



Tailoring hybrid cloud for banking

Designing the right mix for innovation, efficiency and growth

IBM Institute for Business Value

Executive Report

Cloud

How IBM can help

IBM Cloud enables seamless integration into public and private cloud environments. The infrastructure is secure, scalable and flexible, providing tailored enterprise solutions that have made IBM Cloud the hybrid cloud market leader. For more information, please visit ibm.com/cloud-computing.

Cloud's transforming attributes

Cloud has become a fundamental enabler of banking innovation. Six transforming cloud attributes – cost flexibility, scalability, market adaptability, masked complexity, contextual variability and ecosystem connectivity – not only underpin efficiency improvement, they support a substantially broad range of business transformation and associated revenue growth.

Strengthening strategies for hybrid cloud

Recognizing the cost and flexibility advantages of cloud, banks have been early adopters. Cloud's ability to bypass the binding limitations of legacy systems has motivated banks to embrace cloud in their front, middle and back offices. However, despite successfully implementing cloud to improve specific functions and processes, most banks report an unwillingness to embrace cloud holistically. To gain all of the economic, strategic and financial benefits cloud affords, cloud's footprint needs to extend further. Developing clear, robust, efficient and practical strategies and governance for hybrid cloud solutions is therefore essential.

In a recent IBM Institute for Business Value survey, banks report a clear intention to maintain many workloads on dedicated, on-premise servers. Why? Bankers cite a lack of relevant in-house cloud skill sets, regulatory challenges and security concerns among their top reasons. With this enduring environment of on-premise and cloud solutions, development of robust strategies and effective governance is critical to profitably manage banking's hybrid cloud solutions.

This executive report explores the specific intentions, opportunities and concerns of banking leaders around the world regarding hybrid cloud adoption. It identifies alternative scenarios and provides a practical set of recommendations to accelerate and strengthen bank strategies for hybrid cloud.



50 percent of banking executives say they believe hybrid cloud can lower their cost of IT ownership



47 percent of banking executives say they believe hybrid cloud can improve operating margin



47 percent of banking executives say they believe hybrid cloud can accelerate innovation

Cloud technologies have become virtually ubiquitous. Since the IBM Institute for Business Value launched its seminal study, “The Power of Cloud,” in 2012, adoption of cloud has become mainstream.¹ In 2012, 58 percent of banks said they were planning, testing, or adopting cloud. Today, 83 percent of banks say cloud initiatives are already part of a coordinated program or a fully integrated strategic transformation.

Across all industries, banking is the most aggressive and largest adopter of cloud, accounting for as much as 16 percent of total global cloud expenditures. By 2019, banking’s spending on cloud is expected to approach USD \$100 billion, with cloud-enabled workloads of top-tier banks expected to double annually.²

Bankers recognize that a public cloud yields benefits, such as supporting deeper customer relationships and strengthening ecosystem collaboration. But many are wary of loss of control or possible security and compliance challenges. While a private cloud can address these challenges, it has constraints of its own, obstructing attempts at innovation and teamwork behind impermeable firewalls.

Hybrid cloud provides a tailored solution. In a hybrid approach, an on-premise cloud can be optimized for operational availability and stability, while an off-premise cloud can be leveraged for the speed and agility essential to enriching customer engagement.

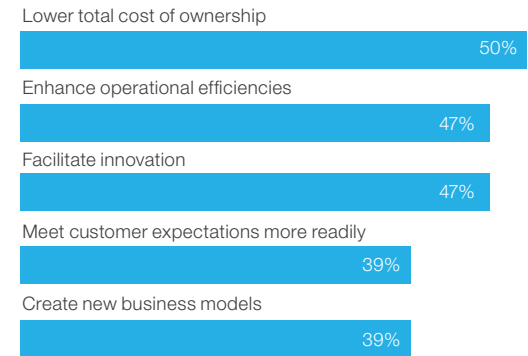
Combining the advantages of both public and private clouds, while mitigating their limitations, leading banks are already pursuing hybrid solutions.³ Bankers report that hybrid cloud adoption lowers their total cost of technology ownership, improves operational efficiency, promotes innovation, aids development of new business models and supports more fulfilling customer engagement (see Figure 1).

Hybrid cloud comprises two or more private, community or public clouds that, while remaining unique, work together. In doing so, hybrid cloud incorporates the benefits of multiple deployment models while mitigating associated risks.

Figure 1

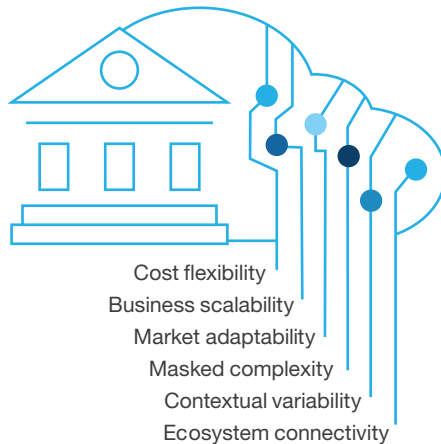
Benefits of hybrid cloud, as reported by global banking executives

How will hybrid cloud adoption support the growth of respondent's organization?



Source: IBM Institute for Business Value Global Cloud Survey, 2016

Figure 2
Cloud business enablers



Source: IBM Institute for Business Value analysis

Dissecting the benefits of hybrid cloud

To power banking transformation, hybrid cloud engages six powerful business enablers: cost flexibility, business scalability, market adaptability, masked complexity, contextual variability and ecosystem connectivity (see Figure 2).

Cost flexibility. Hybrid cloud helps banks manage costs with greater flexibility by facilitating a switch from fixed to variable expenses. This shift allows banks to focus on funding business initiatives rather than tying up investment in under-utilized capital equipment. For example, a large European bank aimed to transform digitally to serve its customers better, while keeping its costs low. Recognizing the power of hybrid cloud, the bank developed and deployed a hybrid cloud solution and plans to move its entire mid-range environment to cloud, anticipating savings of up to 40 percent on costs.⁴

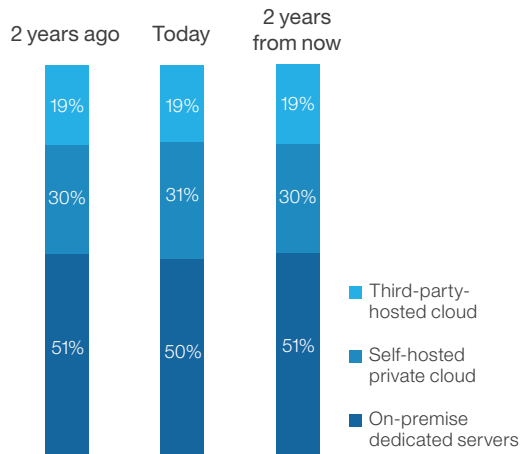
Business scalability. While reducing the need to fund in-house infrastructure, hybrid cloud adoption supports immediate, unlimited scalability in business functions as well. A leading North American bank was looking to scale up its operations every quarter to serve its customers satisfactorily in peak hours. The bank deployed hybrid cloud solutions that enabled it to extend its on-premise infrastructure to a secure cloud during peak workloads, enhancing customer service at reduced costs and higher security.⁵

Market adaptability. As the pace of change in banking continues to accelerate, hybrid clouds support market agility, making it cheaper and easier to experiment with new competitive tactics, while recovering more quickly from suboptimal approaches. A leading Australasian bank, identifying customer experience as a priority focus area, deployed a hybrid cloud solution to reduce time to market and delivered an enhanced mobile experience to its customers in only 12 weeks.⁶

Masked complexity. At a time when customers increasingly demand more compelling, user-friendly experiences, hybrid cloud enables the disguising of ever-greater complexity behind natural, uncomplicated interactions. Privately held start-up nViso, based in Lausanne, Switzerland, has developed software that provides emotion-measurement technology. Intending to empower financial advisors with client insight, nViso developed a hybrid cloud-based solution that analyzes facial expressions. nViso's solution helps investors and their financial advisors understand what motivates them financially so that they can make better investing decisions. The cloud-based resource – which took less than eight weeks to develop – can be instantly accessed by clients, regardless of location or time zone.⁷

Contextual variability. Hybrid clouds support individualized experiences based on mobility and user-driven context. For example, a multinational banking and financial services business in Europe adopted hybrid cloud to build a mobile app that enables customers to experience multiple services on a unified platform – while also enabling them to make payments through their bank accounts.⁸

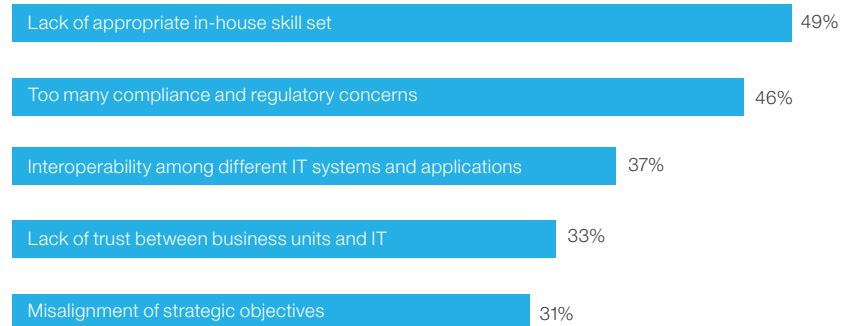
Ecosystem connectivity. Finally, adoption of hybrid cloud encourages ecosystem collaboration, enabling wide-ranging communication and coordination with distributors, suppliers, agents, partners, financial advisors, customers and other stakeholders. Banco Santander, one of the largest banks globally, has actively developed a growing fintech ecosystem through its venture capital fund, InnoVentures. In addition to investing in cloud-related startups such as PayKey, Kabbage and Tradeshift, Banco Santander offers access to its own global hybrid cloud infrastructure to its ecosystem.⁹

Figure 3*Assignment of workloads, 2014-2018**Source: IBM Institute for Business Value Global Cloud Survey, 2016*

Hurdling the perceived hazards of hybrid cloud adoption

Despite the significant benefits of hybrid clouds, many banking executives appear hesitant to transfer additional business functions offsite. When asked to consider the four years spanning 2014 to 2018, banks say they expect less than a one-percent shift in workloads currently assigned to public clouds, private clouds and on-premise servers (see Figure 3).

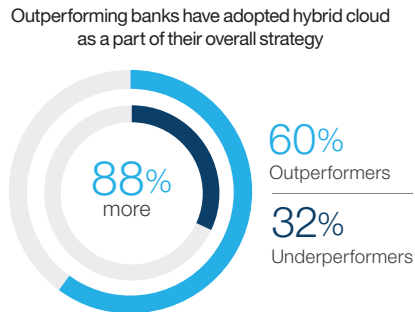
Banking executives report five major hurdles to hybrid cloud adoption (see Figure 4).

Figure 4*Perceived barriers to hybrid cloud adoption, as reported by banking executives**Source: IBM Institute for Business Value Global Cloud Survey, 2016*

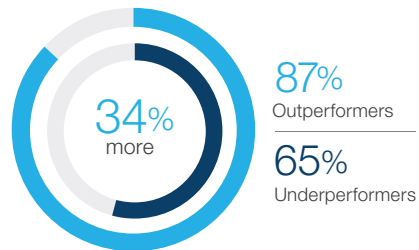
Banks in our survey that outperformed their peers in both revenue growth and operating efficiency are significantly more likely to embrace adoption of hybrid cloud. Our survey found that outperforming banks are 88 percent more likely to include hybrid cloud adoption as part of their overall business strategies and 34 percent more likely to deploy cloud to increase operating margins (see Figure 5).

Figure 5

Outperforming banks embrace hybrid cloud



Outperforming banks employ hybrid cloud to reduce operational costs



Source: IBM Institute for Business Value Global Cloud Survey, 2016

Reducing infrastructure costs

A large Australasian bank implemented a hybrid cloud environment to standardize and simplify its IT organization, resulting in significant cost savings within the first four years.¹⁰

Developing software more efficiently

Danske Bank, located primarily in the Nordics, uses hybrid cloud to provide a smooth end-to-end software development environment, driving efficiencies in software creation, maturation tracking, testing, failure detection and production deployment.¹¹

Building an ecosystem to enhance service and expand market reach

To differentiate its brand, India's Yes Bank implemented a hybrid cloud solution to create its own vibrant business-to-consumer ecosystem, while motivating and driving its own secure digital transformation.¹²

Expediting product development

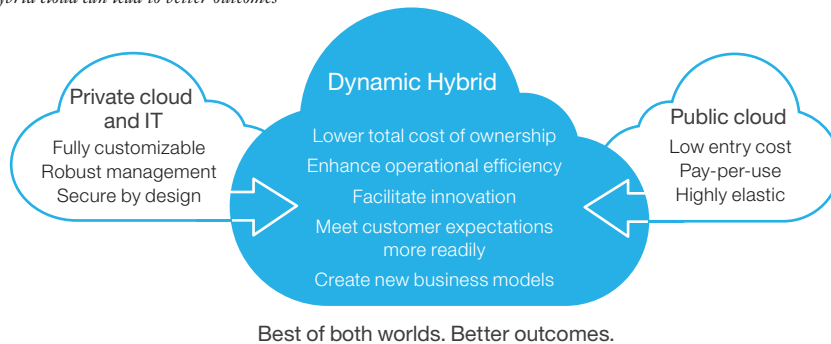
To gain a competitive edge by quickly responding to customer needs, a large North American bank deployed hybrid cloud to accelerate time-to-market for new banking products and services.¹³

Where to from here?

Hybrid cloud is driving value creation for banks worldwide. Combining the security of private cloud with the agility of public cloud, hybrid cloud offers tailored solutions that can drive operational efficiency, revenue growth, innovation and ecosystem collaboration (see Figure 6).

Figure 6

Hybrid cloud can lead to better outcomes



Source: IBM Institute for Business Value analysis

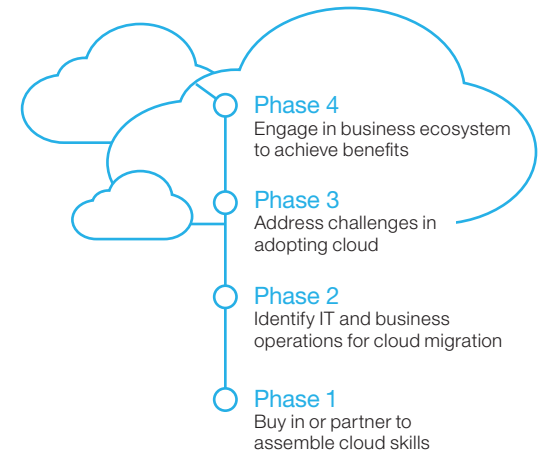
To advance their hybrid cloud programs, banks can pursue three immediate steps.

- 1** Orchestrate accountability for cloud objectives, plans and implementation across your line-of-business and IT. To accelerate business transformation, a senior line-of-business executive can act as cloud champion accountable for identifying strategic initiatives that can benefit from hybrid cloud implementation. Banks can also establish a cloud steering committee, staffed with IT and line-of-business executives, to evaluate and prioritize hybrid cloud opportunities and monitor progress. Third, banks can undertake an analysis of cloud-enablers, given their competitive contexts, to envision innovative hybrid cloud opportunities that deliver against business goals for operations, profitable growth and new products and services.
- 2** Define the business proposition for hybrid cloud across your institution, ecosystem and value chain. As part of your hybrid cloud “opportunity identification” process, build a business case for each of the cloud opportunities you identify. Analyze the anticipated benefits of each proposal, as well as the risks associated with not acting fast enough, including the likelihood of being eclipsed by faster-moving competitors. Pay particular attention to how hybrid cloud can be used in concert with other technologies, such as mobile, blockchain, the Internet of Things (IoT) and cognitive computing, to invent radically new solutions that drive efficiencies, while creating deeply compelling, state-of-the-art customer experiences. Finally, weigh prospective hybrid cloud initiatives not only inside your bank, but also in terms of their significance in advancing digital reinvention across your ecosystem and value chain.

3 Partner to assemble the capabilities needed to aggressively advance your cloud agenda. Use hybrid cloud to extend your organizational boundaries to include your business ecosystem, recruiting skill sets that redress any strategic weaknesses, and avail your bank of new competencies that would otherwise be unavailable operating alone. Last, build a robust-but-flexible operational hybrid cloud roadmap that migrates workloads in tune with your strategic goals (see Figure 7).

Figure 7

Steps to successful hybrid cloud adoption



Source: IBM Institute for Business Value analysis

Key questions

- How would you articulate your bank's cloud strategy?
- To what extent is your bank leveraging the six hybrid cloud business enablers?
- What new benefits can your bank attain by more thoroughly embracing hybrid cloud?
- What additional skills are required to accelerate your bank's hybrid cloud adoption and how can they be obtained through deeper ecosystem engagement?
- What are the logical steps to start accelerating your hybrid cloud adoption today?

How we conducted our research

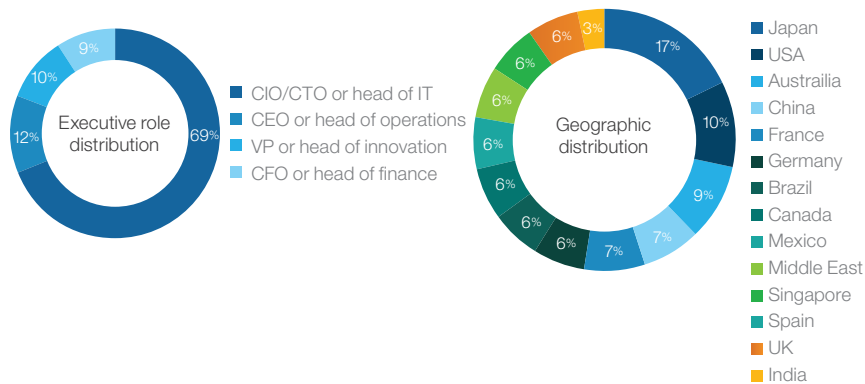
The IBM Institute for Business Value in collaboration with the Economist Intelligence Unit surveyed 1,000 leaders from 18 industries and more than 15 countries in mid-2016.

Respondents were asked a series of detailed questions around their utilization and business outcomes associated with cloud technologies.

Six major C-suite roles were surveyed against including CEO, COO, CFO, CMO, CHRO and CIO. Sixty-nine percent of respondents held the title of CIO, CTO or Head of IT.

To analyze differences among organizations, each respondent did a self-assessment based on organizational performance. A “high-performing organization” is one that rated itself as “5” on a scale of 1 (low) to 5 (high) in both revenue/effectiveness and profit/efficiency performance.

Seventy respondents were leaders from the banking sector representing Australia, Brazil, Canada, China, France, Germany, India, Japan, Malaysia, Mexico, Middle East, Singapore, Spain, the United Kingdom and the United States.



For more information

To learn more about this IBM Institute for Business Value study, please contact us at iibv@us.ibm.com. Follow @IBMIBV on Twitter, and for a full catalog of our research or to subscribe to our monthly newsletter, visit: ibm.com/iibv.

Access IBM Institute for Business Value executive reports on your mobile device by downloading the free “IBM IBV” apps for phone or tablet from your app store.

The right partner for a changing world

At IBM, we collaborate with our clients, bringing together business insight, advanced research and technology to give them a distinct advantage in today’s rapidly changing environment.

IBM Institute for Business Value

The IBM Institute for Business Value (IBV), part of IBM Global Business Services, develops fact-based, strategic insights for senior business executives on critical public and private sector issues.

Authors

Arvind Krishna is Senior Vice President for Hybrid Cloud and Director of Research at IBM. Arvind leads the IBM hybrid cloud business, including strategy, product design, offering development, marketing, sales and service. Arvind can be reached on LinkedIn at [linkedin.com/in/arvindkrishna](https://www.linkedin.com/in/arvindkrishna) and at arvindk@us.ibm.com.

Sanjay Rishi is General Manager of Cloud Consulting Services at IBM. He is responsible for IBM’s portfolio of cloud consulting services and leads a global team focused on helping clients harness cloud computing technology to drive business innovation across their value chains. Sanjay can be reached on LinkedIn at [linkedin.com/in/sanjayrishi](https://www.linkedin.com/in/sanjayrishi), Twitter @DrSanjayRishi and at sanjay.rishi@us.ibm.com.

Nicholas Drury is the Global Banking and Financial Markets Leader for the IBM Institute for Business Value. Nick has 20 years of practitioner experience with blue chip names in international banking and financial markets. Nick can be reached on Twitter @nicholasdrury1 and at nickd@sg.ibm.com.

Lynn Kesterson-Townes is the Global Cloud Leader at the IBM Institute for Business Value. Lynn has over 20 years of expertise in management consulting, business development, strategic planning, marketing, and mergers & acquisitions. Lynn can be reached on LinkedIn at [linkedin.com/in/lynnkesterson](https://www.linkedin.com/in/lynnkesterson), Twitter @LynnKesterson and at lkt@us.ibm.com.

Anthony Marshall is Research Director at the IBM Institute for Business Value. Anthony is responsible for directing thought-leadership research on a variety of issues related to the public and private sectors. Anthony can be reached on LinkedIn at [linkedin.com/in/anthonyejmarshall](https://www.linkedin.com/in/anthonyejmarshall), Twitter @aejmarshall and at anthony2@us.ibm.com.

Notes and sources

- 1 Berman, Saul, Lynn Kesterson-Townes and Anthony Marshall. "The power of cloud: Driving business model innovation." IBM Institute for Business Value. February 2012. <https://www-935.ibm.com/services/us/gbs/thoughtleadership/ibv-power-of-cloud.html>
- 2 IBM internal source: MD&I Industry Insights 2016 Select View: Cloud Services for Industry – 2016; IDC FutureScape: Worldwide Financial Services 2016 Predictions, IDC, January 25, 2016, <http://www.idc.com/getdoc.jsp?containerId=AP40586215&pageType=PRINTFRIENDLY>
- 3 "Hybrid clouds win over business." BBVA Innovation Center. April 22, 2015 <http://www.centrodeinnovacionbbva.com/en/news/hybrid-clouds-win-over-businesses>. "Westpac takes first steps in cloud infrastructure reform." ITNews. September 5, 2016. <https://www.itnews.com.au/news/westpac-takes-first-steps-in-cloud-infrastructure-reform-435909>. "DBS Bank collaborates with AWS to create a "hybrid cloud environment." TechPortal, August, 2016. <http://thetechportal.com/2016/07/28/dbs-bank-collaborates-aws-create-hybrid-cloud-environment/>; "ING Group commits to the Cloud." DatacenterDynamics June 14, 2012. <http://www.datacenterdynamics.com/content-tracks/colo-cloud/ing-group-commits-to-the-cloud/65936.fullarticle>. "BNY Mellon Transforms IT One Step At A Time." InformationWeek. October 26, 2015. <http://www.informationweek.com/cloud/infrastructure-as-a-service/bny-mellon-transforms-it-one-step-at-a-time/d/d-id/1322801>
- 4 IBM internal case
- 5 IBM internal case
- 6 IBM internal case
- 7 "nViso: Helping financial advisors understand their clients' true financial needs with emotional intelligence." IBM Case Studies. <http://ecc.ibm.com/case-study/us-en/ECCF-CDC12366USEN>. "nViso and IBM Help the Swiss LINK Institute Measure Consumer Sentiment in the Cloud." PRNewsWire. March 01, 2012. <http://www.prnewswire.com/news-releases/nviso-and-ibm-help-the-swiss-link-institute-measure-consumer-sentiment-in-the-cloud-141021823.html>; "Understanding the impact of consumer emotions in financial decisions." EmotionAdvisor. 2013. <http://emotionadvisor.com/assets/media/nviso-case-study-bnz-final.pdf>
- 8 IBM internal case

-
- 9 "Fintech payment startup PayKey raises \$6 million in Series A funding." SantanderInnoventure., November 22, 2016. <http://santanderinnoventures.com/fintech-payment-startup-paykey-raises-6-million-in-series-a-funding/>; "Online working capital solution to give UK SMEs access to same day funding." SantanderInnoventures. April 4, 2016. <http://santanderinnoventures.com/online-working-capital-solution-to-give-uk-smes-access-to-same-day-funding/>; "Santander InnoVentures invests in Tradeshift." Santander Innoventures. December 10, 2016. <http://santanderinnoventures.com/santander-innoventures-invests-in-tradeshift/>; "Elliptic Secures \$5m Funding from Santander et al to Police Bitcoin." Finance Magnates. March 21, 2016. <http://www.financemagnates.com/cryptocurrency/news/elliptic-secures-5m-funding-santander-et-al-police-bitcoin/>; "Santander InnoVentures secures further USD 100 million for fintech investment." SantanderInnoventures. July 18, 2016. <http://santanderinnoventures.com/santander-innoventures-secures-further-usd-100-million-for-fintech-investment/>
 - 10 IBM internal case
 - 11 "Driving faster innovation in banking and customer services with IBM z Systems." IBM Case Studies. September 15, 2016., <https://ecc.ibm.com/case-study/us-en/ECCF-ZSC03336USEN#>
 - 12 "Building an API ecosystem to enhance service and expand market reach." IBM Case Studies. November 7, 2016. <http://ecc.ibm.com/case-study/us-en/ECCF-BXC12346USEN>; "YES BANK Implements Multi-Nodal Blockchain Solution in India." Yes Bank website. January 3, 2017. <https://www.yesbank.in/media/press-releases/fy-2016-17/yes-bank-implements-multi-nodal-blockchain-solution-in-india>
 - 13 "Reinventing RBC: Royal Bank of Canada's Bruce Ross." Waterstechnology. August 1, 2016. <http://www.waterstechnology.com/waters/feature/2466532/reinventing-rbc-royal-bank-of-canadas-bruce-ross>

© Copyright IBM Corporation 2017

IBM Corporation
Route 100
Somers, NY 10589

Produced in the United States of America
April 2017

IBM, the IBM logo, ibm.com and Watson are trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the web at "Copyright and trademark information" at: ibm.com/legal/copytrade.shtml.

This document is current as of the initial date of publication and may be changed by IBM at any time. Not all offerings are available in every country in which IBM operates.

THE INFORMATION IN THIS DOCUMENT IS PROVIDED "AS IS" WITHOUT ANY WARRANTY, EXPRESS OR IMPLIED, INCLUDING WITHOUT ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND ANY WARRANTY OR CONDITION OF NON-INFRINGEMENT. IBM products are warranted according to the terms and conditions of the agreements under which they are provided.

This report is intended for general guidance only. It is not intended to be a substitute for detailed research or the exercise of professional judgment. IBM shall not be responsible for any loss whatsoever sustained by any organization or person who relies on this publication.

The data used in this report may be derived from third-party sources and IBM does not independently verify, validate or audit such data. The results from the use of such data are provided on an "as is" basis and IBM makes no representations or warranties, express or implied.

GBE03825USEN-00

