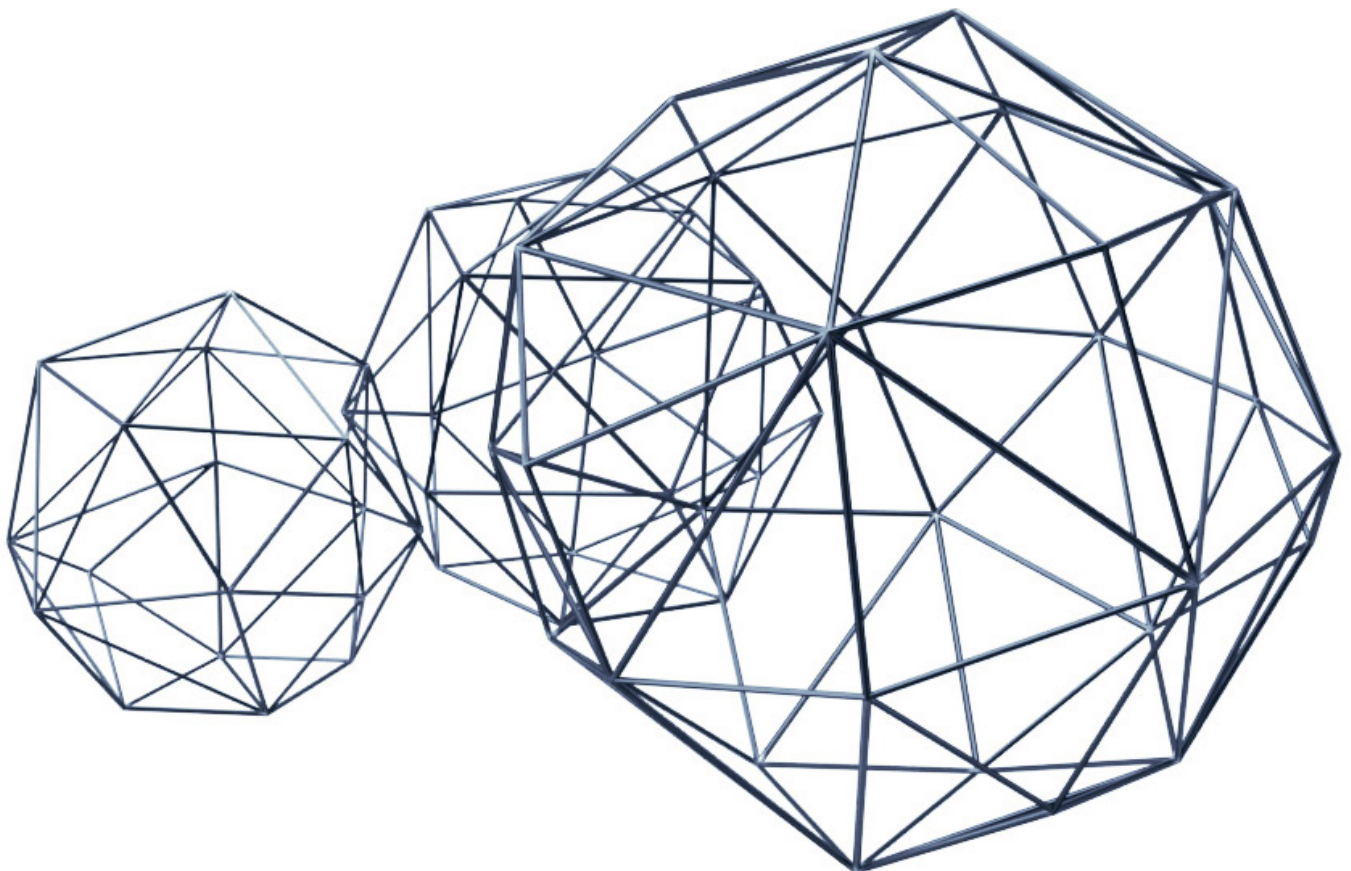# How do you measure success in digital? Five metrics for CEOs

As organizations launch more and more digital initiatives, CEOs must monitor whether they are delivering business results. These metrics are ones to watch.

by Matt Fitzpatrick and Kurt Strovink

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In a time of seemingly nonstop digital disruptions, which have only accelerated during the COVID-19 pandemic, the business imperative to embrace digital, data, and analytics is widely understood. The link to business value, however, is not. When we ask CEOs how their transition to digital is progressing, they often respond with a list of initiatives under way across the business—building a new tech platform, launching new products, or investing in infrastructure, to name a few. But when we ask them to quantify the impact on the bottom line, there's usually a long silence.

While business and technology leaders might report good progress on those initiatives to the CEO, simply getting projects off the drawing board doesn't guarantee that the organization is increasing revenue, profitability, market share, efficiency, or competitive moats as a result. Organizations pursuing digitization need a fully engaged CEO to take charge and drive actual performance gains from digital investment. That means prioritizing scalable initiatives capable of substantially improving the organization's performance; insisting on fast, minimally viable outcomes that can be improved over time; and, importantly, measuring and tracking the impact and value creation of all digital initiatives.

It's this last activity that this article will detail, along with ways CEOs can ensure that metrics are moving in the right direction.

At first glance, CEOs might think that monitoring and driving these metrics falls to functional leaders. There are, of course, some digital metrics that business leaders appropriately capture at the functional level. Tracking the percentage of sales that are digital, for example, often falls to the head of sales. Such metrics are important inputs for CEOs monitoring digital progress. However, the move to digital is a horizontal one, spanning the entire organization. CEOs are uniquely positioned to have full view—and influence—across business functions and regions to ensure that the organization as a whole is leveraging digital in a meaningful and profitable way. The cross-organizational metrics we describe offer CEOs a holistic view of strides made toward company-wide digital transformation.

Map before you measure

Prioritizing digital initiatives is an essential first step we've written about frequently, but it's worth repeating—and it falls directly on the CEO's shoulders. CEOs should ask themselves today, "Does my organization have a clear road map of digital *priorities*, rather than a basket of digital *projects*?" The purpose of this road map is not just to get from point A to point B. It's to force the organization to prioritize three to five bold initiatives, meaning digital moves that have potential to make a material difference in the organization's overall performance, and to focus resources accordingly. Perhaps the most common pitfall we see in failed digital strategies is the tendency for leaders to greenlight every project. However, doing so runs the risk that none will achieve enough scale to change behavior, mobilize the broader organization, or drive material impact.

Five metrics for the digital CEO

When implementation of the prioritized digital road map has begun, it is time to start measuring performance. Given the scale and complexity of digital transformation, measurement is critical to ensure that all the expense and effort of digital investment are paying off with improved performance. CEOs should monitor five broad markers to assess the organization's digital progress accurately (Exhibit 1).

1. Return on digital investments

Measuring the return on digital investment is both standard and essential. CEOs should look not only at the value being provided by individual priority digital initiatives but also at initiatives' collective support of strategic organizational goals. Keep in mind that there's no such thing as standing still; to make little or no investment relative to the competition is to fall further behind. Thus, digital investment is also about loss avoidance.

To maximize returns, we recommend transforming one business domain at a time and broadening from there for traction and coherence. "Domain" here refers to a critical process, customer or employee journey, or function. For example, a marketing domain for a consumer-goods company

Exhibit 1

CEOs should monitor five broad markers of digital progress.

1 Return on digital investments

2 Percentage of annual technology budget spent on bold digital initiatives

3 Time to market of digital apps

4 Percentage of leaders' incentives linked to digital

5 Top technical talent attracted, promoted, and retained

might include customer acquisition, pricing, cross-selling, and retention.

Transforming domains one by one allows organizations to leverage similar data sets, technology solutions, and team members for multiple use cases, which ultimately saves time and expense. A retailer, for example, could transform the in-store customer-experience domain by using the same geospatial and store data to optimize store footprints, prioritize capital expenditures, and personalize local assortment, allowing the company to leverage investments in data preparation (cleaning, linking, and so on). In addition, when use cases are linked, a broader cross-functional team can cohesively work together to deliver value across the domain, often far exceeding the value derived from single, disparate use cases across different areas of a business.

Another way to maximize return on investment is to direct enough resources toward promoting adoption of new digital tools. An interesting predictive insight is only as useful as the response it enables. For example, data identifying the customers most at risk of buying elsewhere can retain customers only if marketing or sales associates take effective actions to keep those customers happy. In that example, the team building digital or analytics solutions must not only build a tool to surface the insights for marketers but also redesign the marketers' workflow to enable action. Further, the organization must put in place

change-management initiatives that encourage adoption of the solutions. In one study, we found that organizations that were more successful in scaling analytics were four times more likely than other companies to spend half their analytics budgets on adoption and change management.

While the greatest returns for many companies come from directing digital investment toward growth initiatives, taking a bold approach to efficiency gains can also yield dramatic results (see sidebar, "Don't count out efficiency plays").

2. Percentage of annual technology budget spent on bold digital initiatives
Organizations that spend only a small proportion of their technology budgets on enabling the most strategic, bold digital initiatives are unlikely to maximize return on digital investment. The allocation of technology spend is a leading indicator CEOs can monitor to ensure that the organization is positioned to deliver digital-backed value.

Business technology is shifting away from a monolithic IT architecture and toward microservices, best-of-breed tools for specific use cases, and custom application development. These tools and approaches allow teams to rapidly create products and services that will drive maximum value. Digital natives have used them to infiltrate nearly every sector. Many legacy companies, however, are still

Don't count out efficiency plays

The potential of efficiency gains to improve return on investment is particularly attractive for organizations in industries such as manufacturing and mining, where productivity provides the greatest source of company value. Take the case of a mining company that sought to drive greater value from a mine where the quality of the ore was declining. By building algorithms based on three years of operating data, the mine's leaders identified areas where greater efficiency should be possible. With agile, cross-functional teams working in two-week sprints, the mine's engineers made a series of improvements, such as more finely grading the ore the mill processed and optimizing processing for each grade. The biggest gains came when the artificial intelligence (AI) models indicated they should increase the volume of ore processed beyond levels engineers had considered optimal. Immediately, production jumped by 5 percent. The team used the data it had been collecting to fine-tune the mill's control settings, eventually enabling the mill to process 10 percent more ore, a substantial improvement.

caught up in overly complex technology stacks that consume massive resources.

Consider the banking industry. Our research suggests that many banks spend about 92 percent of their digital budgets on infrastructure and maintenance, leaving only 8 percent for business-improvement initiatives that can fuel growth. That is not a sustainable paradigm for any business, given the current pace of innovation and disruption. Digital attackers and venture-capital-backed digital-banking ventures put most of their resources toward initiatives that move the needle on performance, such as entering new markets, improving customer experience, or boosting efficiency. And they usually aim those efforts at the most profitable segments and products in the traditional bank portfolio. We believe that banks should dedicate no less than 25 percent of their digital budgets to growth initiatives.

Of course, one reason incumbents spend so much of their digital budgets on infrastructure and maintenance is that they have legacy systems that have grown increasingly complex and outdated, with layers that might be 15 to 20 years old, riddled with code in outdated languages. Simply replacing these systems may not make sense, due to cost and potential disruption to business processes. Instead, companies should push for simplification and renewal across the systems that drive the greatest

business value. One large North American bank did this by essentially breaking its technology platform into a set of microservices and prioritizing the areas that would enable it to develop apps faster. The bank achieved a 30 percent decrease in the cost of making changes to core systems. The time to market for new digital products shrank from more than 12 months to just three or four months. Meanwhile, customer-satisfaction scores climbed from average to market leading, and revenues from digital offerings increased from less than 10 percent to more than 40 percent.

Traditional companies that take this approach may never have the same flexibility in their IT systems as digital attackers. Even so, by continually improving and building on their other strengths, they can be formidable competitors in the digital age.

3. Time required to build a digital application
Speed, specifically the quick translation of ideas into tools that can be used on the front line, is critical in a digital organization. In a fast-changing world, delay means yielding advantage to the competition or, worse, producing a tool that is obsolete before it's ever used. Despite this, many organizations have little idea of how they measure up in this area.

Our experience suggests timelines for getting applications to market and for new releases. For an analytics model (such as one that predicts customer churn or identifies microsegments to allow for more personalization), putting it to work in the field should take less than four months. For introduction of a software application tool (for example, a custom dashboard for frontline sales enablement), the timeline should be less than six months (Exhibit 2). We see many organizations still taking as long as two years or more to complete these builds, largely because they lack agile continuous-delivery processes and wrestle with overly burdensome documentation and nonfunctional requirements such as security and single-sign-on authentication.

Of course, rapid does not mean poorly functioning. While subject to improvement, products must provide an adequate customer experience from the start. That requires ensuring the organization makes DevOps and quality assurance part of the process. Once the product is in the field, the improvements should be timely and take no more than two weeks to deploy.

The responsibility for capturing and monitoring this metric lies with the business unit sponsoring a digital tool's development and the organization's technical leader. The CEO's role is to be aware of major deliverables and deadlines and, along with technical leadership, to look at all digital initiatives across the organization to identify areas where timelines consistently track longer. Overly long timelines could indicate that the organization is failing to institutionalize best practices, a necessary step toward positioning the organization for digital success in the long term.

It's important to note that we advise measuring cycle time to market, not cycle time to proof of concept. CEOs need to know how long it takes to build applications that actually get used. It's also useful to measure the percentage of applications built that actually make it to market. In many cases, companies create centers of excellence that produce numerous analytics models, but most never scale or see widespread use. We know of a financial-services firm that spent three years on a custom-built workflow application using a waterfall build methodology. The application was scheduled to be complete in two years, but by the time it was ready to go, it was already out of date and had to be scrapped.

Deployment speed is arguably the most important key performance indicator (KPI) in digital and analytics. It reflects the degree to which all elements of a technology organization are working together, and it determines how quickly data and modeling insights can reach the field to test, learn, and improve.

Exhibit 2

Organizations with world-class digital capabilities release and refresh digital applications much faster than competitors.

	Traditional	Leading	World-class	Why it matters
Time to market	**1–2** years	**2–6** months	**8–12** weeks	To compete for consumers on the basis of new tech functionality
Release frequency	**1–4** per year	**1–4** per month	**10–50** per day	To test and refine the customer experience

4. Percentage of business leaders' incentives linked to value-creating digital builds

A CEO needs to ensure that all organizational leaders are accountable for digital transformation and are driving tangible value. Aligning incentives is critical to achieving these ends. Importantly, this includes linking digital incentives among these leaders, including the organization's head of technology. Organizations building out their digital and analytics capabilities will often have multiple technology leaders—chief digital officer and chief information officer, to name two. But the ability to mobilize a technology organization to support business objectives should ultimately rest on the chief technology officer (CTO), who generally controls resourcing, production guidelines, information security, and technology-development protocols.

For some organizations, this may require a fundamental rethinking of the CTO role. Next-generation CTOs—for example, those in digitally native technology companies—oversee all product, from design to delivery; control all technology development; and are keenly focused on agile, rapid delivery. In many cases, their incentive compensation is linked to new application builds, cycle time, and business value generated, making crystal clear where their priorities should lie.

By contrast, CTOs in legacy companies are more apt to have taken on an "IT manager" role more focused on infrastructure, security, operations, and some CIO functions such as overseeing in-house application development. The challenge with this structure is that it fosters a mindset of risk avoidance that reduces accountability for driving business value and often dramatically extends timelines. In the age of technology disruption, the CEO needs to empower and incentivize a CTO mindset of builder and change agent, not merely head of IT. Realigning incentives and changing the mindset to one of value creation can have a massive impact on culture, pace, and business.

5. Top technical talent attracted, promoted, and retained

The ability to attract and retain exceptional tech talent is arguably the most crucial driver of long-term success in this increasingly digital age. Tech talent includes individuals with expertise in data engineering and analytics, design and user experience, and core technology.

The correct talent measures may change over time, depending on where your organization is in its digital journey. In the early stages, organizations will want to focus more on having enough senior architects and entrepreneurial builders. As digital scales, they should turn toward building out their benches of technical specialists and quality-assurance professionals. The CEO, as the only person with an overarching view of the entire organization, must understand the most critical needs and have a way of measuring progress to ensure an infusion of talent with a mindset of building and transforming, rather than just maintaining what is already there (Exhibit 3).

The goal is to achieve a balance of tech and general talent that is integrated throughout the organization. We have found that one of the most important measures is the percentage of tech talent that performs the work rather than those in a managerial role. This number typically moves from less than 20 percent at the start of a transformation to around 70 percent upon completion. Another key metric is the percentage of talent—including IT, project managers, and product managers—that is actually working in agile pods where true change occurs. Then there are the more traditional metrics, such as the percentage of PhDs on staff and the percentage who earned their degrees from institutions with top engineering programs or were recruited from top digital organizations.

To ensure retention, CEOs should look for satisfaction proxies—for example, the rate at which digital talent participates in technical communities or guilds or the rate at which they progress on their career paths within the company, compared with the general employee population.

Perhaps most important is talent integration. If your tech talent is isolated in a silo, rather than

Exhibit 3

Digital-talent metrics should focus on more than top-talent recruitment.

Example measures

Talent mix

% of tech talent in data-scientist role (early in digital journey)

% of tech talent in specialist roles, eg, cloud architect (later in journey)

% of "working" tech talent vs managerial talent

Talent quality

% of talent from tech companies or top engineering schools

% of talent holding PhDs

Talent retention

% of digital talent participating in technical communities or guilds

Time to promotion vs that of nontechnical talent

Talent integration

Average size of tech talent's networks vs those of nontech talent

Talent upskilling

% of employees completing digital trainings

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side by side with the business, it is extremely difficult to scale in digital. To monitor this, some organizations conduct network analyses, such as looking at the number of people to whom employees send email in a given period. If an employee consistently sends messages to only the same three or four close colleagues, there may be a problem.

Finally, since companies can never hire for all the digital talent needed, it's also important to measure how well an organization is upskilling existing talent. Ways to do this include looking at quality and accessibility of training and development programs and measuring usage levels.

When CEOs know the most important metrics to monitor, they can analyze the effectiveness of digital investments. Of course, functional leaders must track these measurements within their own purviews, but only the CEO has a cross-company perspective backed by the mandate to create holistic organizational value through digital. In partnership with functional leaders, CEOs and their senior executives can adjust talent acquisition, resource allocation, and company culture so as to ensure that the move to digital is profitable.

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