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# Growing up hybrid

*Accelerating digital transformation*



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Hybrid cloud is the de facto state of IT.

Two-thirds of organizations that blend traditional and cloud infrastructures are already gaining advantage from their hybrid environments. However, leaders among them use hybrid cloud to power their digital transformation, going beyond cost reduction and productivity gains.

What's more, these leaders are using hybrid cloud to springboard to next-generation initiatives such as Internet of Things and cognitive computing, aiming to disrupt and capture new markets.

## Hybrid is the new norm

Three-quarters of organizations have already adopted cloud capabilities to some degree.<sup>1</sup> But that doesn't mean they're jettisoning all their traditional IT systems. In fact, our global study of 500 hybrid cloud decision makers reveals that organizations are increasingly integrating cloud resources with traditional IT to accommodate dynamic needs and specific business priorities.<sup>2</sup>

For some companies, hybrid cloud is a strategic move—accompanied by comprehensive and orchestrated management of their hybrid environment. But others may find themselves in a hybrid mode due to organic growth of their IT infrastructure and may not have a well thought-out strategy or comprehensive control over their blended environment.

Regardless of how they arrived at hybrid cloud, most of these organizations believe in a hybrid future. Seventy percent of them report they'll always have a blend of traditional IT and cloud. And the mix will continue to shift as companies grow their use of private and public cloud to manage dynamic and increasingly digital business priorities.

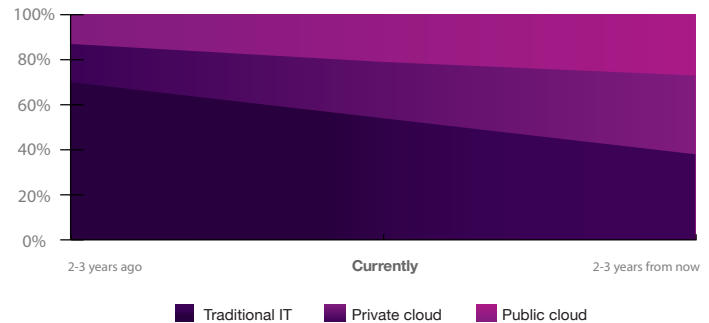


Figure 1. The hybrid blend is changing as the use of cloud increases

## 7 in 10

report they will always have a blend of traditional IT and cloud.

### About the study

To learn how enterprises use hybrid cloud, the IBM Center for Applied Insights surveyed 500 IT decision makers worldwide. The study focused on organizations that have implemented hybrid environments, with nearly three-quarters of respondents from large enterprises with more than 1,000 employees.

Mature markets surveyed were USA, UK, France, Germany, Denmark, Finland, Norway, Sweden, Japan and Australia. Growth markets surveyed were China, India and Brazil. To smooth possible geographic distortions, responses were weighted based on an IBM assessment of each country's total IT spend.

### About the IBM Center for Applied Insights

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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.



## Taking aim at competitive advantage

To learn about how companies are adopting hybrid cloud and its impact on business outcomes, we surveyed 500 IT decision makers at organizations worldwide that have implemented hybrid environments.

Our study indicates that improving productivity is the number one goal as companies hope to offload some of their IT resources and management complexity to the cloud. A close second is improved security and risk reduction—using the flexibility of hybrid to judiciously choose which workloads and data to move to the cloud and which to maintain in-house. Rounding out the top four motivations for hybrid adoption are cost reduction—shifting costs from fixed IT to as-needed cloud services—and scalability to handle dynamic workloads.

To examine different approaches to hybrid cloud and the value gained from each, we grouped organizations based on the maturity of their hybrid management capabilities and whether they're reporting competitive advantage from hybrid cloud:

**Frontrunners** are gaining competitive advantage through hybrid cloud and are managing their environment in an integrated, comprehensive fashion for high visibility and control (e.g., through a single dashboard).

**Challengers** are on the journey toward competitive advantage, but haven't fully achieved unified management of their hybrid cloud environment.

**Chasers** are not yet using hybrid cloud to drive competitive advantage and are in the early stages of gaining integrated control over their hybrid environment.

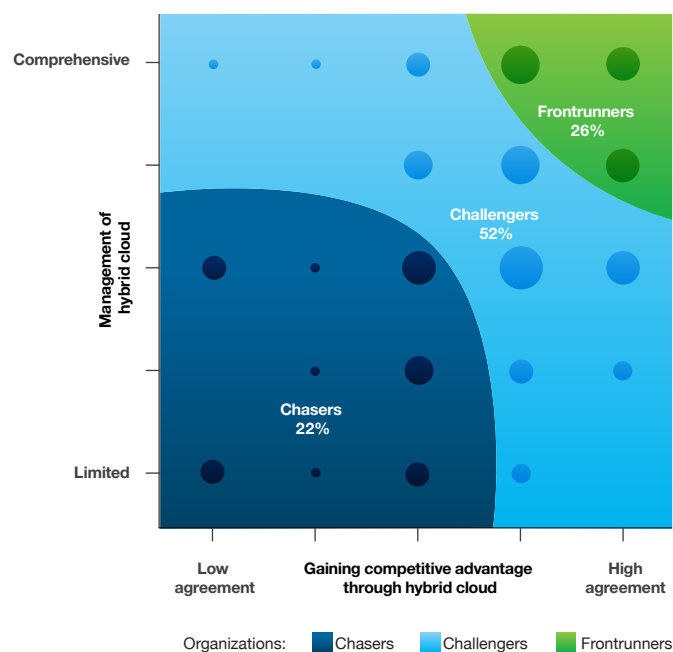


Figure 2. Frontrunners have comprehensive hybrid management and report gaining competitive advantage

## 9 in 10

Frontrunners say hybrid cloud gives them greater ROI than either an all-traditional or all-cloud environment.

## Forging a digital future

What gives Frontrunners their competitive edge with hybrid? First, they're achieving foundational outcomes with hybrid cloud—efficiency and productivity gains, including cutting costs and maximizing the value of existing infrastructure—at a higher rate than other organizations.

Beyond their efficiency advantage, Frontrunners are also more effectively using hybrid cloud to drive digital business growth, including product and service innovation and expansion into new markets. But these leaders really pull ahead of the others in using hybrid cloud to pioneer next-generation initiatives, such as cognitive computing and the Internet of Things (IoT), which have the potential to shape new digital markets and business models.

Given their upper hand on business outcomes, it's not surprising that nearly nine out of ten Frontrunners consider hybrid cloud crucial to their business strategy and success. Ultimately, Frontrunners are using hybrid cloud as a driver of digital change, with 85 percent saying that hybrid adoption is accelerating digital transformation in their companies.

**85%**  
of Frontrunners report that hybrid cloud is accelerating digital transformation in their organization.

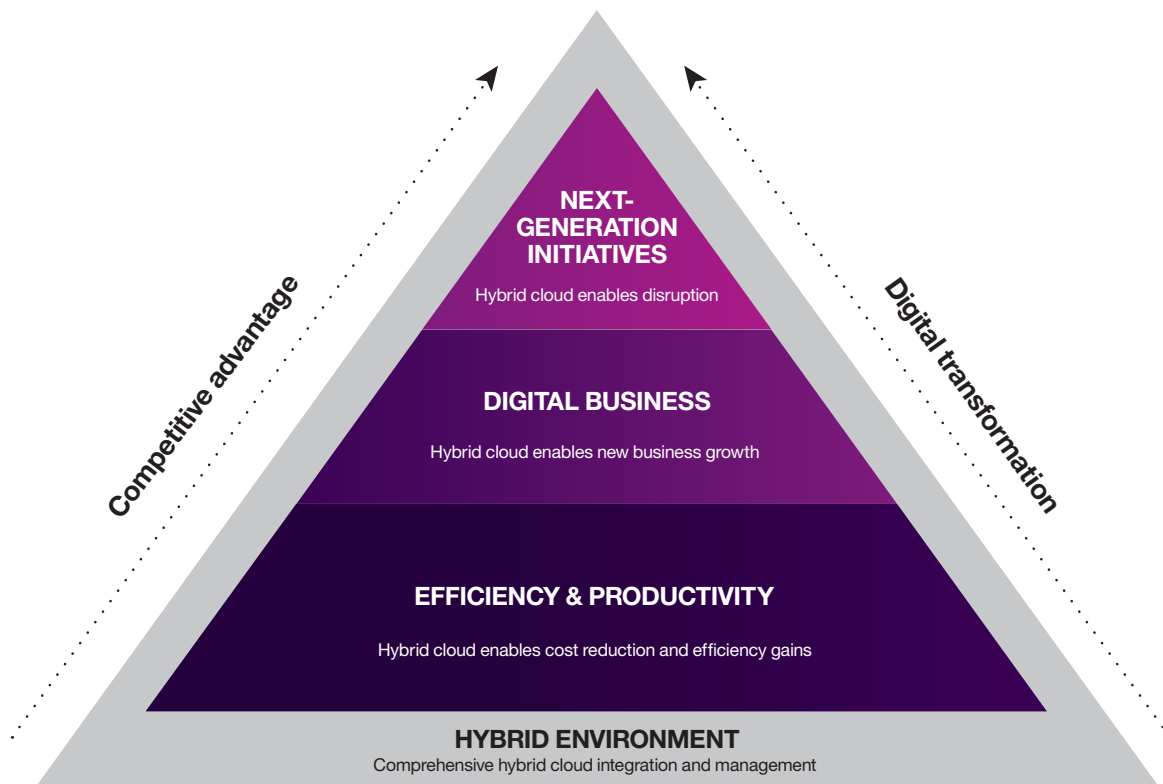


Figure 3. Hybrid cloud delivers value at every stage of digital transformation



### Improving efficiency and productivity

While all implementers strive for similar foundational gains, Frontrunners report greater returns from their hybrid investments. They're masters at improving efficiency and productivity with hybrid cloud, with about eight in ten achieving these goals.

Having cloud in their IT mix helps Frontrunners reduce expenses by shifting from fixed costs to the “pay-as-you-go” flexibility of the cloud delivery model. Cloud also gives the benefit of scalability, providing elastic computing capacity to support dynamic needs.

At the same time, being hybrid means that organizations can be selective about when to use cloud and when to retain parts of their traditional IT infrastructure—delivering the best functionality while meeting speed and flexibility needs, as well as resiliency, security and regulatory requirements.

Frontrunners are nearly twice as likely to maximize the value of their existing IT, putting legacy systems to work in a hybrid context. The blend of traditional IT and cloud—using each where it makes sense—allows companies to increase productivity through standardization and self-service IT, and to optimize business processes across the value chain.

### Faster deployment while cutting costs

Headquartered in Norway, with offices around the world, Cxense ASA provides real-time analytics, data management and personalization technology to over 6000 media, financial and consumer sites around the world. To expand globally, Cxense needed a hosting platform that could scale efficiently while protecting customer data.

Cxense implemented a hybrid cloud solution that allowed them to expand data centers to other locations in Europe and Japan, while also using the flexibility of cloud to quickly and easily support growing demand.

As a result, Cxense achieved 98 percent faster deployment with provisioning reduced from three months to less than a day, allowing the company to expand its global presence and improve agility.<sup>3</sup>

# 85%

of Frontrunners are reducing costs with hybrid cloud.

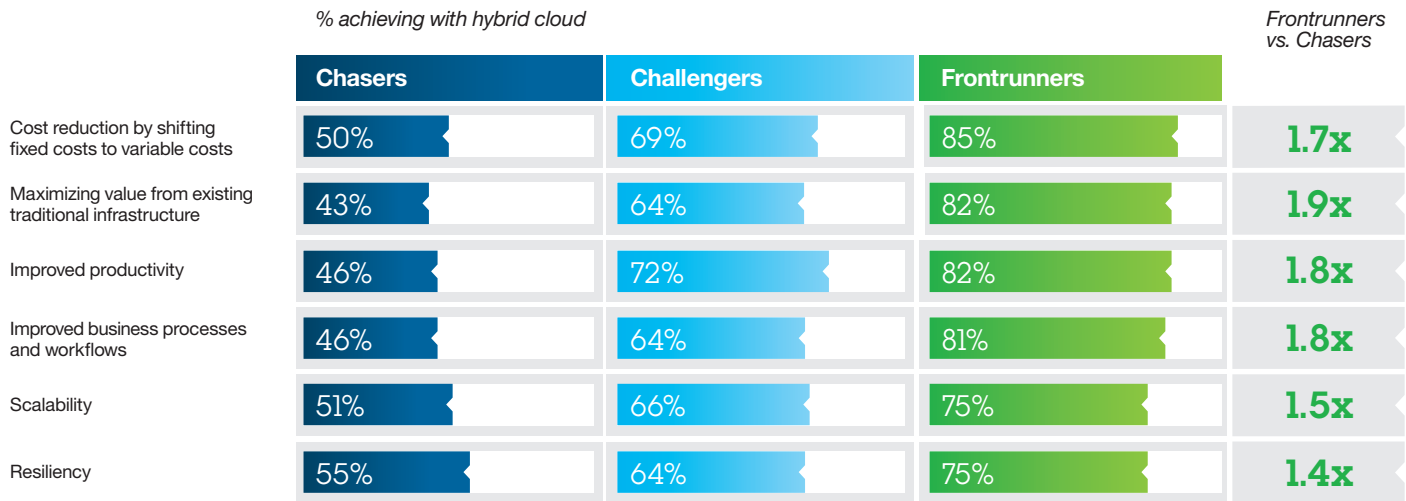


Figure 4. Frontrunners outpace the rest of implementers on efficiency and productivity with hybrid cloud

*“The best thing about having a hybrid environment is it frees up our staff to do other things besides monitoring our environment all the time.”*

– CIO, Financial Markets



## Advancing digital business

Frontrunners aren't resting on their productivity laurels, however. They're using hybrid cloud to strategically grow and reinvent their businesses.

With digital models impacting businesses across industries, many organizations are shifting to offerings for the web, mobile and other devices to reach new customers. Recognizing the importance of digital reach, Frontrunners are four times more likely than Chasers to use hybrid cloud to offer new digital services that add value and provide a seamless experience for users across platforms.

A stunning 82 percent of Frontrunners are using hybrid cloud to innovate products and services more rapidly, frequently using composable APIs as building blocks. Hybrid cloud can also accelerate the innovation process by streamlining workflows.

Consider this example of creating innovative functionality for cardiac monitoring. Patients customarily wear monitors that collect data that is later analyzed when the device is returned to the physician's office. But in a hybrid environment, new monitors and apps can upload data in real time to the cloud, where it can be delivered more quickly to cardiologists for problem-spotting.

Frontrunners are **4x** more likely to use hybrid cloud to launch new digital services.

Frontrunners also use hybrid cloud to extend their reach. More than three-quarters say hybrid enables their expansion into new markets and customer segments and gives them the agility to quickly respond to changing markets and customer needs. What's more, almost eight in ten of these leaders report that hybrid cloud is helping them grow their ecosystem.

While many of these benefits come from cloud computing, hybrid environments offer an additional degree of flexibility. Sometimes highly sensitive data needs to be kept in-house due to security or compliance concerns, particularly in regulated industries. In other cases, existing legacy systems may offer services not easily replicated.

### A foray into digital entertainment

Russia's renowned Mariinsky Theatre was looking to expand its global reach by live-streaming opera, ballet and orchestra performances. The quality of the streamed content was a critical priority.

By connecting its existing infrastructure to a scalable, high-performance cloud hosting solution, the theater was able to reach new audiences and accommodate a fluctuating number of viewers on its digital content-streaming platform.

As a result of this hybrid cloud deployment, the theater was able to cut capital expense by US\$20,000, boost performance by 30 percent and accelerate infrastructure deployment by 99 percent.<sup>4</sup>

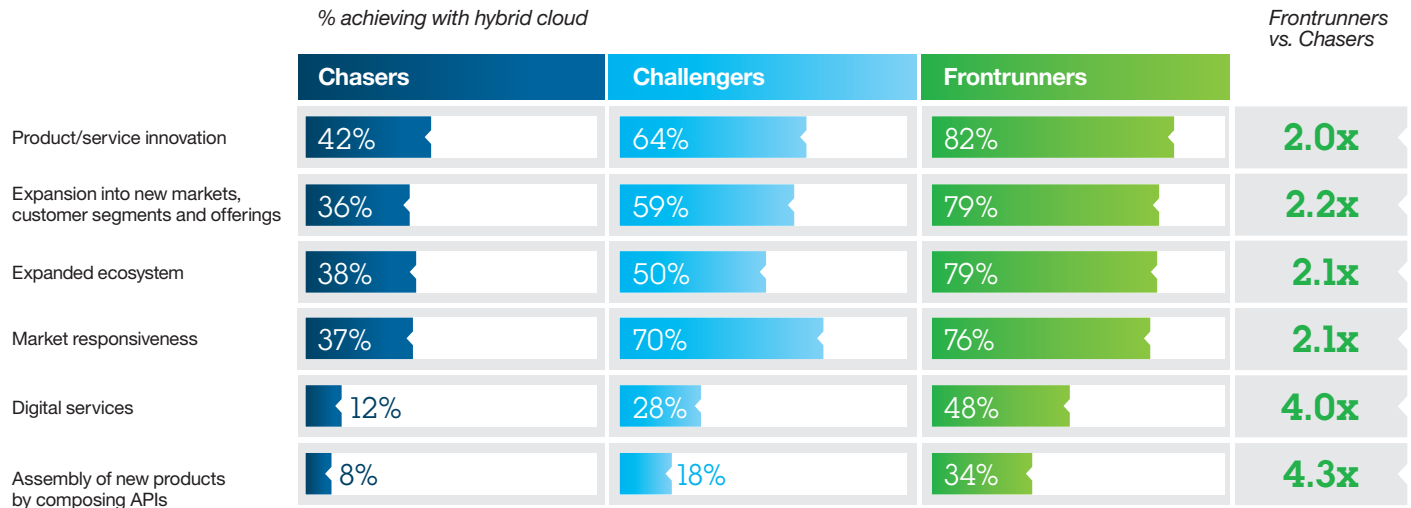


Figure 5. Frontrunners are ahead on achieving business growth and capturing new markets with hybrid cloud

*“The best thing about having a hybrid environment is that all of our business plans become reality in one environment.”*

– IT Director, Consumer Products



### Jumpstarting next-generation initiatives

With an eye to the future, Frontrunners are already using hybrid cloud to drive next-generation initiatives that augment their differentiation in the marketplace. These pioneering initiatives leverage emerging technologies to tap into new business opportunities.



**Internet of Things (IoT)**, a high-growth cross-industry opportunity for many organizations, is an area where Frontrunners are nearly two times as likely to be using hybrid cloud. Whether it's connecting smart watches, smart cars or smart homes, the flexibility of hybrid cloud allows these organizations to seamlessly connect devices and share analytical insights in real time with customers and partners.

#### Connecting homes and businesses with smart data

Shaspa, a leading global vendor of smart solutions for both home and office, collects sensor data from residential and commercial spaces. In order to enable sophisticated analytics on that data, information needs to be stored and processed seamlessly.

By building a hybrid cloud-based IoT platform to connect and control a variety of environments, Shaspa was able to connect building automation systems, household appliances and mobile platforms from hundreds of global manufacturers.

As a result, Shaspa can deliver real-time intelligent analytics to optimize living and working conditions while reducing costs through smart automation.<sup>5</sup>



**Cognitive computing** is a big differentiator for Frontrunners—they are five times as likely as Chasers to be using hybrid cloud to enable cognitive capabilities. These initiatives can vary from the use of predictive intelligence to aid in decision making to more advanced adaptive and machine learning capabilities for industries such as healthcare, commerce or education.

#### Applying cognitive insights

Finland's largest airline, Finnair, aimed to improve customer experience by offering new digital services, while also managing costs and growing revenue.

The airline leveraged the flexibility of a hybrid cloud platform to integrate new cloud services with its existing infrastructure. As part of its digital transformation, it started using cognitive capabilities to improve employee productivity by enabling agents to more quickly find responses to customer needs.

With implementation underway, Finnair hopes to gain operational efficiency, reduce complexity and establish a foundation to support new growth initiatives.<sup>6</sup>

Frontrunners are **5x** more likely to be using hybrid cloud to drive initiatives in cognitive computing.



**Commercializing insights** is also an emerging area of interest for leaders—to transform the vast amounts of data at their disposal into business

assets or to monetize that data through partnerships and customer interactions. Here Frontrunners are almost three times as likely as Chasers to be using hybrid to manage the flow of data and applications.

For all of these strategic next-generation initiatives, hybrid cloud brings more seamless access and better management of data and applications, regardless of the number of platforms, endpoints and data sources. In addition to the efforts already underway, another 40 percent of Frontrunners plan to ramp up IoT, cognitive and data commercialization initiatives in the next three to five years to continue outpacing other implementers.

#### Making sense of visual data

Switzerland-based nViso developed a facial imaging solution that captures and deciphers human emotions in real time, using video streams from webcams, mobile devices and in-store cameras.

Recognizing an opportunity to revolutionize customer sentiment analysis in the retail sector, nViso adopted a hybrid cloud solution to offer new ways to analyze real-time data extracted from videos of customers.

With the flexibility to run facial imaging solutions in hybrid environments, nViso's clients can work with customer data wherever it is stored and gain insight into how customers' physical reactions affect their purchasing behavior.<sup>7</sup>

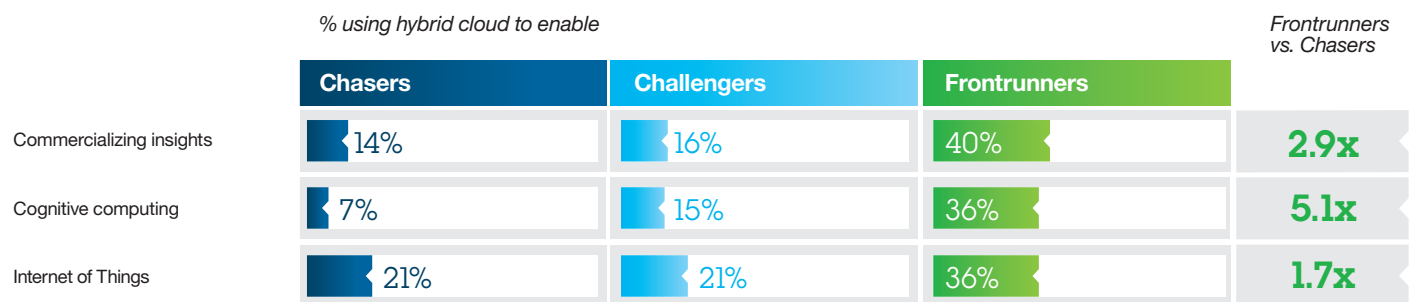


Figure 6. Hybrid cloud is a common enabler of strategic next-generation initiatives for Frontrunners

## How do Frontrunners thrive?

Frontrunners have scored impressive business benefits from their hybrid cloud efforts, but that doesn't mean their journey has been without growing pains. More than one in four point to the difficulty of integrating legacy IT and cloud environments as a challenge. Internal skills are not always readily available, with one in three citing the skills gap as a big issue for their organization. What's more, although companies turn to hybrid cloud in hopes of increasing security, it also remains their number one challenge.

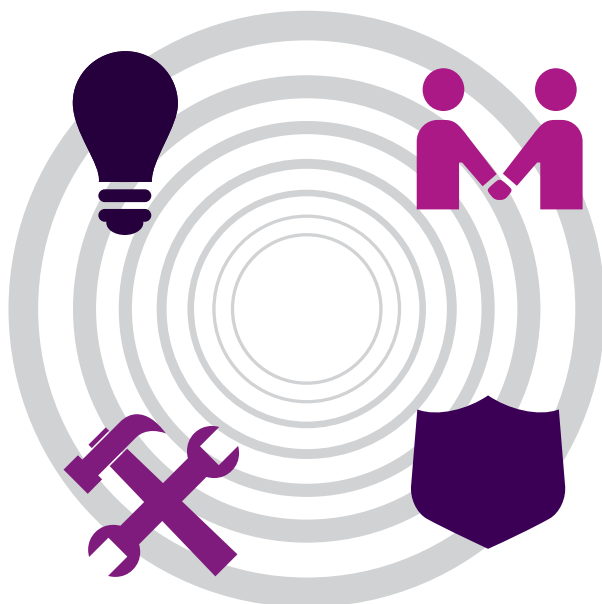
Indeed, the Frontrunners are more likely than other organizations to cite management complexity and security as concerns. Over three-quarters report that hybrid introduces greater IT management complexity into their environment, and 70 percent say that their hybrid environment causes them greater security concerns.

How are these leaders overcoming these challenges and leveraging hybrid environments to achieve competitive advantage? They take a very intentional and holistic approach to implementing and managing their hybrid environments.



### Deliberate and comprehensive hybrid strategy

Frontrunners don't just let hybrid happen to them. They are three times more likely than Chasers to have a comprehensive, enterprise-wide strategy for hybrid cloud. They know that a focus on strategy can increase the value they can get from hybrid investments. Their strategic view also extends to mobile development and delivery, with 83 percent of Frontrunners saying hybrid cloud is essential to their mobile strategy and initiatives.



Frontrunners are **3x** more likely to have an enterprise-wide hybrid strategy.



### Hybrid transforms culture

Frontrunners also understand that the complexity of hybrid environments is best tackled through a collaborative approach to IT decision making—bringing both IT and business leaders to the table. In almost three-quarters of Frontrunner organizations, hybrid cloud has elevated the extent to which the CIO is an advisor to the business. It has also encouraged C-suite and IT roles to collaborate on key IT decisions that impact business goals. And this increased collaboration sheds welcome light on shadow IT, a common problem across organizations where the business may be using applications and services not authorized or supported by the IT department. A striking 81 percent of the Frontrunners report that hybrid cloud is helping to reduce shadow IT in their organizations.



### Advanced hybrid management

Frontrunners know that an integrated, cohesively managed hybrid environment is key to overcoming IT complexity. They're almost three times as likely as Chasers to use sophisticated automation to manage and orchestrate their hybrid environments, including provisioning and configuration of systems and workloads. And they're 2.6 times as likely to use highly integrated service management to improve levels of quality and service. They strongly believe in an open approach to infrastructure, with 85 percent reporting that open standards and technologies are essential for portability and interoperability.

#### Comprehensive strategy

Have an enterprise-wide strategy for hybrid

Believe hybrid is essential to their mobile initiatives

| Chasers | Challengers | Frontrunners | Frontrunners vs. Chasers |
|---------|-------------|--------------|--------------------------|
| 19%     | 35%         | 57%          | 3.0x                     |
| 46%     | 69%         | 83%          | 1.8x                     |

#### Hybrid transforms culture

Drives more collaboration between IT and Line of Business

Reduces shadow IT

Increases role of business leaders in IT decision making

Increases CIO's role as an advisor to the business

| Chasers | Challengers | Frontrunners | Frontrunners vs. Chasers |
|---------|-------------|--------------|--------------------------|
| 49%     | 68%         | 85%          | 1.7x                     |
| 38%     | 59%         | 81%          | 2.1x                     |
| 44%     | 53%         | 76%          | 1.7x                     |
| 47%     | 59%         | 73%          | 1.6x                     |

Figure 7. A comprehensive strategy and collaborative decision making help make Frontrunners more effective

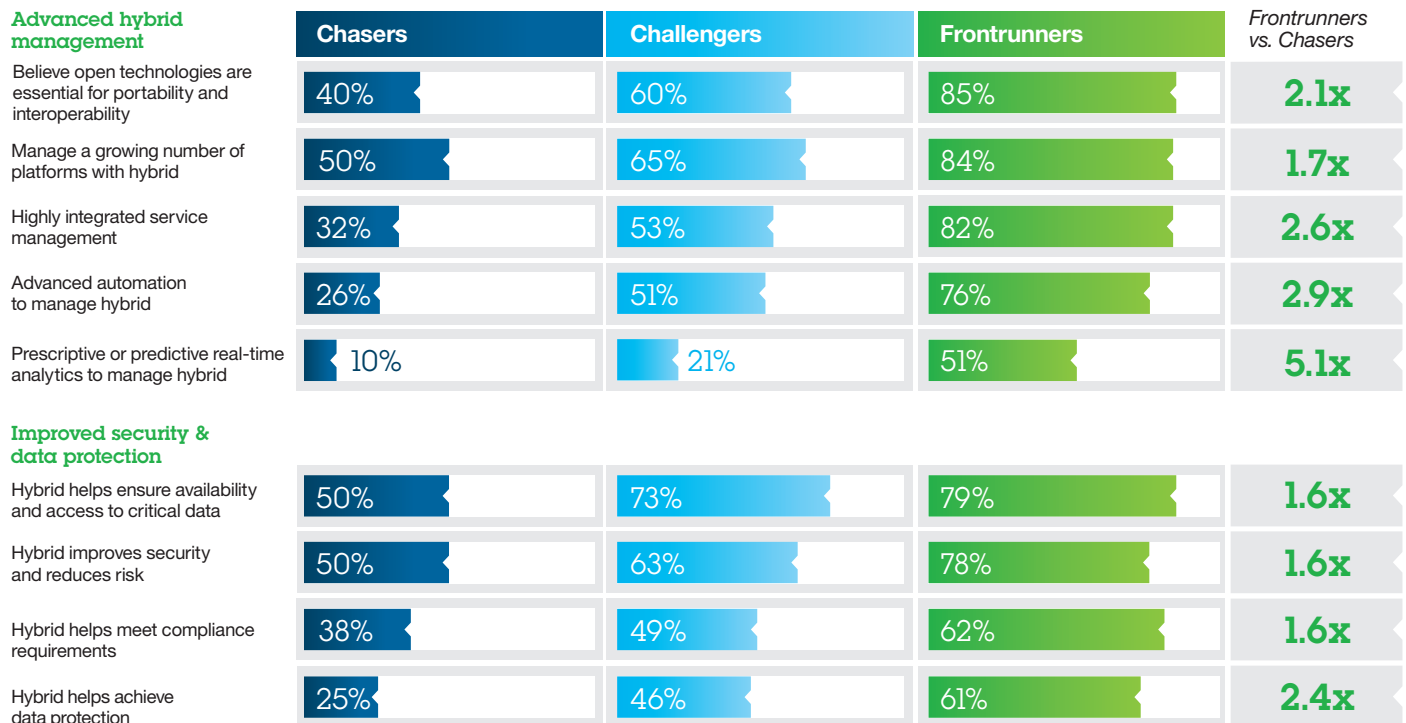


Figure 8. Frontrunners employ more advanced hybrid management capabilities and are better at alleviating security concerns

Frontrunners also place a premium on using sophisticated analytics to manage their hybrid environments. While a majority of hybrid cloud implementers are using some level of real-time analytics to manage their hybrid environments, the Frontrunners are over five times as likely as Chasers to use more advanced predictive and prescriptive analytics to predict possible outcomes and generate recommendations on next steps or actions.



### Improved security & data protection

While Frontrunners are more likely than other implementers to cite security as a top concern, the reality is that they are also more likely to be overcoming this challenge. Seventy-eight percent of Frontrunners report that hybrid cloud is improving security and reducing risk. Extending the same level of security controls and best practices they have in place for traditional IT to the cloud is one way they can reduce risks in their hybrid environment and make applications and data more secure. Assigning business-critical workloads to on-premise resources is another way to control access to information and help ensure security.

# The Frontrunner playbook:

Growing up in a hybrid world is undoubtedly complex, as organizations strive to find the right balance of traditional IT and cloud services to match their business needs. From the experiences of Frontrunners, we know the move to hybrid cloud must be strategic and intentional. In a hybrid world, those who score high on the management of hybrid environments can get greater value from their existing IT investments and leapfrog to disruptive business and technology initiatives.



## Think big picture

Collaborate across the business to develop a comprehensive hybrid strategy that can take advantage of existing infrastructure investments and the flexibility of cloud.

- Are your IT and business leaders joining forces on the organization's needs?
- Does your strategy inform clear implementation and integration plans for your hybrid environment?



## Move from vision to reality

Apply advanced technologies to better manage complexity and secure hybrid environments.

- Can predictive or prescriptive analytics provide insights for improving the operation of your hybrid environment?
- Are you using open technologies to increase interoperability and portability across your hybrid environment?



## Advance digital innovation

Move beyond foundational gains of efficiency and productivity to high-value digital business benefits such as faster innovation and increased customer engagement.

- How can hybrid capabilities help you accelerate development of digital services to grow your business?
- How are you expanding and connecting your ecosystem of partners and customers?



## Shape the future

Pilot emerging technologies and next-generation initiatives that establish differentiation across industries and disrupt markets.

- Can hybrid cloud enable your foray into cognitive computing to create intelligent systems?
- Can hybrid cloud help spearhead your IoT initiatives to connect devices and data for business gain?



## About the authors

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## Notes and sources

- <sup>1</sup> "Raising the game: The IBM Business Tech Trends Study." IBM Center for Applied Insights. August 2014. <http://www.ibm.com/ibmcai/biztechtrends>
- <sup>2</sup> Definition of hybrid cloud used in the study: "Hybrid cloud is the connection of traditional IT systems to one or more clouds and/or connection of one or more clouds to other clouds"
- <sup>3</sup> "Cxense agilely delivers online services to customers worldwide with a SoftLayer hybrid cloud hosting solution." IBM. November 2015. <http://www-03.ibm.com/software/businesscasestudies/us/en/corp?synkey=I327737E25231Z82>

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- <sup>4</sup> "Historic Russian musical theater entertains new global audiences using IBM Hybrid Cloud." IBM. November 2015. <https://medium.com/@ibmcloud/historic-russian-musical-theater-entertains-new-global-audiences-using-ibm-hybrid-cloud-908456abf987#.z5kctaba6>
- <sup>5</sup> "Shaspa: Enabling the internet of things for smarter environments." IBM. 2014. <http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?htmlfid=IMC14898WWEN&appname=skmwww>
- <sup>6</sup> "Finnair uses IBM industry expertise, cloud and services to drive digital transformation, support expansion." IBM. September 2015. <https://www-03.ibm.com/press/us/en/pressrelease/47627.wss>
- <sup>7</sup> "nViso: Using real-time facial imaging to deliver deep insights into customer sentiment." IBM. 2014. <http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=PM&subtype=AB&htmlfid=YTC03822USEN>