IBM **Center for Applied Insights**

Under cloud cover:

How leaders are accelerating competitive differentiation

One out of five organizations has discovered a secret source of competitive differentiation. It allows them to serve customers in new ways and reimagine their business models. It can help surface valuable insights from their data and transform how they make decisions. It enables them to tap expertise from across their entire ecosystem.

And one more thing: It helps these Pacesetters grow revenue and gross profit faster than other organizations. What's their secret? It's cloud computing – their engine for growth.

About the study

To get a global snapshot of how organizations are using cloud computing, the IBM Center for Applied Insights collaborated with Oxford Economics to survey 802 cloud decision makers and users. Forty percent are C-level executives (28 percent CIOs and 12 percent other C-suite roles). Evenly split between business and IT functions, participants span 24 industries and 13 countries, including both growth and mature markets.[1] They work in enterprises of varying sizes – 21 percent with 10,000 or more employees and, at the other end of the spectrum, 26 percent with less than 1,000 employees.

With so much of the cloud conversation revolving around technical topics, like "stack wars," APIs and DevOps, some people might think cloud computing is just an IT obsession. But business leaders disagree.

According to our global study of more than 800 cloud decision makers and users, business leaders of all stripes – Finance, Sales & Marketing, Product Development and more – are becoming increasingly focused on the business value cloud provides. Over the next three years, cloud's strategic importance to business users is expected to double from 34 percent to 72 percent, even surpassing their IT counterparts at 58 percent.

They're also backing up their words with action. The majority of our respondents said business leaders are actively involved in managing their organization's cloud initiatives.

So what's behind this growing strategic interest in cloud?

Simply put, it's an evolution. Cloud computing is following the same pattern of other technologies that have shaped business and society. Take electricity, for example. Even after the first public power supply lit the streets, it took time for businesses to learn how to really capitalize on this new technology. In those early days, people were enthralled by artificial lighting – one of the earliest applications of electricity. Very few could fathom the innumerable product innovations, business models and industries that would ultimately be built upon this technology.

Business leaders are working through this transition with cloud right now. For some time, many have benefited from early applications of cloud computing and the basic efficiency gained from IT delivered as a service. But now cloud is sparking imaginations. And more and more business leaders are recognizing its profound implications for how enterprises can make money, differentiate and compete.

What can we learn from those at the forefront of this movement – the organizations that told us they're gaining competitive advantage through cloud?

First, it's worth understanding what these Pacesetters are actually *doing* with cloud. Bottom line, they're differentiating through strategic reinvention, better decisions and deeper collaboration. Cloud sits at the center of their transformation tool set – mobile, social, analytics and big data. There are also important clues in how their cloud strategies differ in terms of scope, platform decisions and delivery models. But the chief takeaway is this: Cloud is not just about cutting costs and driving efficiency; cloud fuels growth.

Competitive advantage through cloud

To learn more about business outcomes organizations are realizing through cloud – and how they're achieving those results – we surveyed more than 800 cloud decision makers and users. We grouped these organizations based on their level of cloud adoption and whether they're reporting competitive advantage from cloud computing (see Figure 1):

- **Pacesetters** have deployed cloud on a broad scale and are gaining competitive advantage over their rivals through cloud.
- **Challengers** are on par with Pacesetters in achieving greater efficiency through cloud, but still lag on differentiation and market responsiveness.
- **Chasers** are more cautious about cloud. They're in early stages of adoption and are not yet using cloud to drive competitive advantage.

To more objectively validate the competitive advantage reported by these organizations, we compared publicly available financial performance data across the three groups to identify possible correlations. Consistent with their claims, Pacesetters are outperforming – delivering, on average, higher revenue and gross profit growth than their peers.

Profiling the Pacesetters

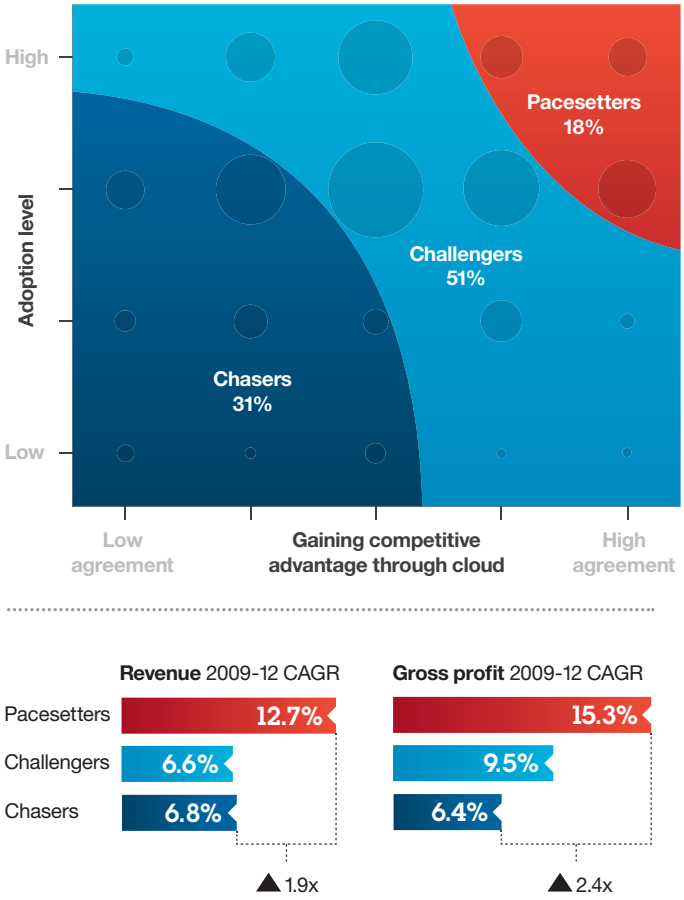

Figure 1. Competitive advantages from cloud computing help leading organizations deliver stand-out financial performance.

What Pacesetters do to stand out

More than 40 percent of our respondents say they've realized major improvements in organizational efficiency through cloud. That's not too surprising given the much-touted benefits of pay-as-you-go computing. Interestingly though, even in the efficiency race, Pacesetters are slightly ahead of Challengers.

However, where Pacesetters really pull away from the pack is on improved market responsiveness – our research indicates they're ahead of Challengers by about 40 percent and Chasers by nearly 80 percent. Cloud helps them more rapidly respond to changing customer needs and market shifts, expand into new markets and target new segments.

To outperform, Pacesetters are building competitive advantage in three primary ways – through strategic reinvention, better decisions and deeper collaboration (see Figure 2).

Competitive advantage through cloud
(% achieving through cloud)

		Chasers	Challengers	Pacesetters	% Pacesetters surpass Chasers
Strategic reinvention	Reinvent customer relationships	25%	46%	59%	+136%
	Innovate products/services rapidly	30%	51%	52%	+73%
	Build new/improved business models	30%	44%	51%	+70%
Better decisions	Use analytics extensively to derive insights from big data	20%	44%	54%	+170%
	Share data seamlessly across applications	27%	51%	59%	+119%
	Make data-driven, evidence-based decisions	30%	62%	65%	+117%
Deeper collaboration	Make it easier to locate and leverage knowledge of experts anywhere in ecosystem	34%	51%	61%	+79%
	Improve integration between development and operations	34%	49%	59%	+74%
	Collaborate across organization and ecosystem	34%	45%	58%	+71%

Figure 2. Cloud helps fuel competitive advantage for Pacesetters through strategic reinvention, better decisions and deeper collaboration.

Strategic reinvention

For leading organizations, cloud provides an escape route from the status quo, as shown in Figure 2. Most often, it's helping them better engage their customers. Compared to Chasers, Pacesetters are more than twice as likely to use cloud to reinvent customer relationships. Cloud enables them to listen more broadly and dig through big data to learn customer preferences and deliver more relevant offers. Through cloud, they can also integrate processes and systems to serve customers better or engage them in new mobile or social ways that weren't feasible before.

The majority of Pacesetters (52 percent) – and even Challengers (51 percent) – are using cloud to innovate their products and services more rapidly. Not only can cloud accelerate the innovation *process* through stronger collaboration and improved workflow; it can also enable new functions or features in the *product* itself. For example, take a navigation system in a car, portable GPS device or smart phone. Connected to cloud, that product can offer even greater functionality. It can intelligently reroute drivers around road construction and traffic jams, courtesy of cloud-based analytics that mine crowd-sourced traffic data in real time.

Most remarkably, more than half of the Pacesetters say they've revamped their business model through cloud. With access to more data and expertise – and fewer capacity constraints – organizations can more easily create new revenue streams, new value propositions and even brand new markets.

Through cloud, Pacesetters are 136% more likely than Chasers to reinvent customer relationships.

TVs in tune with you

Connected devices like smart TVs are changing the business models of many consumer electronics makers. Direct consumer interaction over the lifetime of the product opens a host of new opportunities. But to capitalize on them, TP Vision – a joint venture of Hong Kong-based TPV Technology and Royal Philips Electronics – needed cloud.[2]

By placing services and application intelligence in the cloud rather than the device, TP Vision can constantly analyze and fine-tune the customer experience – without continually updating the TV set. Cloud also provides elasticity to expand as the manufacturer grows its customer base.[3]

Perhaps most valuable is the data inside the cloud. Usage insights help TP Vision deliver a more personalized entertainment experience, such as recommending TV shows based on past selections. Service providers, chief marketing officers and advertisers too can deliver more relevant entertainment options and targeted advertisements. In aggregate, this data creates a new revenue stream for the manufacturer – providing analysis of customer usage data to third-party application developers and service providers.

And this is really just the start. Smart TVs are emerging as a platform for a world of new interactive entertainment services. Think of it like the application platforms on mobile devices. Cloud has not only helped transform TP Vision's product and business model; it has provided a channel for ongoing business innovation.[4]

Pennies, patterns and more precise merchandising

For Target Corporation, the second largest general merchandise retailer in the United States, a price increase of just a few cents can have significant margin impact. However, with a brand promise of "Expect more, Pay less," the retailer cannot afford to undermine customer confidence in its prices. That's where cloud comes in. With enough science – delivered via cloud-based analytical services – Target has simultaneously improved margins and price perception.[6]

Deeper analysis enables Target to make better merchandising and marketing decisions. In particular, the retailer can now see patterns – guest segments with very different wants and needs, such as health and wellness or feeding their families or satisfying high-end, gourmet tastes.[7]

Cloud provides the analytical capacity Target needs to tailor assortments, promotions and pricing for particular guest segments – rather than serving everyone en masse based on historical averages. And by using dashboards and insights embedded directly within planning workflows, the retailer and its trading partners can more quickly identify new opportunities to reach those segments. This infusion of insights has altered how merchandising decisions are made at Target, helping boost both sales and gross margin results.[8]

Better decisions

To outmaneuver rivals, Pacesetters search for insights competitors don't see. Compared to Chasers, they're nearly three times more likely to use cloud-based analytics to dig for insights buried inside big data. With cloud, they can feed their analytics more raw data – and provide computing capacity for more expansive analysis.

Pacesetters are 170% more likely than Chasers to use cloud-based analytics to derive insights.

Leading organizations also recognize the power of connecting their data, the information scattered across segregated servers and employee hard drives. Compared to Chasers, they're twice as likely to use cloud to share data across applications. Cloud helps knit data together to spur fresh insight and enable more-informed decisions. For example, IBM uses a business analytics cloud called Blue Insight that taps into hundreds of information sources – more than a petabyte of data that previously sat in silos across the sales, marketing and development communities. Blue Insight provides analytics services to more than 500 applications supporting more than 200,000 employees.[5]

However, Pacesetters know cloud is not just about generating insights; it's also about making insights accessible when and where needed. Two-thirds say cloud plays a pivotal role in helping them make data-driven decisions. It enables enterprises to provide relevant insight at key decision points – guiding processes and decision makers with automated analysis delivered in real time.

Deeper collaboration

In addition to integrating their data, Pacesetters are using cloud to connect people. Nearly 60 percent say they're driving higher levels of collaboration through cloud. Even more use cloud to find and tap expertise anywhere in their ecosystem.

This allows them to benefit from both scale and specialization. Cloud can bring together masses of collaborators, spreading knowledge faster and drawing on the collective wisdom of the crowd. And it helps Pacesetters capitalize on "long-tail" expertise. With cloud-sized reach, they can tap remote niches of specialized knowledge or skill that were previously impractical, if not impossible, to engage.

Leading organizations are also taking advantage of cloud-based collaboration to help eliminate silos – especially within their IT organization. They're 74 percent more likely than Chasers to use cloud to improve integration between development and operations. By breaking down these barriers, Pacesetters can implement new capabilities faster.

Compared to Chasers, Pacesetters are 79% more likely to use cloud to locate and leverage expert knowledge across their ecosystem.

Cloud with a life-saving mission

Colleagues in Care is a medical volunteer network with a story of big need, willing experts and life-saving collaboration through cloud. Even before an earthquake shook Haiti in 2010, the country suffered from limited healthcare resources. According to the World Health Organization, Haiti had just one nurse and three doctors for every 10,000 people.[9]

The quake made a difficult situation devastatingly worse, killing many local caregivers and severely damaging the country's healthcare infrastructure. Thousands of volunteers from other countries offered services, but there was no practical means of matching their skills with patient needs. And healthcare providers in Haiti had no easy way to share what they were learning about specific cases or situational challenges.

In response, Colleagues in Care implemented a cloud-based collaboration platform with worldwide reach. The Global Health Collaboration Network connects local professionals with top medical minds from around the world to exchange ideas and help create best practice protocols adapted for the realities confronting Haiti. Through cloud, Colleagues in Care has expanded both the reach and the quality of healthcare – empowering Haitians to save lives, treat disease and alleviate suffering.[10]

Cloud is a key part of the use, integration and application of these strategic technologies

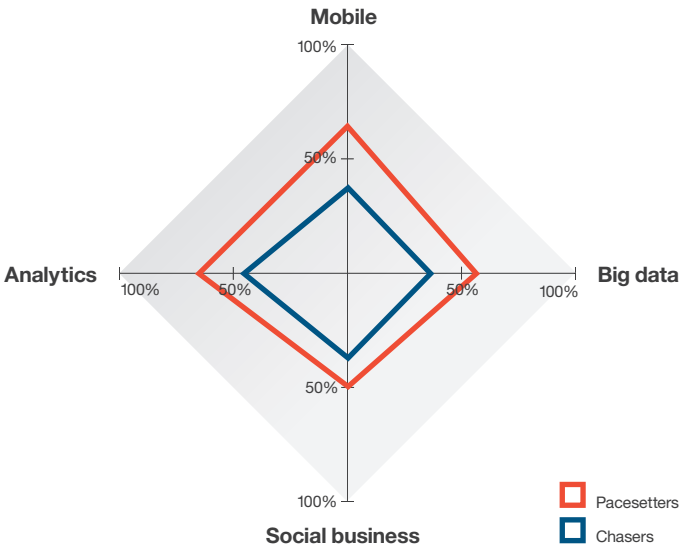

Figure 3. Cloud is powering and integrating Pacesetters' transformation tool set.

Cloud at the center

Mobile, analytics and social business play critical roles in helping enterprises differentiate and gain competitive advantage. But often, cloud sits at the center of these initiatives. This is particularly true among Pacesetters.

For the majority of these leading organizations, cloud is integral to their mobile, social and analytics initiatives – and the big data management challenge that often comes with them. Cloud helps power their entire suite of game-changing technologies (see Figure 3).

Enterprises can aim higher when these deployments are riding on the cloud. Mobile, analytics and social implementations can be bigger, bolder and drive greater impact when backed by scalable infrastructure. In addition to scale, cloud can provide integration, gluing the individual technologies into more cohesive solutions.

Conquering cloud complexity

Pacesetters have reported impressive competitive advantages from cloud computing, but that does not imply the cloud journey has been easy. Forty-four percent of our respondents believe cloud introduces greater complexity into their organization. That sentiment is even stronger (51 percent) among Pacesetters.

So why isn't this complexity hampering their achievements? Our findings suggest leading organizations have found ways to conquer it (see Figure 4).

To simplify integration and connect broad ecosystems, they favor open-source cloud platforms. To capitalize on the strengths of both public and private cloud, they're more likely than peers to use hybrid cloud infrastructures. And to cope with constant technology change, Pacesetters experiment. Challengers, too, have recognized the importance of having the executive green light for cloud experimentation.

However, where the cloud approach of leading organizations differs most is in their strategy. Just as Pacesetters are championing cloud's shift from efficiency play to growth play, they're also leading the charge toward more comprehensive cloud strategies. These organizations are nearly four times as likely as Chasers to have enterprise-wide cloud strategies. Given the visionary nature of their cloud initiatives – and how much of the organization may be impacted – they see the need for a tangible master plan.

This approach, of course, requires significant collaboration between IT and lines-of-business (LOBs) at both staff and executive levels. And while the majority of our respondents – regardless of group – say IT and LOB should coordinate and partner on cloud deployments, leading organizations appear more effective at this. Two-thirds of Pacesetters say cloud is actually *strengthening* the relationship between IT and LOB, compared to just 34 percent of Chasers.

Differences in cloud management approach and deployment

	Chasers	Challengers	Pacesetters	% Pacesetters surpass Chasers
Has enterprise-wide cloud strategy	10%	34%	37%	+270%
Prioritizes open-source cloud platforms	21%	40%	58%	+176%
Uses hybrid cloud	24%	34%	44%	+83%
Encourages cloud experimentation through executive support	38%	57%	53%	+39%

Figure 4. To combat complexity, leading organizations employ a different management approach.

Foreshadowing: Where leaders are taking their clouds

Pacesetters say the top three most valuable capabilities in their "cloud of the future" would be:

- **Product/service building blocks:** Easy-to-assemble industry or business service components they can use to construct new products or services.
- **(Even bigger) big data:** Access to – and management of – vast data stores they can't get to now. They're not alone here; this is actually a top pick across all three groups.
- **Industry-specific platforms:** Cloud platforms with applications and computing environments designed specifically for their industry.

Improving your competitive position

As Pacesetters attest, cloud can offer enterprises more than just efficiency. But competitive advantage is constantly shifting. To help maintain a lead, think about your cloud initiatives from three angles:

Business objectives: Prioritize competitive differentiators to tackle via cloud

Given your competitive positioning, consider where cloud could drive greater differentiation.

- What new business strategies could cloud enable?
- Where could cloud accelerate product or service innovation?
- How can cloud help you engage customers differently?
- Which strategic or operational decisions would benefit from big data or compute-intensive analytics that are more feasibly delivered through cloud?
- Where could broader or better connected networks of expertise improve business performance?

Cloud strategy: Drive enterprise responsiveness through holistic strategy

The broader and more strategic your cloud initiatives are, the more critical it becomes to have an *enterprise-wide* strategy.

- How does your cloud strategy enable mobile, social, analytics and big data initiatives?
- Are IT and LOB collaborating effectively to manage cloud services and make investment decisions?
- Is senior management on board? What kind of governance structure do you have in place?
- Which cloud deployment aspects should be more tightly controlled? Are teams given sufficient flexibility?

Cloud technology: Align platforms to business objectives

With prioritized differentiators and an enterprise cloud strategy, technology decisions can be better aligned with business needs.

- Which initiatives should be on open-source platforms to gain speed, scale and access?
- Do you have the right mix of public and private cloud elements to meet your specific requirements? Or will you need the flexibility of integrated, hybrid cloud architectures to bring disparate elements together?
- Where might an industry-specific solution supply tailored functionality or fill an expertise gap?

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The IBM Center for Applied Insights introduces new ways of thinking, working and leading. Through evidence-based research, the Center arms leaders with pragmatic guidance and the case for change.

Notes and references

[1] The growth markets studied include Australia, Brazil, China, India, Poland, Singapore and South Africa. Mature market countries studied include Canada, France, Germany, Japan, the United Kingdom and the United States. To smooth possible geographic distortions, responses were weighted based on IBM assessment of each country's total IT spend.

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[7] Ibid.

[8] Ibid; "Target Selects DemandTec for Collaborative Shopper Insights and Extends Commitment to Other nextGEN Solutions," IBM DemandTec press release. June 21, 2010. http://www.demandtec.com/mydemandtec/press-releases/-/asset_publisher/2qEJ/content/target-selects-demandtec-for-collaborative-shopper-insights-and-extends-commitment-to-other-nextgen-solutions.

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