processes, profits increase, even though little momentum in top-line growth accompanies them.

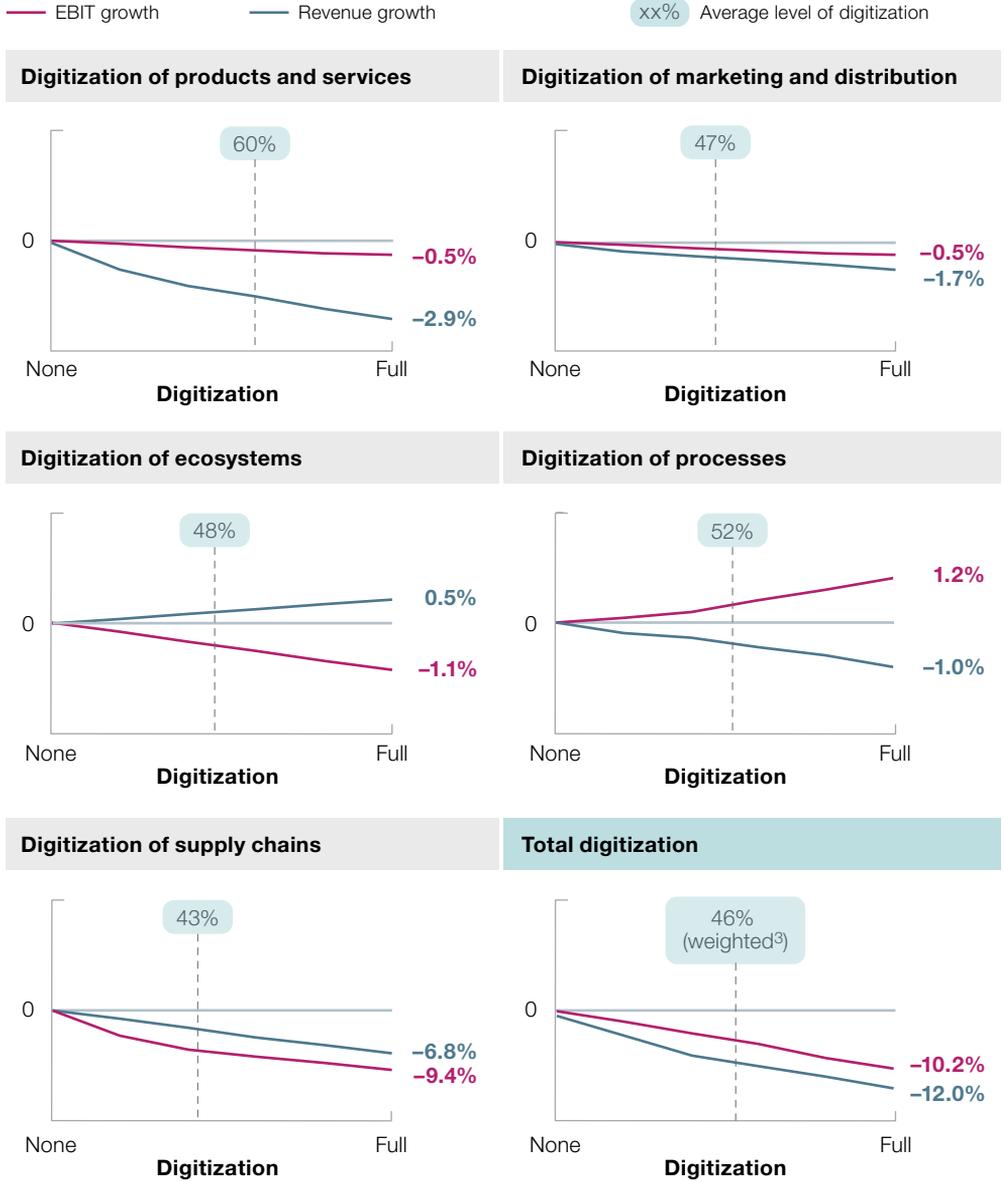
The biggest future impact on revenue and EBIT growth, as Exhibit 4 shows, is set to occur through the digitization of supply chains. In this dimension, full digitization contributes two-thirds (6.8 percentage points of 10.2 percent)

Exhibit 4

Products are more digitized, while supply chains are less so.

Effect of digitization on EBIT¹ and revenue relative to current growth trajectory (represented as 0),² % difference

Note: y axes scale to different values



¹EBIT = earnings before interest and taxes.

²We based our model of average growth in revenue and EBIT at current and full digitization on survey respondents' perceptions of their companies' responses to digitization, postulating causal links, and calculating their magnitude through both linear- and probit-regression techniques.

³Weighted average for industries whose respondents replied on each of the 5 dimensions, reflecting a subset of total respondents surveyed. Unweighted average level of digitization across industries for all respondents = 37%.

STRUCTURING YOUR DIGITAL REINVENTION

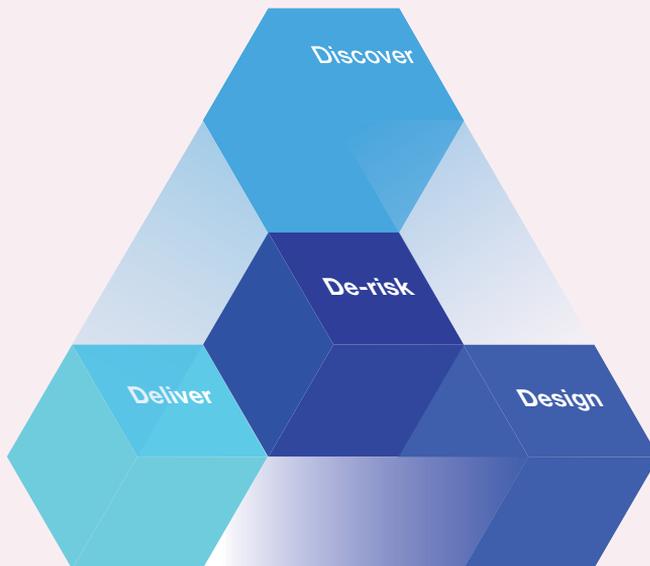
Leading companies invest more boldly in digital than their less well-performing counterparts do, according to McKinsey's 2016 digital survey. They also invest more *broadly* by targeting each dimension in which digitization is rapidly advancing: products and distribution, business processes, supply chains, and ecosystems. As executives look to deepen and broaden the digital reinvention of their own companies, they may benefit from a structured process grouped around discovering, designing, delivering, and de-risking their digital investments (exhibit). Let's look at each of these in turn.

average economic profit, according to McKinsey analysis, executives must *discover* the industry-level insights needed to identify sources of disruption as markets evolve. By grounding their insights in supply-and-demand shifts, they can more clearly recognize the vectors where disruption originates.¹ This reinvention phase also requires companies to assess the capabilities they must have to realize their strategic aspirations so that they can identify critical needs: cloud-based solutions, personalization and analytics, agile techniques, performance optimization, or something else.

Since industry effects account for two-thirds of a company's variation from

Given the broad scope of the investment required, digital reinventions mandate an

Exhibit



Discover:
Shape digital ambition, strategy, and business case based on industry-level insights

Design:
Reinvent and prototype new capabilities and breakthrough journeys as part of a program

Deliver:
Activate an ecosystem of external partners to rapidly deliver at scale

De-risk:
Structure the change program, resources, and commercial model to reduce operational and financial risk

end-to-end *design* of business processes, with close attention to customer use cases, IT requirements, and organizational elements (such as structure, talent, incentives, and culture). The output of this work is a digital blueprint to address capability gaps and to recruit, develop, provide incentives for, and retain the necessary talent. The resulting implementation plan prioritizes the initiatives that generate the greatest economic value.

With these essentials in place, a digital reinvention must now *deliver* the capabilities needed to meet a company's strategic goals. No organization will have all the capabilities it needs within its own walls. Executives must therefore develop an ecosystem of external teams, partners, suppliers, and customers, including a mix of platform players, delivery specialists, and niche outfits with specific industry expertise and capabilities. The reinvention

team must not only play “air traffic controller” for the project's numerous moving parts but also have the credibility and skill to solve problems along the many facets of the business.

Across all of these stages, executives can structure the process to minimize risk. Cybersecurity is one obvious area of focus. Companies can further *de-risk* their reinventions by embracing DevOps, in which teams learn to automate tests for software, establish systems that roll back failures in seconds, and make fixes without putting significant parts of the business at risk.²

¹ Angus Dawson, Martin Hirt, and Jay Scanlan, “The economic essentials of digital strategy,” *McKinsey Quarterly*, March 2016, McKinsey.com.

² For more about integrating DevOps into the core of your business, see Satty Bhens, Ling Lau, and Shahar Markovitch, “Finding the speed to innovate,” April 2015, McKinsey.com.

Peter Dahlström is a senior partner in McKinsey's London office, where **Liz Ericson** is a partner.

The question, it seems, looking at exhibits 4 and 5 in combination, is whether companies are overlooking emerging opportunities, such as those in supply chains, that are likely to have a major influence on future revenues and profits. That may call for resource reallocation. In general, companies that strategically shift resources create more value and deliver higher returns to shareholders.³ This general finding could be even more true as digitization progresses.

ON THE FRONT FOOT

Our survey results also suggest companies are not sufficiently bold in the magnitude and scope of their investments (see sidebar “Structuring your digital reinvention”). Our research (Exhibit 6) suggests that the more aggressively they respond to the digitization of their industries—up to and including initiating digital disruption—the better the effect on their projected revenue and profit growth. The one exception is the ecosystem

³ Stephen Hall, Dan Lovallo, and Reinier Musters, “How to put your money where your strategy is,” *McKinsey Quarterly*, March 2012, McKinsey.com.

Exhibit 6

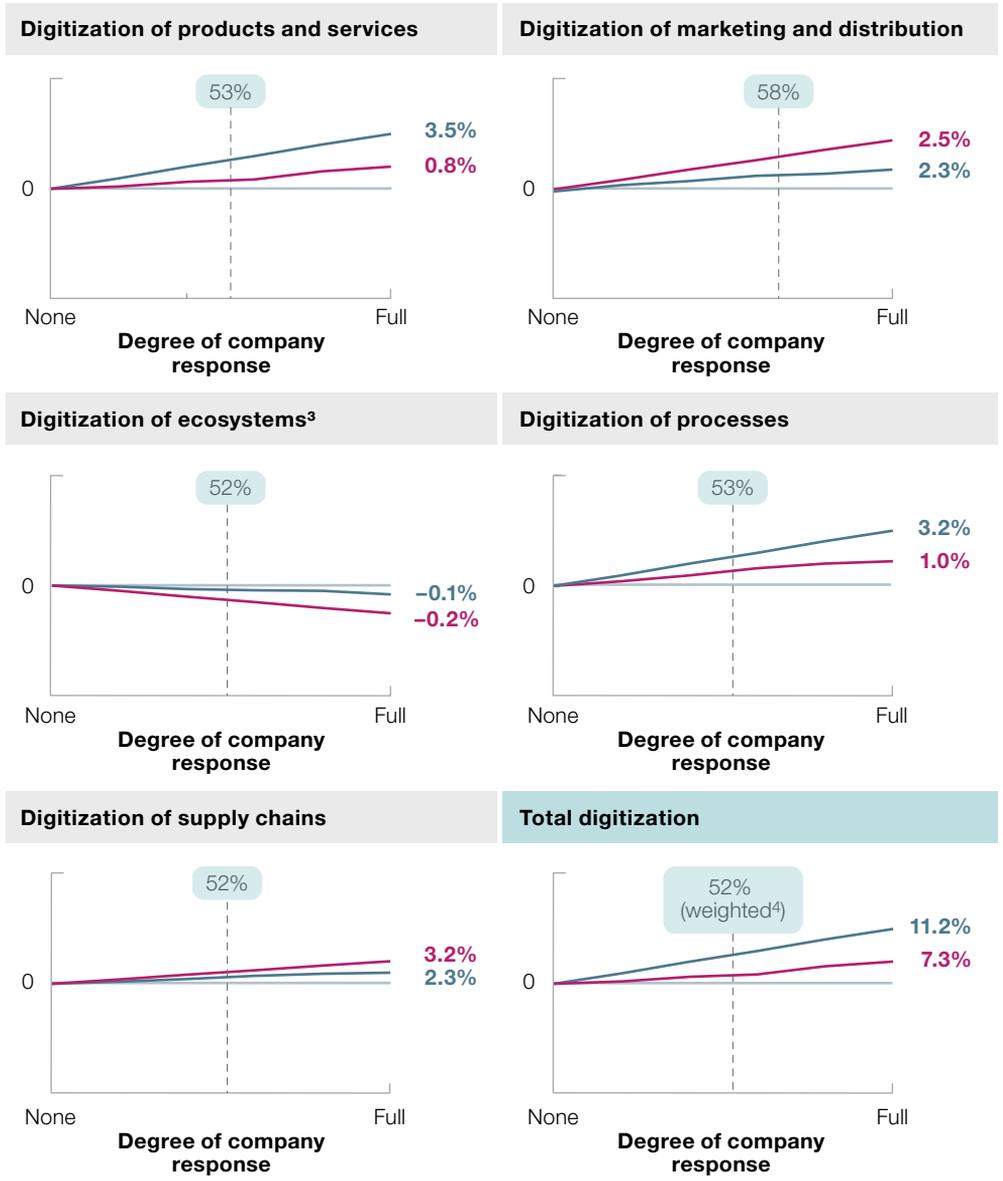
When companies respond to digitization assertively and across multiple dimensions, they improve their performance.

Effect of company response to digitization on EBIT¹ and revenue relative to current growth trajectory (represented as 0),² % difference

Note: y axes scale to different values

— EBIT growth — Revenue growth

xx% Average level of digitization



¹EBIT = earnings before interest and taxes.

²We based our model of average growth in revenue and EBIT at current and full digitization on survey respondents' perceptions of their companies' responses to digitization, postulating causal links, and calculating their magnitude through both linear- and probit-regression techniques.

³Overactive response to new competitors in ecosystems can actually lower projected growth.

⁴Weighted average for industries whose respondents replied on each of the 5 dimensions, reflecting a subset of total respondents surveyed. Unweighted average level of digitization across industries for all respondents = 37%.

dimension: an overactive response to new hyperscale competitors actually lowers projected growth, perhaps because many incumbents lack the assets and capabilities necessary for platform strategies.

As executives assess the scope of their investments, they should ask themselves if they have taken only a few steps forward in a given dimension—by digitizing their existing customer touchpoints, say. Others might find that they have acted more significantly by digitizing nearly all of their business processes and introducing new ones, where needed, to connect suppliers and users.

To that end, it may be useful to take a closer look at Exhibit 6, which comprises six smaller charts. The last of them totals up actions companies take in each dimension of digitization. Here we can see that the most assertive players will be able to restore more than 11 percent of the 12 percent loss in projected revenue growth, as well as 7.3 percent of the 10.4 percent reduction in profit growth. Such results will require action across all dimensions, not just one or two—a tall order for any management team, even those at today's digital leaders.

LOOKING AT THE DIGITAL WINNERS

To understand what today's leaders are doing, we identified the companies in our survey that achieved top-quartile rankings in each of three measures: revenue growth, EBIT growth, and return on digital investment.

We found that more than twice as many leading companies closely tie their digital and corporate strategies than don't. What's more, winners tend to respond to digitization by changing their corporate strategies significantly. This makes intuitive sense: many digital disruptions require fundamental changes to business models. Further, 49 percent of leading companies are investing in digital more than their counterparts do, compared with only 5 percent of the laggards, 90 percent of which invest less than their counterparts. It's unclear which way the causation runs, of course, but it does appear that heavy digital investment is a differentiator.

Leading companies not only invested more but also did so across *all* of the dimensions we studied. In other words, winners exceed laggards in both the *magnitude* and the *scope* of their digital investments (Exhibit 7). This is a critical element of success, given the different rates at which these dimensions are digitizing and their varying effect on economic performance.

Strengths in organizational culture underpin these bolder actions. Winners were less likely to be hindered by siloed mind-sets and behavior or by a fragmented view of their customers. A strong organizational culture is

important for several reasons: it enhances the ability to perceive digital threats and opportunities, bolsters the scope of actions companies can take in response to digitization, and supports the coordinated execution of those actions across functions, departments, and business units.

BOLD STRATEGIES WIN

So we found a mismatch between today’s digital investments and the dimensions in which digitization is most significantly affecting revenue and profit growth. We also confirmed that winners invest more, and more broadly and boldly, than other companies do. Then we tested two paths to growth as industries reach full digitization.

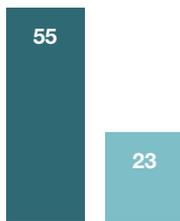
Exhibit 7

What leading companies do differently from the rest

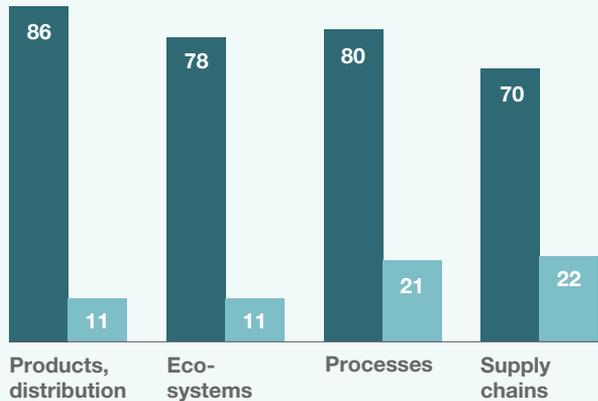
% of respondents¹
(n = 2,135)

■ Winners ■ Others

Ensure digital strategy is aligned with corporate strategy



Exercise high level of strategic response to digital change in:

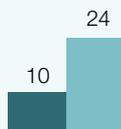


Avoid pitfalls in organization and culture

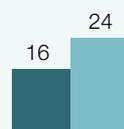
Have siloed mind-sets and behavior



Lack a common culture across business units



Lack a common view of their customers across the organization



The first path emphasizes strategies that change a business’s scope, including the kind of pure-play disruptions the hyperscale businesses discussed earlier generate. As Exhibit 8 shows, a great strategy can by itself retrieve all of the revenue growth lost, on average, to full digitization—at least in the aggregate industry view. Combining this kind of superior strategy with median performance in the nonstrategy dimensions of McKinsey’s digital-quotient framework—including agile operations, organization, culture, and talent—yields total projected growth of 4.3 percent in annual revenues. (For more about how we arrived at these conclusions, see sidebar “About the research.”)

Most executives would fancy the kind of ecosystem play that Alibaba, Amazon, Google, and Tencent have made on their respective platforms. Yet many recognize that few companies can mount disruptive strategies, at least at the ecosystem level. With that in mind, we tested a second path to revenue growth (Exhibit 9).

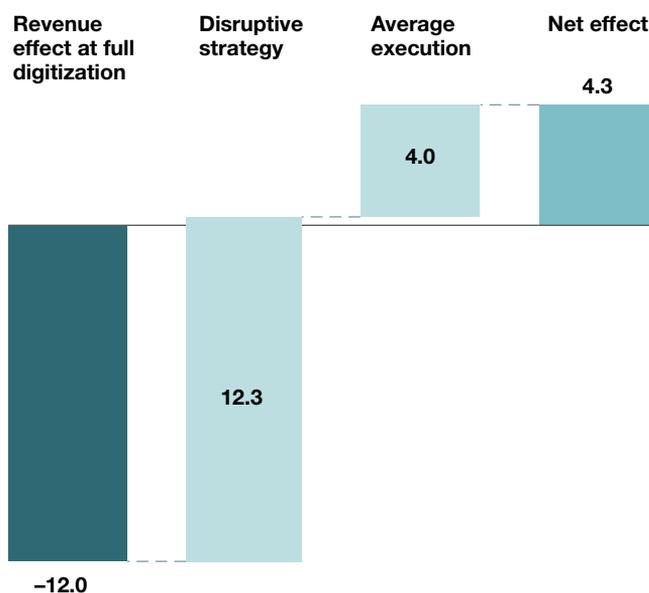
Companies in this profile lack a disruptive strategic posture but compensate by being in the top 25 percent for all the other elements of digital maturity.⁴ This fast-follower profile allows more room for strategic error—you don’t

⁴ For more about digital maturity, see Tanguy Catlin, Jay Scanlan, and Paul Willmott, “Raising your Digital Quotient,” *McKinsey Quarterly*, June 2015, McKinsey.com.

Exhibit 8

Disruptive strategies are a powerful response to intense digitization.

Revenue-growth profile, %



ABOUT THE RESEARCH

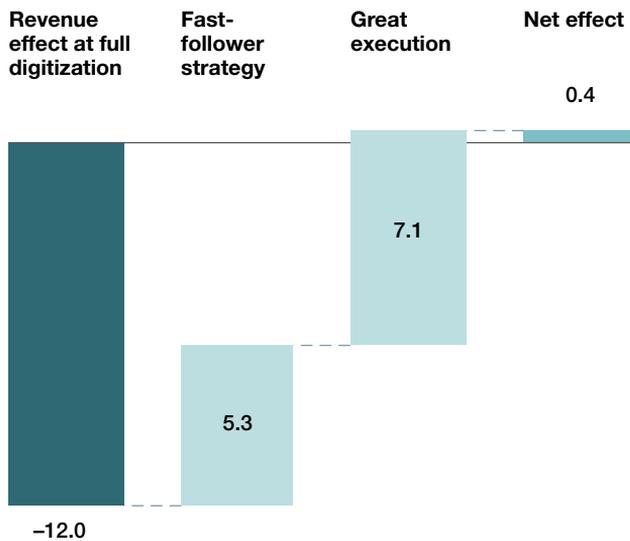
To go beyond the descriptive statistics that limit the relevance of so much survey research, we built a causal model of digital performance. The model's first input, from the survey itself, conveyed the current level of digitization (as reported by companies) in each of five dimensions: products and services, marketing and distribution channels, business processes, supply chains, and new entrants at the ecosystem level. The second input from the survey was the level of response companies had taken, and planned to take, on those dimensions, as well as their core enabling strategic and organizational capabilities.

We then modeled average growth in revenue and earnings before interest and taxes (EBIT) for all companies in the sample at current and full digitization, based on survey respondents' perceptions of their companies' responses to digitization, postulating causal links, and calculating their magnitude through both linear- and probit-regression techniques, controlling for industry, company size, geography, and type of customer segment (B2B or B2C).

Exhibit 9

Fast-following and great execution are the next best thing to disruption.

Revenue-growth profile, %



have to place your bets quite so precisely. It also increases the premium on how well you execute. The size of the win is just slightly positive at 0.4 percent in annual revenue growth: 5.3 percent from good (but not best-in-class disruptive) strategy and an additional 7.1 percent through top-quartile digital maturity. This is probably good news for incumbents, since many of them are carefully watching tech start-ups (such as those in fintech) to identify the winning plays and then imitating them at their own bigger scale. That approach, to be sure, demands cutting-edge agility to excel on all the operational and organizational aspects of digital maturity.

In the quest for coherent responses to a digitizing world, companies must assess how far digitization has progressed along multiple dimensions in their industries and the impact that this evolution is having—and will have—on economic performance. And they must act on each of these dimensions with bold, tightly integrated strategies. Only then will their investments match the context in which they compete. 

Jacques Bughin is a director of the McKinsey Global Institute and a senior partner in McKinsey's Brussels office; **Laura LaBerge** is a senior practice manager of Digital McKinsey and is based in the Stamford office; and **Anette Mellbye** is an associate partner in the London office.

The authors wish to thank Dan Lovallo, Soyoko Umeno, and Nicolas van Zeebroeck for their contributions to this article.

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An incumbent's guide to digital disruption

Incumbents needn't be victims of disruption if they recognize the crucial thresholds in their life cycle, and act in time.

by Chris Bradley and Clayton O'Toole

A decade ago, Norwegian media group Schibsted made a courageous decision: to offer classifieds—the main revenue source of its newspaper businesses—online for free. The company had already made significant Internet investments but realized that to establish a pan-European digital stronghold it had to raise the stakes. During a presentation to a prospective French partner, Schibsted executives pointed out that existing European classifieds sites had limited traffic. “The market is up for grabs,” they said, “and we intend to get it.”¹ Today, more than 80 percent of their earnings come from online classifieds.²

About that same time, the boards of other leading newspapers were also weighing the prospect of a digital future. No doubt, like Schibsted, they even developed and debated hypothetical scenarios in which Internet start-ups siphoned off the lucrative print classified ads the industry called its “rivers of gold.” Maybe these scenarios appeared insufficiently alarming—or maybe they were too dangerous to even entertain. But very few newspapers followed Schibsted's path.

¹ Raf Weverbergh, “8 lessons in how to disrupt yourself from Schibsted,” Whiteboard, whiteboardmag.com.

² Annual report, Schibsted, 2015, schibsted.com.

From the vantage point of 2016, when print media lie shattered by a tsunami of digital disruption, it's easy to talk about who made the "right" decision and who the "wrong." Things are far murkier when one is actually in the midst of disruption's uncertain, oft-hyped early stages. In the 1980s, steel giants famously underestimated the potential of mini-mills. In the 1980s and 1990s, the personal computer put a stop to Digital Equipment Corporation, Wang Laboratories, and other minicomputer makers. More recently, web retailers have disrupted physical ones, and Airbnb and Uber Technologies have disrupted lodging and car travel, respectively. The examples run the gamut from database software to boxed beef.

What they have in common is how often incumbents find themselves on the wrong side of a big trend. No matter how strong their ingoing balance sheets and market share—and sometimes because of those very factors—incumbents can't seem to hold back the tide. The champions of disruption are far more often the attackers than the established incumbent. The good news for incumbents is that many industries are still in the early days of digital disruption. Print media, travel, and lodging provide valuable illustrations of the path increasingly more will follow. For most, it's early enough to respond.

What's the secret of those incumbents that do survive—and sometimes even thrive? One aspect surely relates to the ability to recognize and overcome the typical pattern of response (or lack thereof) that characterizes companies in the incumbent's position. This most often requires acuity of foresight³ and a willingness to respond boldly before it's too late, which usually means acting before it is obvious you have to do so. As Reed Hastings, the CEO of Netflix, pointed out (right as his company was making the leap from DVDs to streaming), most successful organizations fail to look for new things their customers want because they're afraid to hurt their core businesses. Clayton Christensen called this phenomenon the innovator's dilemma. Hastings simply said, "Companies rarely die from moving too fast, and they frequently die from moving too slowly."⁴

We are all great strategists in hindsight. The question is what to do when you are in the middle of it all, under the real-world constraints and pressures of running a large, modern company. This article looks at the four stages of disruption from an incumbent's perspective, the barriers to overcome, and the choices and responses needed at each stage.

³ For McKinsey's analysis of the economic sources of digital disruption, see Angus Dawson, Martin Hirt, and Jay Scanlan, "The economic essentials of digital strategy," *McKinsey Quarterly*, March 2016, McKinsey.com.

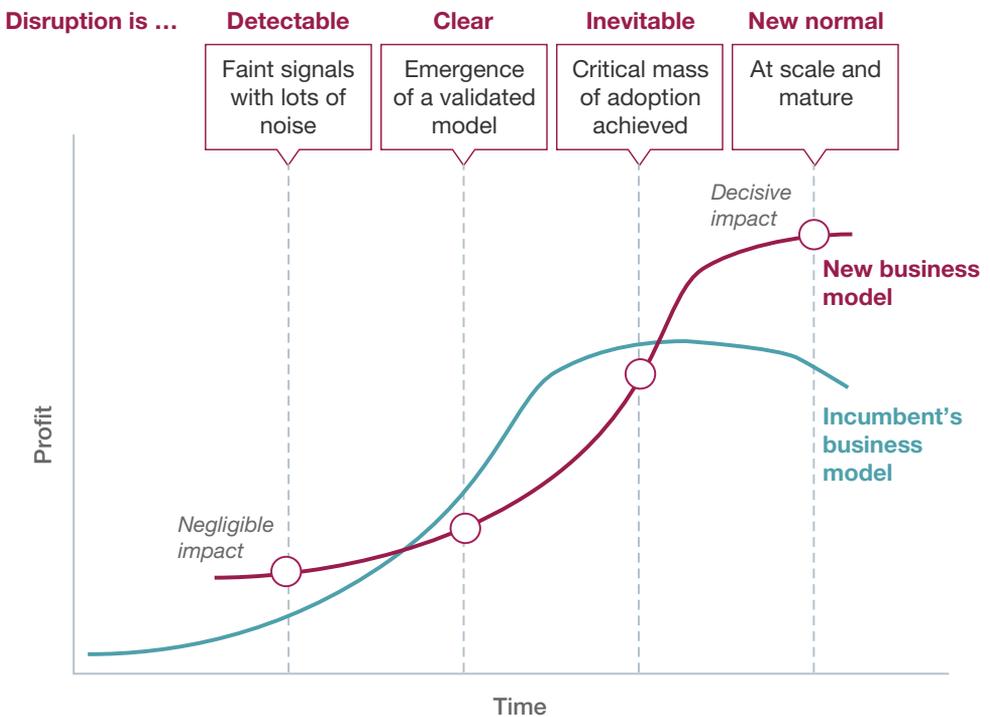
⁴ *Netflix Media Center*, "An explanation and some reflections," blog entry by Reed Hastings, September 18, 2011, media.netflix.com.

WHERE YOU ARE AND WHAT YOU NEED

It may help to view these stages on an S-curve (exhibit). At first, young companies struggle with uncertainty but are agile and willing to experiment. At this time, companies prize learning and optionality and work toward creating value based on the expectation of future earnings. The new model then needs to reach some critical mass to become a going concern. As they mature—that is, become incumbents—mind-sets and realities change. The established companies lock in routines and processes. They iron out and standardize variability amid growing organizational complexity. In the quest for efficiency, they weed out strategic options and reward executives for steady results. The measure of success is now delivery of consistent, growing cash flows in the here and now. The option-rich expectancy of future gain is replaced by the treadmill of continually escalating performance expectations.

Exhibit

Disruption introduces an incumbent to a new journey.



Incumbent's move	Acuity	Action	Acceleration	Adaptation
Common barrier	Myopia	Avoidance of pain	Inertia	Fit

In a disruption, the company heading toward the top of the old S-curve confronts a new business model at the bottom of a new S-curve. The circle of creative destruction is renewed, but this time the shoe is on the other foot. Two primary challenges emerge. The first is to recognize the new S-curve, which starts with a small slope, and often-unimpressive profitability, and at first does not demand attention. After all, most companies have shown they are very good at dealing with obvious emergencies, rapidly corralling resources and acting decisively. But they struggle to deal with the slow, quiet rise of an uncertain threat that does not announce itself. Second, the same factors that help companies operate strongly toward the top of an S-curve often hinder them at the bottom of a new one. Because different modes of operation are required, it's hard to do the right thing—even when you think you know what the right thing might be.

This simplified model, of a new S-curve crashing slow motion into an old one, gives us a way to look at the problem from the incumbent's perspective, and to appreciate the actual challenges each moment presents along the way. In the first stage, the new S-curve is not yet a curve at all. In the second, the new business model gets validated, but its impact is not forceful enough to fundamentally bend the performance trajectory of the incumbent. In the third stage, however, the new model gains a critical mass and its impact is clearly felt. In the fourth, the new model becomes the new normal as it reaches its own maturity.

Let's step through these stages in sequence and see what is going on.

STAGE ONE: SIGNALS AMIDST THE NOISE

In the late 1990s, PolyGram was one of the world's top record labels, with a roster boasting Bob Marley, U2, and top classical artists. But, in 1998, Cornelis Boonstra, CEO of PolyGram's Dutch parent, Koninklijke Philips, flew to New York, met with Goldman Sachs, and arranged to sell PolyGram to Seagram for \$10.6 billion. Why? Because Boonstra had come across research showing that consumers were using the new recordable CD-ROM technology (which Philips coinvented) largely for one purpose: to copy music. In hindsight, this is a good example of how, in the early stages of disruption, demand begins to “purify” and lose the distortions imposed on it by businesses.⁵

The MP3 format had barely been invented, Napster was a mere gleam in Sean Parker's eye, and PolyGram was riding at the top of its S-curve—but Boonstra

⁵ Dawson, Hirt, and Scanlan, “The economic essentials of digital strategy.”

detected the first signs of transformational change and decided to act swiftly and decisively. Within a decade, compact-disc and DVD sales in the United States dropped by more than 80 percent. Similarly, Telecom New Zealand foresaw the deteriorating economics of its Yellow Pages business and sold its directories business in 2007 for \$2.2 billion (a nine-time revenue multiple)⁶ while numerous other telecom companies held on until the businesses were nearly worthless.⁷

The newspaper industry had no shortage of similar signals. As early as 1964, media theorist Marshall McLuhan observed that the industry's reliance on classified ads and stock-market quotes made it vulnerable: "Should an alternative source of easy access to such diverse daily information be found, the press will fold." The rise of the Internet created just such a source, and start-ups such as eBay opened a new way for people to list goods for sale without the use of newspaper ads. Schibsted was one of the earliest media companies to both anticipate the threat and act on the opportunity. As early as 1999, the company became convinced that "The Internet is made for classifieds, and classifieds are made for the Internet."⁸

It's not surprising that most others publishers didn't react. At this early stage of disruption, incumbents feel barely any impact on their core businesses except in the distant periphery. In short, they don't "need" to act. It takes rare acuity to make a preemptive move, likely in the face of conflicting demands from stakeholders. What's more, it can be difficult to work out which trends to ignore and which to react to.

Gaining sharper insight, and escaping the myopia of this first stage, requires incumbents to challenge their own "story" and to disrupt long-standing (and sometimes implicit) beliefs about how to make money in a given industry. As our colleagues put it in a recent article, "These governing beliefs reflect widely shared notions about customer preferences, the role of technology, regulation, cost drivers, and the basis of competition and differentiation. They are often considered inviolable—until someone comes along to violate them."⁹

The process of reframing these governing beliefs involves identifying an industry's foremost notion about value creation and then turning it on its head to find new forms and mechanisms for creating value.

⁶ Annual report, Telecom New Zealand, 2006, investors.sparknz.co.nz.

⁷ "Telecom gets \$2 billion for Yellow Pages," *New Zealand Herald*, March 26, 2007, nzherald.co.nz.

⁸ Ken Doctor, "Schibsted's stunning classifieds and services business," Neiman Lab, February 14, 2012, neimanlab.org.

⁹ Marc de Jong and Menno van Dijk, "Disrupting beliefs: A new approach to business-model innovation," *McKinsey Quarterly*, July 2015, McKinsey.com.

STAGE TWO: CHANGE TAKES HOLD

The trend is now clear. The core technological and economic drivers have been validated. At this point, it's essential for established companies to commit to nurturing new initiatives so that they can establish footholds in the new sphere. More important, they need to ensure that new ventures have autonomy from the core business, even if the goals of the two operations conflict. The idea is to act before one has to.

But with disruption's impact still not big enough to dampen earnings momentum, motivation is often missing. Even as online classifieds for cars and real estate began to take off and Craigslist gained momentum, most newspaper publishers lacked a sense of urgency because their own market share remained largely unaffected. And it's not like the new players were making millions (yet). There was no performance envy.

But Schibsted did find the necessary motivation. "When the dot-com bubble burst, we continued to invest, in spite of the fact that we didn't know how we were going to make money online," recalls then-CEO Kjell Aamot. "We also allowed the new products to compete with the old products."¹⁰ Offering free online classifieds directly cannibalized its newspaper business, but Schibsted was willing to take the risk. The company didn't just act; it acted radically.

Now, let's openly acknowledge how hard it is for a company's leaders to commit to supporting experimental ventures when the business is climbing the S-curve. When Netflix disrupted itself in 2011 by shifting focus from DVDs to streaming, its share price dropped by 80 percent. Few boards and investors can handle that kind of pain when the near-term need is debatable. The vague longer-term threat just doesn't seem as dangerous as the immediate hardship. After all, incumbents have existing revenue streams to protect—start-ups only have upside to capture. Additionally, management teams are more comfortable developing strategies for businesses they know how to operate, and are naturally reluctant to enter a new game with rules they don't understand.

The upshot: most incumbents dabble, making small investments that won't flatten their current S-curve and guard against cannibalization. Usually, they focus too heavily on finding synergies (always looking for efficiency) rather than fostering radical experimentation. The illusion that this dabbling

¹⁰ See "CBS case competition 2009 case video. Schibsted classified media," February 25, 2009, youtube.com.

is getting you into the game is all too tempting to believe. Many newspapers built online add-ons to their classified businesses, but few were willing to risk cannibalizing the traditional revenue streams, which at this point were still far bigger and more profitable. And remember, at this time, Schibsted had not yet been rewarded for its early action: its results looked pretty similar to its peers.

In time, of course, bolder action becomes necessary, and executives must commit to nurturing potentially dilutive and small next-horizon businesses in a pipeline of initiatives. Managing such a portfolio requires high tolerance for ambiguity, and it requires executives to adapt to shifting conditions, both inside and outside the company, even as the aspiration to deliver favorable outcomes for shareholders remains constant.¹¹ The difficulty is the tendency to protect the core at the expense of the periphery. Not only are there strong, short-term financial incentives to protect the core, but it's also often painful to shift focus from core businesses in which one has, understandably enough, an emotional as well as a financial investment.

No small part of the challenge is to accept that the previous status quo is no longer the baseline. Grocery retailer Aldi has disrupted numerous incumbents globally with its low-price model. Aldi's future success was visible while Aldi was still nascent in the market. Yet many incumbent supermarkets chose to avoid the near-term pain of sharpening entry price points and improving their private-label brands. In hindsight, those moves would have been highly net-present-value positive with respect to avoided loss—as Aldi has continued its strong growth across three continents.

STAGE THREE: THE INEVITABLE TRANSFORMATION

By now, the future is pounding on the door. The new model has proved superior to the old, at least for some critical mass of adopters, and the industry is in motion toward it. At this stage of disruption, to accelerate its own transformation, the incumbent's challenge lies in aggressively shifting resources to the new self-competing ventures it nurtured in stage two. Think of it as treating new businesses like venture-capital investments that only pay off if they scale rapidly, while the old ones are subject to a private-equity-style workout.

Making this tough shift requires surmounting the inertia that can afflict companies even in the best of times.¹² In fact, our experience suggests

¹¹ Lowell L. Bryan, "Just-in-time strategy for a turbulent world," *McKinsey Quarterly*, June 2002, McKinsey.com.

¹² Stephen Hall, Dan Lovallo, and Reinier Musters, "How to put your money where your strategy is," *McKinsey Quarterly*, March 2012, McKinsey.com.

stage three is the hardest one for incumbents to navigate. As company performance starts to suffer, tightening up budgets, established companies naturally tend to cut back even further on peripheral activities while focusing on the core. The top decision makers, who usually come from the biggest business centers, resist having their still-profitable (though more sluggishly growing) domains starved of resources in favor of unproven upstarts. As a result, leadership often under invests in new initiatives, even as it imposes high performance hurdles on them. Legacy businesses continue to receive the lion's share of resources instead. By this time, the very forces causing pressure in the core make the business even less willing and able to address those forces. The reflex to conserve resources kicks in just when you most need to aggressively reallocate and invest.

Boards play a significant role in this as well. Far too often, boards are unwilling (or unable) to change their view of baseline performance, further exacerbating the problem. Often a board's (understandable) reaction to reduced performance is to push management even harder to achieve ambitious goals within the current model, ignoring the need for a more fundamental change. This only worsens problems in the future.

Further complicating matters, incumbents with initially strong positions can take false comfort at this stage, because the weaker players in the industry get hit hardest first. The narrative "it is not happening to us" is all too tempting to believe. The key is to monitor closely the underlying drivers, not just the hindsight of financial outcomes. As the tale goes, "I don't have to outrun the bear . . . I just have to outrun you." Except when it comes to disruption, that strategy merely buys time. If the bear keeps running, it will get to you, too.

The typical traditional newspaper operator, likewise, wasn't blind to a shift taking place, but it rarely managed to mount a response that was sufficiently aggressive. One notable exception was former digital laggard Axel Springer. The German media company was "a mere Internet midget," according to *Financial Times Deutschland*, until it leapt into action in 2005. It went on a shopping spree, acquiring 67 digital properties and launching 90 initiatives of its own by 2013.¹³ Like Schibsted, it saw the value pools moving to online classifieds and made the leap. The lesson is that incumbents can win even with a late start, provided that they throw themselves in wholly. Today, digital media contributes 70 percent of Axel Springer's earnings before interest, taxes, depreciation, and amortization. The core has become the periphery.

¹³ Raf Weverbergh, "Strategy: How Axel Springer calculated and then bought its way to European digital dominance," Whiteboard, whiteboardmag.com.

To generate the acceleration needed at this stage of the game, incumbents must embark on a courageous and unremitting reallocation of resources from the old to the new model—and show a willingness to run new businesses differently (and often separately) from the old ones. Perhaps nothing underlines this point more than Axel Springer’s 2013 divestment of some of its strongest legacy print-media products, which accounted for about 15 percent of its sales, to Germany’s number-three print-media player, Funke Mediengruppe. These products, such as the *Berliner Morgenpost*, owned by Axel Springer since 1959, were previously a core part of the corporate DNA and emblems of its journalistic culture. But no more. They realized that the future value of the business was not just about the continuation of today’s earnings but rather relied on the creation of a new economic engine.

When incumbents lack the in-house capability to build new businesses, they must look to acquire them instead. Here the challenge is to time acquisitions somewhere between where the business model is proved but valuations have yet to become too high—all while making sure the incumbent is a “natural best owner” of the new businesses it acquires. Examples of this approach in the financial sector include BBVA’s acquisition of Simple and Capital One’s acquisition of the design firm Adaptive Path.

STAGE FOUR: ADAPTING TO THE NEW NORMAL

In this late stage, the disruption has reached a point when companies have no choice but to accept reality: the industry has fundamentally changed. For incumbents, their cost base isn’t in line with the new (likely much shallower) profit pools, their earnings are caving in, and they find themselves poorly positioned to take a strong market position.

This is where print media is now. The classifieds’ “rivers of gold” have dried up, making survival the first priority, and sustainability and growth the second. In 2013, the CEO of Australia media company Fairfax Media told the International News Media Association World Congress, “We know that at some time in the future, we will be predominantly digital or digital-only in our metropolitan markets.”¹⁴ True, some legacy mastheads have created powerful online news properties with high traffic, but display advertising and paywalls alone are for the most part not enough to generate a thriving revenue line, and social aggregation sites are continuing to drive unbundling. Typical media firms have had to undertake the multiple painful waves of restructuring and consolidation that may be needed while they seed growth and look for ways to monetize their brands.

¹⁴ Clive Mathieson, “Fairfax chief Greg Hywood sizes up the end of papers,” *The Australian*, May 1, 2013, theaustralian.com.au.

For the incumbents who, like Axel Springer and Schibsted, have made the leap, the adaptation phase brings new challenges. Having become majority digital businesses, they're fully exposed to the volatility and pace that comes with the territory. That is, their adaptation response is less a one-time event than a process of continual self-disruption. Think of Facebook upending its business model to go "mobile first."¹⁵ You can't be satisfied with the first pivot—you have to be prepared to keep doing it.

In some cases, incumbents' capabilities are so highly tied to the old business model that rebirth through restructuring is unlikely to work, and an exit is the best way to preserve value. Eastman Kodak Company, for example, may have been better off leaving the photography business much faster, because its numerous strategies all failed to save it. When a business is built on a legacy technology that is categorically different from the new standard, even perfect foresight of the demise of film or CDs would not have solved the core problem that the digital replacement is fundamentally less profitable.

The simple fact is that new profit pools may not be as deep as prior ones (as many newspaper publishers have come to believe). The challenge is to adapt and structurally realign cost bases to the new reality of profit pools, and accept that the "new normal" likely includes far fewer "rivers of gold."

The reality is, most industries are still in stages one, two, and three. That's why the early experiences of media, music, and travel companies can prove so valuable. These first industries to transition to a digital reality highlight the social and human challenges that by their nature apply to companies in most every industry and geography. (Q)

¹⁵ Jessica Guynn, "Facebook soars as 'mobile first' company," *USA Today*, January 28, 2015, usatoday.com.

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The economic essentials of digital strategy

A supply and demand guide to digital disruption

by Angus Dawson, Martin Hirt, and Jay Scanlan

In July 2015, during the championship round of the World Surf League’s J-Bay Open, in South Africa, a great white shark attacked Australian surfing star Mick Fanning. Right before the attack, Fanning said later, he had the eerie feeling that “something was behind me.”¹ Then he turned and saw the fin.

Thankfully, Fanning was unharmed. But the incident reverberated in the surfing world, whose denizens face not only the danger of loss of limb or life from sharks—surfers account for nearly half of all shark victims—but also the uncomfortable, even terrifying feeling that can accompany unseen perils.

Just two years earlier, off the coast of Nazaré, Portugal, Brazilian surfer Carlos Burle rode what, unofficially, at least, ranks as the largest wave in history. He is a member of a small group of people who, backed by board shapers and other support personnel, tackle the planet’s biggest, most fearsome, and most impressive waves. Working in small teams, they are totally committed to riding them, testing the limits of human performance that extreme conditions offer. Instead of a threat of peril, they turn stormy seas into an opportunity for amazing human accomplishment.

¹ “Full story: Mick Fanning shark attack,” *Surfing Magazine*, July 19, 2015, surfingmagazine.com.

These days, something of a mix of the fear of sharks and the thrill of big-wave surfing pervades the executive suites we visit, when the conversation turns to the threats and opportunities arising from digitization. The digitization of processes and interfaces is itself a source of worry. But the feeling of not knowing when, or from which direction, an effective attack on a business might come creates a whole different level of concern. News-making digital attackers now successfully disrupt existing business models—often far beyond the attackers’ national boundaries:

- Simple (later bought by BBVA) took on big-cap banks without opening a single branch.
- A DIY investment tool from Acorns shook up the financial-advisory business.
- Snapchat got a jump on mainstream media by distributing content on a platform-as-a-service infrastructure.
- Web and mobile-based map applications broke GPS companies’ hold on the personal navigation market.

No wonder many business leaders live in a heightened state of alert. Thanks to outsourced cloud infrastructure, mix-and-match technology components, and a steady flood of venture money, start-ups and established attackers can bite before their victims even see the fin. At the same time, the opportunities presented by digital disruption excite and allure. Forward-leaning companies are immersing themselves deeply in the world of the attackers, seeking to harness new technologies, and rethinking their business models—the better to catch and ride a disruptive wave of their own. But they are increasingly concerned that dealing with the shark they can see is not enough—others may lurk below the surface.

DEEPER FORCES

Consider an insurance company in which the CEO and her top team have reconvened following a recent trip to Silicon Valley, where they went to observe the forces reshaping, and potentially upending, their business. The team has seen how technology companies are exploiting data, virtualizing infrastructure, reimagining customer experiences, and seemingly injecting social features into everything. Now it is buzzing with new insights, new possibilities, and new threats.

The team's members take stock of what they've seen and who might disrupt their business. They make a list including not only many insurance start-ups but also, ominously, tech giants such as Google and Uber—companies whose driverless cars, command of data, and reimaged transportation alternatives could change the fundamentals of insurance. Soon the team has charted who needs to be monitored, what partnerships need to be pursued, and which digital initiatives need to be launched.

Just as the team's members begin to feel satisfied with their efforts, the CEO brings the proceedings to a halt. "Hang on," she says. "Are we sure we really understand the nature of the disruption we face? What about the next 50 start-ups and the next wave of innovations? How can we monitor them all? Don't we need to focus more on the nature of the disruption we expect to occur in our industry rather than on who the disruptors are today? I'm pretty sure most of those on our list won't be around in a decade, yet by then we will have been fundamentally disrupted. And how do we get ahead of these trends so we can be the disruptors, too?"

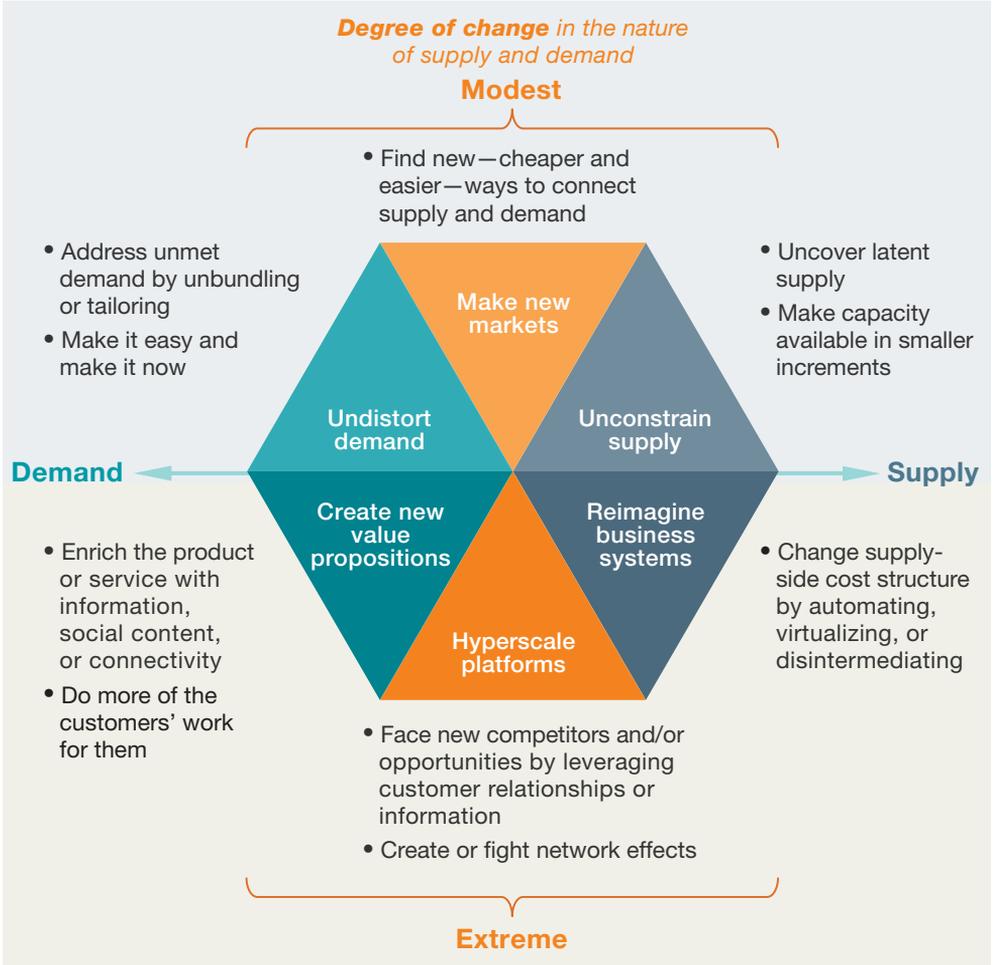
This discussion resembles many we hear from management teams thoughtful about digital disruption, which is pushing them to develop a view of the deeper forces behind it. An understanding of those forces, combined with solid analysis, can help explain not so much *which companies* will disrupt a business as *why*—the nature of the transformation and disruption they face rather than just the specific parties that might initiate them.

In helping executives to answer this question, we have—paradoxically, perhaps, since digital “makes everything new”—returned to the fundamentals of supply, demand, and market dynamics to clarify the sources of digital disruption and the conditions in which it occurs. We explore supply and demand across a continuum: the extent to which their underlying elements change. This approach helps reveal the two primary sources of digital transformation and disruption. The first is the making of new markets, where supply and demand change less. But in the second, the dynamics of hyperscaling platforms, the shifts are more profound (exhibit). Of course, these opportunities and threats aren't mutually exclusive; new entrants, disruptive attackers, and aggressive incumbents typically exploit digital dislocations in combination.

We have been working with executives to sort through their companies' situations in the digital space, separating realities from fads and identifying

Exhibit

Digitization can disrupt industries when it changes the nature of supply, demand, or both.



the threats and opportunities and the biggest digital priorities. Think of our approach as a barometer to provide an early measure of your exposure to a threat or to a window of opportunity—a way of revealing the mechanisms of digital disruption at their most fundamental. It's designed to enable leaders to structure and focus their discussions by peeling back hard-to-understand effects into a series of discrete drivers or indicators they can track and to help indicate the level of urgency they should feel about the opportunities and threats.

We've written this article from the perspective of large, established companies worried about being attacked. But those same companies can use this framework to spot opportunities to disrupt competitors—or themselves.

Strategy in the digital age is often asymmetrical, but it isn't just newcomers that can tilt the playing field to their advantage.

REALIGNING MARKETS

We usually start the discussion at the top of the framework. In the zone to the upper right, digital technology makes accessible, or “exposes,” sources of supply that were previously impossible (or at least uneconomic) to provide. In the zone to the upper left, digitization removes distortions in demand, giving customers more complete information and unbundling (or, in some cases, rebundling) aspects of products and services formerly combined (or kept separate) by necessity or convenience or to increase profits.

The newly exposed supply, combined with newly undistorted demand, gives new market makers an opportunity to connect consumers and customers by lowering transaction costs while reducing information asymmetry. Airbnb has not constructed new buildings; it has brought people's spare bedrooms into the market. In the process, it uncovered consumer demand—which, as it turns out, always existed—for more variety in accommodation choices, prices, and lengths of stay. Uber, similarly, hasn't placed orders for new cars; it has brought onto the roads (and repurposed) cars that were underutilized previously, while increasing the ease of getting a ride. In both cases, though little has changed in the underlying supply and demand forces, equity-market value has shifted massively: At the time of their 2015 financing rounds, Airbnb was reported to be worth about \$25 billion and Uber more than \$60 billion.

Airbnb and Uber may be headline-making examples, but established organizations are also unlocking markets by reducing transaction costs and connecting supply with demand. Major League Baseball has deployed the dynamic pricing of tickets to better reflect (and connect) supply and demand in the primary market for tickets to individual games. StubHub and SeatGeek do the same thing in the secondary market for tickets to baseball games and other events.

Let's take a closer look at how this occurs.

Unmet demand and escalating expectations

Today's consumers are widely celebrated for their newly empowered behaviors. By embracing technology and connectivity, they use apps and information to find exactly what they want, as well as where and when they want it—often for the lowest price available. As they do, they start to fulfill their own previously unmet needs and wants. Music lovers might always

have preferred to buy individual songs, but until the digital age they had to buy whole albums because that was the most valuable and cost-effective way for providers to distribute music. Now, of course, listeners pay Spotify a single subscription fee to listen to individual tracks to their hearts' content.

Similarly, with photos and images, consumers no longer have to get them developed and can instead process, print, and share their images instantly. They can book trips instantaneously online, thereby avoiding travel agents, and binge-watch television shows on Netflix or Amazon rather than wait a week for the next installment. In category after category, consumers are using digital technology to have their own way.

In each of these examples, that technology alters not only the products and services themselves but also the way customers prefer to use them. A “purification” of demand occurs as customers address their previously unmet needs and desires—and companies uncover underserved consumers. Customers don't have to buy the whole thing for the one bit they want or to cross-subsidize other customers who are less profitable to companies.

Skyrocketing customer expectations amplify the effect. Consumers have grown to expect best-in-class user experiences from all their online and mobile interactions, as well as many offline ones. Consumer experiences with any product or service—anywhere—now shape demand in the digital world. Customers no longer compare your offerings only with those of your direct rivals; their experiences with Apple or Amazon or ESPN are the new standard. These escalating expectations, which spill over from one product or service category to another, get paired with a related mind-set: amid a growing abundance of free offerings, customers are increasingly unwilling to pay, particularly for information-intensive propositions. (This dynamic is as visible in business-to-business markets as it is in consumer ones.) In short, people are growing accustomed to having their needs fulfilled at places of their own choosing, on their own schedules, and often gratis. Can't match that? There's a good chance another company will figure out how.

What, then, are the indicators of potential disruption in this upper-left zone, as demand becomes less distorted? Your business model may be vulnerable if any of these things are true:

- Your customers have to cross-subsidize other customers.
- Your customers have to buy the whole thing for the one bit they want.

- Your customers can't get what they want where and when they want it.
- Your customers get a user experience that doesn't match global best practice.

When these indicators are present, so are opportunities for digital transformation and disruption. The mechanisms include improved search and filter tools, streamlined and user-friendly order processes, smart recommendation engines, the custom bundling of products, digitally enhanced product offerings, and new business models that transfer economic value to consumers in exchange for a bigger piece of the remaining pie. (An example of the latter is TransferWise, a London-based unicorn using peer-to-peer technology to undercut the fees banks charge to exchange money from one currency into another.)

Exposing new supply

On the supply side, digitization allows new sources to enter product and labor markets in ways that were previously harder to make available. As “software eats the world”—even in industrial markets—companies can liberate supply anywhere underutilized assets exist. Airbnb unlocked the supply of lodging. P&G uses crowdsourcing to connect with formerly unreachable sources of innovation. Amazon Web Services provides on-the-fly scalable infrastructure that reduces the need for peak capacity resources. Number26, a digital bank, replaces human labor with digital processes. In these examples and others like them, new supply becomes accessible and gets utilized closer to its maximum rate.

What are the indicators of potential disruption in this upper-right zone as companies expose previously inaccessible sources of supply? You may be vulnerable if any of the following things are true:

- Customers use the product only partially.
- Production is inelastic to price.
- Supply is utilized in a variable or unpredictable way.
- Fixed or step costs are high.

These indicators let attackers disrupt by pooling redundant capacity virtually, by digitizing physical resources or labor, and by tapping into the sharing economy.

Making a market between them

Any time previously unused supply can be connected with latent demand, market makers have an opportunity to come in and make a match, cutting into the market share of incumbents—or taking them entirely out of the equation. In fact, without the market makers, unused supply and latent demand will stay outside of the market. Wikipedia famously unleashed latent supply that was willing and elastic, even if unorganized, and unbundled the product so that you no longer had to buy 24 volumes of an encyclopedia when all you were interested in was, say, the entry on poodles. Google’s AdWords lowers search costs for customers and companies by providing free search for information seekers and keyword targeting for paying advertisers. And iFixit makes providers’ costs more transparent by showing teardowns of popular electronics items.

To assess the vulnerability of a given market to new kinds of market makers, you must (among other things) analyze how difficult transactions are for customers. You may be vulnerable if you have any of these:

- high information asymmetries between customers and suppliers
- high search costs
- fees and layers from intermediaries
- long lead times to complete transactions

Attackers can address these indicators through the real-time and transparent exchange of information, disintermediation, and automated transaction processing, as well as new transparency through search and comparison tools, among other approaches.

EXTREME SHIFTS

The top half of our matrix portrays the market realignment that occurs as matchmakers connect sources of new supply with newly purified demand. The lower half of the matrix explains more extreme shifts—sometimes through new or significantly enhanced value propositions for customers, sometimes through reimaged business systems, and sometimes through hyperscale platforms at the center of entirely new value chains and ecosystems. Attacks may emerge from adjacent markets or from companies with business objectives completely different from your own, so that you become “collateral damage.” The result can be not only the destruction of sizable profit pools but also the emergence of new control points for value.

Established companies relying on existing barriers to entry—such as high physical-infrastructure costs or regulatory protection—will find themselves vulnerable. User demand will change regulations, companies will find collaborative uses for expensive infrastructure, or other mechanisms of disruption will come into play.

Companies must understand a number of radical underlying shifts in the forces of supply and demand specific to each industry or ecosystem. The power of branding, for example, is being eroded by the social validation of a new entrant or by consumer scorn for an incumbent. Physical assets can be virtualized, driving the marginal cost of production toward zero. And information is being embedded in products and services, so that they themselves can be redefined.

Taken as a whole, these forces blur the boundaries and definitions of industries and make more extreme outcomes a part of the strategic calculus.

New and enhanced value propositions

As we saw in the top half of our framework, purifying supply and demand means giving customers what they always wanted but in new, more efficient ways. This isn't where the disruptive sequence ends, however. First, as markets evolve, the customers' expectations escalate. Second, companies meet those heightened expectations with new value propositions that give people what they didn't realize they wanted, and do so in ways that defy conventional wisdom about how industries make money.

Few people, for example, could have explicitly wished to have the Internet in their pockets—until advanced smartphones presented that possibility. In similar ways, many digital companies have gone beyond improving existing offerings, to provide unprecedented functionality and experiences that customers soon wanted to have. Giving consumers the ability to choose their own songs and bundle their own music had the effect of undistorting demand; enabling people to share that music with everyone via social media was an enhanced proposition consumers never asked for but quickly grew to love once they had it.

Many of these new propositions, linking the digital and physical worlds, exploit ubiquitous connectivity and the abundance of data. In fact, many advances in B2B business models rely on things like remote monitoring and machine-to-machine communication to create new ways of delivering value. Philips gives consumers apps as a digital enrichment of its physical-world lighting solutions. Google's Nest improves home thermostats. FedEx

gives real-time insights on the progress of deliveries. In this lower-left zone, customers get entirely new value propositions that augment the ones they already had.

What are the indicators of potential disruption in this position on the matrix, as companies offer enhanced value propositions to deepen and advance their customers' expectations? You may be vulnerable if any of the following is true:

- Information or social media could greatly enrich your product or service.
- You offer a physical product, such as thermostats, that's not yet "connected."
- There's significant lag time between the point when customers purchase your product or service and when they receive it.
- The customer has to go and get the product—for instance, rental cars and groceries.

These factors indicate opportunities for improving the connectivity of physical devices, layering social media on top of products and services, and extending those products and services through digital features, digital or automated distribution approaches, and new delivery and distribution models.

Reimagined business systems

Delivering these new value propositions in turn requires rethinking, or reimagining, the business systems underlying them. Incumbents that have long focused on perfecting their industry value chains are often stunned to find new entrants introducing completely different ways to make money. Over the decades, for example, hard-drive makers have labored to develop ever more efficient ways to build and sell storage. Then Amazon (among others) came along and transformed storage from a product into a service, Dropbox upped the ante by offering free online storage, and suddenly an entire industry is on shaky ground, with its value structure in upheaval.

The forces present in this zone of the framework change how value chains work, enable step-change reductions in both fixed and variable costs, and help turn products into services. These approaches often transform the scalability of cost structures—driving marginal costs toward zero and, in economic terms, flattening the supply curve and shifting it downward.

Some incumbents have kept pace effectively. Liberty Mutual developed a self-service mobile app that speeds transactions for customers while

lowering its own service and support costs. The *New York Times* virtualized newspapers to monetize the demand curve for consumers, provide a compelling new user experience, and reduce distribution and production costs. And Walmart and Zara have digitally integrated supply chains that create cheaper but more effective operations.

Indicators of disruption in this zone include these:

- redundant value-chain activities, such as a high number of handovers or repetitive manual work
- well-entrenched physical distribution or retail networks
- overall industry margins that are higher than those of other industries

High margins invite entry by new participants, while value-chain redundancies set the stage for removing intermediaries and going direct to customers. Digital channels and virtualized services can substitute for or reshape physical and retail networks.

Hyperscaling platforms

Companies like Apple, Tencent, and Google are blurring traditional industry definitions by spanning product categories and customer segments. Owners of such hyperscale platforms enjoy massive operating leverage from process automation, algorithms, and network effects created by the interactions of hundreds of millions, billions, or more users, customers, and devices.² In specific product or service markets, platform owners often have goals that are distinct from those of traditional industry players.

Moreover, their operating leverage provides an opportunity to upsell and cross-sell products and services without human intervention, and that in turn provides considerable financial advantages. Amazon's objective in introducing the Kindle was primarily to sell books and Amazon Prime subscriptions, making it much more flexible in pricing than a rival like Sony, whose focus was e-reader revenues. When incumbents fail to plan for potential moves by players outside their own ecosystems, they open themselves up to the fate of camera makers, which became collateral damage in the smartphone revolution.

² Michael Chui and James Manyika, "Competition at the digital edge: 'Hyperscale' businesses," *McKinsey Quarterly*, March 2015, mckinsey.com.

Hyperscale platforms also create new barriers to entry, such as the information barrier created by GE Healthcare's platform, Centricity 360, which allows patients and third parties to collaborate in the cloud. Like Zipcar's auto-sharing service, these platforms harness first-mover and network effects. And by redefining standards, as John Deere has done with agricultural data, a platform forces the rest of an industry to integrate into a new ecosystem built around the platform itself.

What are the indicators that hyperscale platforms, and the dynamics they create, could bring disruption to your door? Look for these situations:

- Existing business models charge customers for information.
- No single, unified, and integrated set of tools governs interactions between users and suppliers in an industry.
- The potential for network effects is high.

These factors invite platform providers to lock in users and suppliers, in part by offering free access to information.

FINDING VULNERABILITIES AND OPPORTUNITIES IN YOUR BUSINESS

All of these forces and factors come together to provide a comprehensive road map for potential digital disruptions. Executives can use it to take into account everything at once—their own business, supply chain, subindustry, and broader industry, as well as the entire ecosystem and how it interacts with other ecosystems. They can then identify the full spectrum of opportunities and threats, both easily visible and more hidden.

By starting with the supply and demand fundamentals, the insurance executives mentioned earlier ended up with a more profound understanding of the nature and magnitude of the digital opportunities and threats that faced them. Since they had recognized some time ago that the cross-subsidies their business depended on would erode as aggregators made prices more and more transparent, they had invested in direct, lower-cost distribution. Beyond those initial moves, the lower half of the framework had them thinking more fundamentally about how car ownership, driving, and customer expectations for insurance would evolve, as well as the types of competitors that would be relevant.

It seems natural that customers will expect to buy insurance only for the precise use and location of a car and no longer be content with just a discount

for having it garaged. They'll expect a different rate depending on whether they're parking the car in a garage, in a secured parking station, or on a dimly lit street in an unsavory neighborhood. Rather than relying on crude demographics and a driver's history of accidents or offenses, companies will get instant feedback, through telematics, on the quality of driving.

In this world, which company has the best access to information about where a car is and how well it is driven, which could help underwrite insurance? An insurance company? A car company? Or Apple, which might know the driver's heart rate, how much sleep the driver had the previous night, and whether the driver is continually distracted by talking or texting while driving? If value accrues to superior information, car insurers will need to understand who, within and beyond the traditional insurance ecosystem, can gather and profit from the most relevant information. It's a point that can be generalized, of course. All companies, no matter in what industry, will need to look for threats—and opportunities—well beyond boundaries that once seemed secure.

Digital disruption can be a frightening game, especially when some of the players are as yet out of view. By subjecting the sources of disruption to systematic analysis solidly based on the fundamentals of supply and demand, executives can better understand the threats they confront in the digital space—and search more proactively for their own opportunities. 

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