

How Technology Will Shape the Bank of the Future

Emerging technologies – from cloud computing and IoT to biometric authentications and blockchain – are revolutionizing the banking industry. We explore how banks are implementing these technologies today and what the future holds for banking technology.

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EXECUTIVE SUMMARY

The banking industry is on the verge of a technology revolution. Security upgrades, data center modernization, and cloud computing deployments lead the list of technology implementations currently underway as banks move to develop the systems architecture needed for a rapid, ongoing digital transformation. Within five years, most banks expect to have commercial implementations in nearly every major category of emerging technology, including fintech innovations such as mobile savings apps and online lending, APIs/open banking, artificial intelligence (AI), biometric authentication, blockchain, and investment in IoT technologies.

To develop a detailed picture of the coming transformation, VMware commissioned SourceMedia Research/*American Banker* to survey bank professionals about:

- Which emerging technologies are gaining the most traction and how banks are sequencing tech deployments over one-, three-, and five-year horizons
- What forces and objectives are driving adoption of emerging technologies and how much impact bankers expect different technologies to have in transforming their industry over one-, three-, and five-year horizons
- What bankers view as the primary obstacles to adoption and implementation, and what they expect from technology providers

Some key findings from the study include:

- IT security upgrades and programs to modernize systems infrastructure and data centers are currently underway at more than 50% of respondents’ institutions
- Among bankers at institutions currently considering, piloting, or implementing security upgrades, data center modernization programs, cloud computing deployments, and fintech innovations, at least 73% expect the initiatives to have a moderate to high impact over the next 12 months; at least 82% expect the initiatives to have a moderate to high impact in five years
- 78% of respondents say that AI voice-based banking has the potential to be transformative in retail banking; about a third say AI voice-based banking could be transformative in commercial banking

Research also shows that some emerging technologies may take a few years to mature, but bankers expect that all of them will make a substantial imprint on the industry within five years, and anticipated deployments are widespread.

And while “the bank of the future” is inevitable, such a fast and wholesale transformation will be a heavy lift — and banks expect to lean on technology vendors for help accomplishing it.



More than 50% of respondents say IT security upgrades and programs to modernize systems infrastructure and data centers are underway at their institutions; about 42% say cloud computing initiatives are underway.

THE ROADMAP FOR DIGITAL TRANSFORMATION

The depth of the digital transformation that is taking hold in banking becomes clear from shifts in the way banks describe their basic mission. Respondents most frequently describe their top business focus over the next year as “growing the bank’s profile and relationships in the communities it serves.” But over a three-year horizon, the top business focus becomes “integrating digital and physical channels.” And in five years, most bankers say their focus will simply be on “becoming a digital leader.”

The sequence echoes visions of the bank of the future that professionals articulate in verbatim responses. Bankers frequently predict that virtual platforms will largely displace traditional branches as increasingly sophisticated mobile and AI technology helps customers conduct business whenever they want, from whatever device they prefer. “The bank of the future is a personalized financial companion that is always there for you,” one executive says.

Respondents also expect:

- Banks to build data architecture that enables frictionless flows of information and “real-time electronic payments”
- APIs to open banks up to rapid, continuous innovation
- Banks to be “ready whenever and wherever our customers need us, sometimes before they even know it”

Banks are laying the groundwork for these changes quickly: More than half of respondents say IT security upgrades and programs to modernize systems infrastructure and data centers are currently underway at their institutions. About 42% say cloud computing initiatives are currently underway.

Further, at least 75% of professionals at banks with \$100 billion or more in assets say their institutions plan to commercially implement new technology in the following arenas within a five-year horizon:

- security
- data center
- cloud computing
- fintech
- compliance (where AI can help with anti-money laundering responsibilities)
- API/open banking
- biometric authentication

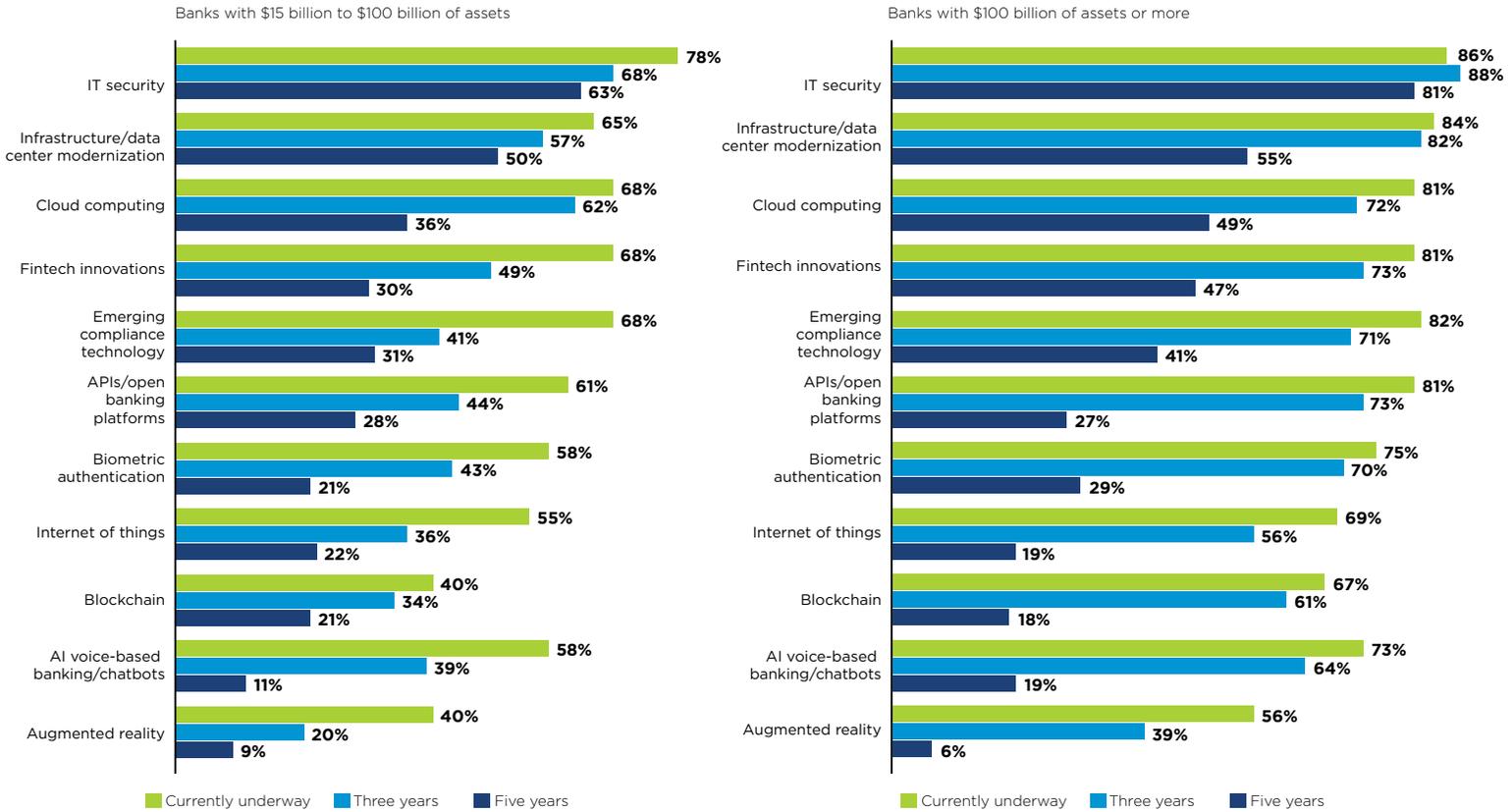
More than 50% say the same about:

- the “internet of things”
- blockchain
- AI-powered customer-service innovations
- augmented reality technology



Figure 1: Emerging Technology Deployment

Banks planning to commercially implement emerging technology by category and time frame



Source: VMware Emerging Bank Technology, SourceMedia Research, July 2017

The rollout schedule at smaller institutions is a bit less aggressive, but still demonstrates broad commitment to emerging technologies. At least 40% of professionals at banks with \$15 billion to less than \$100 billion in assets say their institutions will commercially implement technology over a five-year horizon in every category as shown in Figure 1.

Indeed, an all-of-the-above description of the bank of the future provided by one respondent encapsulates the direction the industry is taking: “Omnichannel, instant decisioning, biometric authentication, omniproduct, omniscurrency, open API, virtual interaction, 24-hour customer service availability, high efficiency, maintain margins through increased security, lower unit costs, and intelligent management of customer assets for the benefit of the customer.”

ASSESSING EMERGING TECH BY EXPECTED TRANSFORMATIONAL IMPACT

Banks are pushing forward with fintech, API, the internet of things, artificial intelligence, and augmented reality technologies primarily to transform the way they engage with customers (see Figure 2). Respondents at institutions currently considering, piloting or, implementing such technologies name factors such as the desire to improve customer experience and target specific customer segments — millennials, for example — as top drivers of adoption.



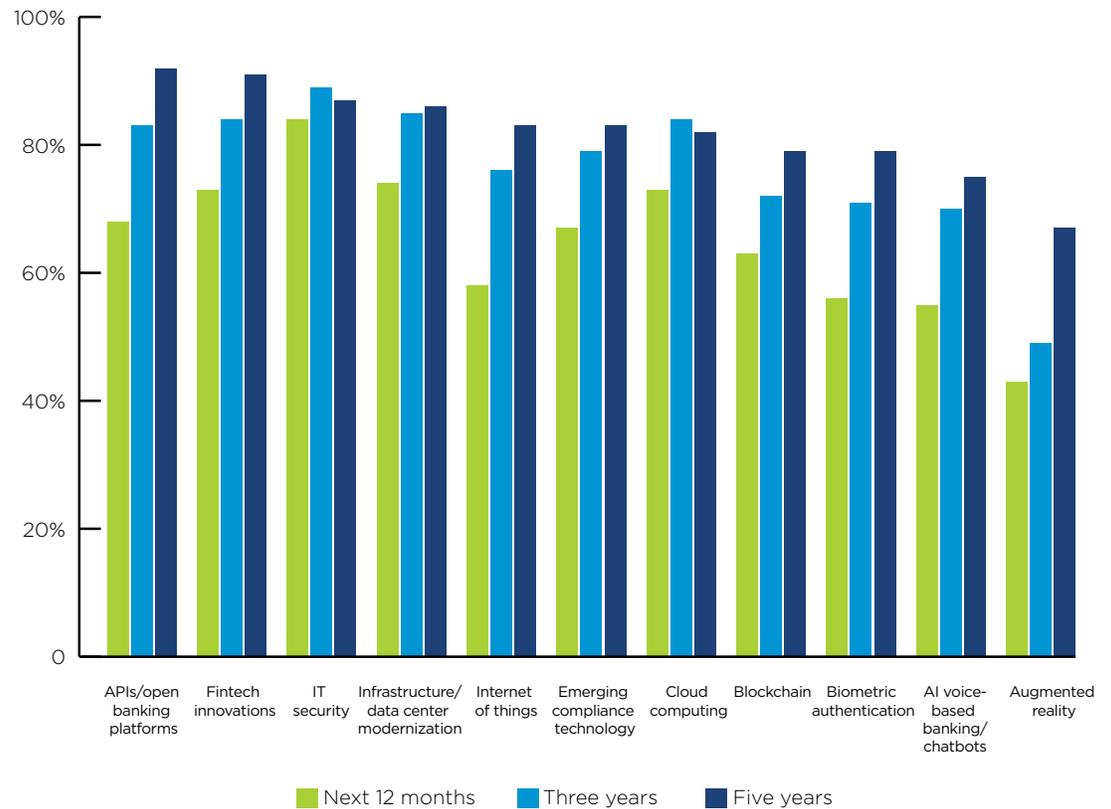
Bankers cite IT infrastructure modernization as a key to transformation across the board when asked to identify the most potentially transformative technologies in retail banking, payments, commercial banking, lending, and investment banking.

Similarly, security imperatives are driving adoption of technologies such as biometric authentication and blockchain. Meanwhile banks with data center modernization and cloud computing programs are seeking cost optimization and scalability. The changes are designed to make banks more nimble, agile and responsive to changing business needs and automate internal processes for better efficiencies.

Bankers anticipate that some technologies will also have an effect across business lines. For example, 78% of respondents say that AI voice-based banking has the potential to be transformative in retail banking and about a third say AI voice-based banking could be transformative in commercial banking, too.

Figure 2: Transformational Impact by Emerging Tech Category

Respondents at banks currently considering, piloting or implementing the technology who said it would have a moderate or high impact



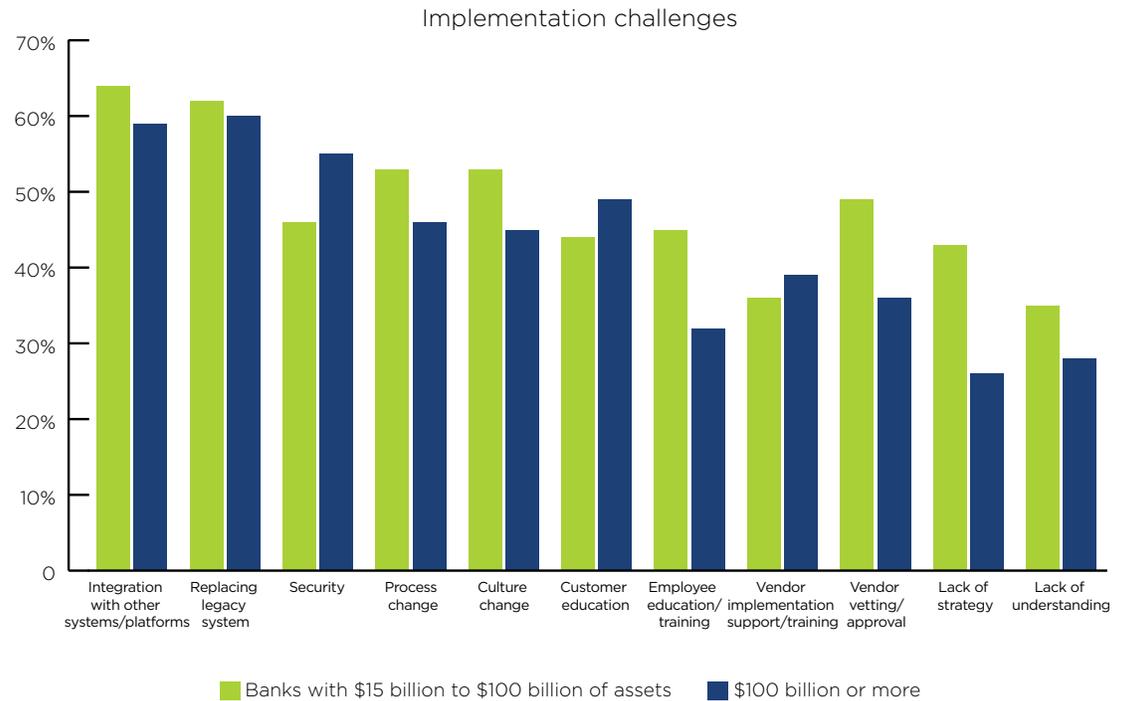
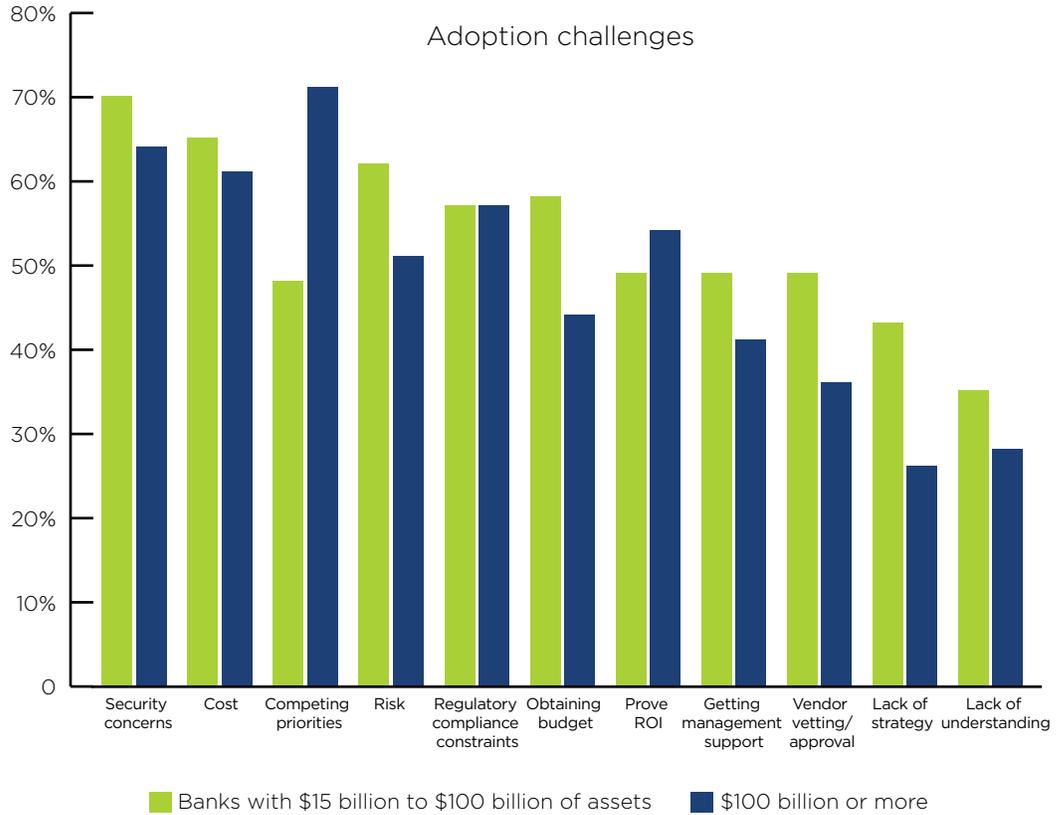
Source: VMware Emerging Bank Technology, SourceMedia Research, July 2017

Bankers see IT infrastructure modernization as a key to transformation across the board, naming it second or third most frequently when asked to identify the most potentially transformative technologies in retail banking, payments, commercial banking, lending, and investment banking. Overall, respondents believe that every category of emerging technology promises to transform their industry over time. Among bankers at institutions currently considering, piloting, or implementing security upgrades, data center modernization programs, cloud computing deployments, and fintech innovations, at least 73% expect the initiatives to



Figure 3: Challenges to Technology Adoption and Implementation

Respondents who said each factor was a major challenge



Source: VMware Emerging Bank Technology, SourceMedia Research, July 2017



Bankers are looking for technology providers with a strong vision and want a relationship that is more partnership than one of buying product.

have a moderate to high impact over the next 12 months, and at least 82% expect the initiatives to have a moderate to high impact in five years.

Fewer professionals anticipate strong impacts from other emerging tech categories over the short term, but they are confident these areas will gain traction: at least 67% expect emerging technology to have a moderate to high impact in five years in every category.

CHALLENGES TO ADOPTION AND WHAT BANKS WANT FROM TECHNOLOGY PROVIDERS

Security and cost concerns top banks' list of major obstacles to adopting new technology (see Figure 3). Giant banks also struggle with competing priorities, such as security, integration and legacy systems, relative to their midsize peers — 71% of respondents at institutions with \$100 billion or more in assets cite the issue as a major challenge, compared with 48% of respondents at institutions with \$15 billion to less than \$100 billion in assets. Conversely, midsize banks are more likely to be hindered by the risk inherent in adopting a transformational technology, with 62% citing it as a major obstacle compared with 51% at the largest banks.

The complexities of integrating new technologies into existing platforms and upgrading legacy systems are banks' top implementation challenges. In fact, 46% of professionals say legacy infrastructure has some impact on their institutions' ability to launch new products, and 42% say legacy infrastructure has a high impact. About half of bankers in the latter camp say their institutions are currently engaged in data center modernization and cloud computing projects to address the problem.

Bankers trying to navigate a digital revolution that is fast proceeding on many fronts — and sometimes reckoning with the prospect of bulldozing legacy systems — describe in verbatim responses their varied and broad-ranging needs for assistance from technology providers. Bankers expect concrete guidance about the development cycle for new capabilities and how to integrate them, strong arguments for return on investment, speed, and foresight. In short, they are looking for vendors with a strong vision and want a relationship that is more “partnership versus one of buying product.”

CONCLUSION

According to industry professionals, the bank of the future is here. Banks are already laying the groundwork, concentrating on data center modernization, and cloud computing to clear away legacy obstacles to further advances, and to complement efforts to defend against growing cybersecurity threats.

Within five years, majorities of professionals at banks with at least \$15 billion in assets expect their institutions to have commercially deployed emerging technologies in nearly every category, from AI and biometric authentication to blockchain. The scope and pace of anticipated adoption point to a revolution that will transform the industry.



METHODOLOGY

In June 2017, SourceMedia Research conducted an online survey among 166 respondents drawn from *American Banker* opt-in contacts to understand their current and future outlook for business and technology, and emerging technologies in banking. The survey sample consists of banking professionals at manager levels and above at banks with at least \$15 billion in assets.

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