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Reaching your full cloud potential

Few companies are harnessing the full power of the cloud to catalyze innovation and digital transformation. Business leaders can change the game by paying careful attention to seven mission-critical factors.

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Though companies have been quietly embracing cloud computing for years, 2020 proved emphatically to boards and C-suites just how vital the cloud is to survival and the pursuit of new opportunities. When the COVID-19 pandemic shuttered economies, businesses quickly discovered that they needed the cloud's Web-based computing services to enable employees to work remotely, to shore up fractured supply chains, and to provide new digital services to consumers who couldn't leave their homes.

Contrary to its marketing buzz, the cloud is not a single technology or one-stop money-saving solution, but rather a collection of computing software and data services that can be accessed via the internet instead of residing on a desktop or internal servers. These services include applications as simple as email or as complex as customer relationship management software, and afford companies massive amounts of computing power needed to develop and test new proprietary applications. Because cloud computing platforms are "always on," they are ideal test beds for experimenting with and deploying new technology solutions, incorporating advanced analytics, automation, blockchain, quantum computing, augmented and virtual reality, and 3D printing. This makes the cloud a powerful strategic tool—not just a tactic.

Yet despite the acceleration of cloud adoption across the business landscape, most companies are barely scratching the surface of the cloud's vast potential. According to a [PwC survey](#) of C-level leaders in the United States, released in 2021, 53% of companies have yet to reap substantial value from their cloud investments.

This unrealized value is significant, but it only begins to speak to the cloud's untapped potential to propel digital business strategies. As 2020 showed, the cloud isn't a one-and-done IT project. Just as operations and strategy need to be agile and adaptive, so does your cloud blueprint. Staking out this new ground requires a well-defined, value-oriented strategy that links technology and business teams in a common pursuit of bold outcomes.

Take the case of one global payments company. With aging data center systems soaking up IT dollars, the board had assumed a cloud transformation would yield significant improvements and value-creation opportunities. Start-ups using cloud technologies were making inroads into the company's customer base with a range of digital offerings, so a move to the cloud made sense. But progress came either slowly or not at all. The company needed to reset.

We call this "the cloud hump"—a significant ramping up of cloud spending followed by a forced pause to figure out a new path forward. As one executive we interviewed cautioned us, if organizations think the cloud is mostly about moving data to slash IT costs, they have a problem. Rather, the executive says, the cloud should be about reconceiving the way business operates. Flash forward to today, and the CEO, the board, and the CIO of that global payments company are reviewing a combination of cloud technology and organizational and strategic changes that will attempt to better connect core IT operations to business change.

But making the pivot from tactical to strategic is not easy. Through our work with companies around the world, we identified seven mission-critical factors for closing the cloud potential gap. In what follows, we look at cases of companies, some of which stumbled in early efforts and others that have gained, or are starting to gain, solid footing on their way to seizing the cloud's potential.

1. Establish clear objectives for value creation

For many organizations, a cloud transformation creates the urge to "lift and shift" data and applications from legacy IT systems to cloud platforms merely for the cost-saving benefits. But this approach leaves an enormous amount of value on the table, and could even derail a cloud transformation.

In moving to the cloud, a midsized energy-services company initially sought to simplify its IT and make systems more efficient but soon homed in on a modest opportunity: automating the data-input process for creating customer invoices. Prior to making an investment in cloud technology, the company's invoices had been riddled with errors, causing dissatisfaction and churn. The problem resulted from suppliers manually inputting data. So, the IT team automated the input process with scanners and used machine learning and AI to flag and correct outliers. With errors greatly reduced, the company began thinking more boldly. One major element of the company's operating cost was expensive oil- and gas-pipeline routing, which involved deploying sizable groups of on-the-ground surveyors and engineers. Operations and IT teams decided to test whether drones might be used to gather data over a much bigger territory expanse, and whether analytics and historical data could be harnessed to optimize route choices. The experiment worked, and the savings flowed through to margins, improving the company's ability to match aggressive pricing by its rivals.

The lesson? Avoid the temptation to see the cloud only as a cost-saving, operational IT project—and view it as a catalyst for business value creation instead.

2. Reimagine your challenges with a cloud-centered mindset

Along those same lines, another pitfall is seeing business challenges through a “pre-cloud” lens.

Take the case of one European bank. In Europe, regulators had mandated that banks open their data interfaces (applications programming interfaces, or APIs) for greater transparency on system risks and to allow interoperability with central bank systems. The bank saw the cloud less as a cost-saving IT project than as a means of ensuring regulatory compliance. But the bank's IT team realized that the new cloud interfaces afforded a platform for fintech startups to sell the digital services they were developing: app-based banking, instant mortgage approval, mobile payments, and portfolio management tools. Because of the cloud, the bank was able to leverage its large customer base and market knowledge with the fast-moving fintech ecosystem.

Here was a classic case of defining the cloud opportunity too narrowly,

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where better regulatory compliance was an initial value-creation goal. Fortunately, the bank pivoted and, through a series of bold moves, demonstrated that by pushing ahead with cultural and structural adjustments, far greater success can indeed be within reach.

3. Let your people lead the cloud journey

For technology investments to pay off, humans and machines must work together in harmony. In our analysis of cloud migrations, we found that efforts often get derailed when leaders try to push employees to embrace what the cloud offers rather than including them in part of the broader strategic change.

The tale of one US hospital system is a case in point. The system's footprint for care delivery had widened beyond primary hospitals to a network of smaller hospitals, clinics, and physicians' sites. The IT team had pushed for a large investment in the cloud, reasoning it would be needed to manage and use data from multiple new sources. A year into the program, the CEO hit the brakes. Cost was one factor, but more troubling was pushback from medical teams and skepticism from employees about the need for the cloud in the first place. IT leaders had believed the very existence of a new platform would stimulate demand for new services.

Yet no one had stopped to ask how the organization's diverse employee base might deploy a bigger trove of data to manage care more effectively, or even do their jobs differently. Workers believed their former digital tools were good enough, and there was little point in disrupting daily work patterns. The

organization is now working through a cloud restart and has stretched the timeline for completion to 2030.

For clues to avoiding this situation, the hospital system might have looked to one European telecom services company, which started with a big problem. Delivery of IT tools to support the telco's core value chain (lead generation-to-sales) had broken down, with sluggish waterfall-production cycles taking months. Business units were forced to take evasive action and develop their own systems and vendor relationships (known as "shadow IT"). This led to duplicate costs, unmanaged data, and organizational complexity. Customers and technology staff alike were jumping ship.

The situation demanded swift action. The CEO reorganized IT, and, just as urgently, ordered the creation of a different organizational model for IT and business interactions. The solution called for a cloud platform that would enable a more centralized and agile IT organization to speed up and streamline the production process for the business. In the new blueprint, IT had responsibility for the design and architecture of apps, with decision rights over which cloud-based microservices would best support the creation of new tools. IT also retained control over data and data linkages critical to the design decisions. This new "IT factory" contracted out the commoditized app development to best-of-breed vendors. As the CIO explained it, the company sought to "in-source" the brains while outsourcing the building.

Cloud and data specialists from IT began working jointly with business managers to design new tools. The company started small, moving fast on prototypes for solutions that could rack up some impressive wins. One team member described the process as "humanizing." In the end, it forced people to interact, reforming what had been a disconnected, order-taking IT/business culture.

The upshot: the IT factory now delivers products in weeks or days rather than months. Customer satisfaction scores have risen, and IT employee retention is no longer an issue.

4. Seize the opportunity to solve your IT and data challenges

Executives want their IT systems to move at the speed of business—to be flexible, responsive, and adaptive as the business changes. But they often wrongly

assume the cloud is a quick fix for long-lingered problems with the company's IT systems and data.

Consider the cautionary tale of one European consumer-products company, which had lifted and shifted heaps of data pertaining to customers, distributors, the supply chain, and employees to a cloud vendor—only to discover that much of the data needed considerable cleaning and repurposing. According to the company's CIO, the data could not support any of the desired use cases afforded by the cloud platform, namely making the data available for sharing across the enterprise. Unfortunately, the company was forced to maintain its legacy systems while working on a new solution.

Other companies have managed to avoid this trap. At another consumer-products company, the finance department decided to create shareable data sets to improve the accounting and funding operations for several other functions, including sales. The system, though simple in design, proved to be a surprisingly good model for reforming data practices across the organization prior to the company's undertaking of a cloud migration.

As these stories illustrate, one key to success lies in reconciling underlying data and IT issues before investing heavily in cloud technologies.

5. Prioritize cybersecurity and compliance needs

Ensuring compliance with security and privacy regulations for data stored in the cloud raises myriad issues for companies. The volume of data at stake is massive, for one. Many companies have uploaded more data than they can reasonably use, adding security complexity and compliance costs. Access is another issue. The cloud enables and encourages more people to access data. And then there is the increasing number of devices supported by cloud platforms, which can become a security risk.

Despite this, we have seen many companies underinvest in cloud security services. When confronted with a cloud breach, organizations tend to bolster security in that area of weakness only. But that tack can be costly and generally offers a lower-level safeguard than if higher levels of security had been integrated with system architecture at the time of design.

One financial institution, after winning board approval for its cloud mi-

gration, was surprised when its security team came back the next year with a sizable change in its operating budget. The team needed to engage a security and compliance advisor after a breach as well as rethink security for a vendor interface that was riddled with entry points for hackers. The lesson: cloud data isn't a big trunk that you lock up once and for all. Cloud systems, like the business model itself, are finely tuned machines that need ongoing security and compliance.

Even when your security and compliance are in the hands of a trusted vendor, there's an important area of shared responsibility that needs to be kept top of mind. Vendors need to be in the loop when there are day-to-day changes regarding who has access to sensitive data, when information flows to business partners, and when tools for funneling new data to the enterprise are selected.

6. Reframe problems as opportunities for bold innovation

Companies want to see a meaningful and measurable return on their tech investments. As a result, many tend to focus on notching quick wins, such as digitizing a sales channel or making an internal process more efficient. But this only begins to get at the potential value at stake. In contrast, the most adept cloud operators constantly experiment and measure results in real time, move forward, and shift to other areas without regret, creating the agility that feeds innovation.

To get to this point, sometimes companies need a jolt. That's how the playbook changed at one European insurer. Its IT organization had embarked on a cloud transformation to give regulators and taxing authorities visibility into their data. The company notched a few IT improvements after the migration. However, it wasn't until the company's marketing executives felt competitive heat from an array of cloud-based startups with fully automated customer interactions like chatbots and one-swipe services that the CEO began pushing teams for cloud innovations. One that gained traction was a mobile app that scans for auto damage at accident sites, hails a tow truck and a ridesharing service, and at the back end uses AI to evaluate the claims and generate payouts.

CEO engagement and energy can push internal teams to innovate as well. At one mostly brick-and-mortar North American bank, a new cloud-based

business model presented an unexpected opportunity to create social good. The CEO had witnessed a core problem for unbanked homeless citizens—namely, you need an ID, an address, and assets to open a bank account. He had an idea to help: create a cloud-hosted system that uses retinal scans for identification. That, paired with a mobile-device banking app that links to the social services agencies offering income support to the unhoused, could help this vulnerable population access critical banking services.

Rather than getting wads of currency after cashing a government check, homeless individuals could deposit the income in a digital bank account, which they could use to buy necessities, including transportation and housing.

Then the CEO got another idea: create a fully cloud-centered bank to serve a younger group of customers. That was important because the bank's existing customers were older and less likely to be comfortable with digital banking. The CEO decided to separate the digital bank from the existing institution, calculating that it would allow for more experimentation with new services and take full advantage of the new operating model. So far, the strategy has paid off, as the digital outfit has been more agile and innovative, freer to experiment and test new products and services.

In another example, the move from a transactional mindset at the core to a problem-solving culture in the field helped remake key aspects of one mining company's operations. After migrating its accounting and sales data to the cloud, the company began using the platform to collect comprehensive operations data from its many production sites. A finance manager, in collaboration with a mine-production team, realized that the new data could be the basis for a real-time production dashboard for managers and operations planners. The more detailed information, combined with AI, exposed hidden patterns in productivity, which managers then used to shift mining teams and equipment to sites with greater potential. The dashboard-enabled operations boosted output considerably, and costs remained flat. Inspired by the successful cloud effort, mine safety managers began using sensors to monitor mine conditions with pattern-recognition tools to flag sites where risks were developing. Doing so allowed them to take preventative action, ensuring the safety of miners and lowering insurance costs.

7. Celebrate your wins, but don't declare victory too early

Most executives understand the transformative power of cloud technologies, but many focus their attention and capital spending in the first year of the launch, assuming their work is all but done. In reality, the cloud requires continuous updating, refining, and revisiting agreed-upon paths to determine if better options are available.

We've seen cases where the board approves a cloud investment in year one with the assumption that the IT leaders won't come back with another funding request for two or three years. Meanwhile, the cloud has proven critical to that company's operating model, with demands arising throughout the value chain.

At one company, the realization that victory wasn't assured meant an urgent call for investment in hiring data and architecture specialists and business managers with digital expertise. Then came IT, which in year one got what it needed for data storage but soon realized it needed platform-as-a-service capabilities to speed up business software delivery. The company's expansion of cloud businesses also required more funding for security and compliance.

The key here is that the cloud is not a one-off technology project; it requires ongoing evaluation of additional investment requirements, attention, and reassessment of strategies and tactics.

The tipping point of opportunity

Most business leaders speak optimistically about the cloud, and for good reason. The cloud puts technologies like AI and advanced analytics into the hands of innovators across the company. The ultimate prize is a new terrain of business opportunities. But as we've seen in helping companies manage their cloud migrations, the cloud can create pitfalls and prevent companies from realizing the cloud's full potential. To that end, we've identified the following imperatives for companies that will help them grow and remain competitive throughout their cloud journey.

Share and be open. Cross-functional collaboration on cloud projects works best when teams are equipped with the technology and expertise to gather, deliver, and analyze data in ways that unlock the best insights to innovate.

Outline clear guidelines on how IT and business teams should work together, and give them the freedom and tools to collaborate with one another.

Involve your people early on. Before launching an enterprise-wide cloud-migration effort, take a pulse check with your people. How will they use cloud tools? For what purposes? How will cloud technologies make employees' jobs easier or more difficult? How will teams use cloud-based technologies to innovate and create value?

Think beyond upskilling. Talent development must go beyond off-the-shelf digital training modules. Companies should consider customized training programs and use AI, analytics, and machine learning to tailor training to the jobs of tomorrow.

Rethink your data strategy. An important driver of value in the cloud are ecosystem partnerships. If cloud platforms are closed off, a network of value creators will never grow. That's why having a strategy for how data will be collected, valued, secured, and shared with ecosystem partners to create value and innovate is critical.

Above all, it's important for the CEO and board to find ways to link business strategy with cloud investment. The cloud is not just an IT initiative; it's a platform for growth and innovation. 

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