New digital banking technologies and business models continue to emerge, but most banks have yet to realize their promise. Bank CIOs should look to Gartner's industry predictions for 2016 and beyond when creating a strategy for evaluating and prioritizing their digital investments.

Key Findings

- Despite the significant ongoing activity in financial technology — including banks acquiring startups and developing their own technology incubators — it is not clear that financial institutions are broadly prepared for digital banking.

- Digital banking strategies executed essentially as IT-centric channel replacement initiatives fail to deliver the transformation banks urgently require.

- The Internet of Things (IoT) offers the opportunity for services that engage financial institutions with nonhuman customers. But the IoT requires modern agile digital technology architecture and customer relationship strategies that existing banking systems and data analytics may not be able to support.

- Acquisition and investment in disrupter providers does not guarantee digital banking success. Bank CIOs must leverage them to transform banking, not just put a prettier face on it.

Recommendations

**Bank CIOs:**

- Work with the chief digital officer (CDO), chief financial officer (CFO) and chief marketing officer (CMO) to ensure that you are all involved in acquisition and partnership decisions, and to ensure they are aligned with their digital banking strategies.
- Become fully conversant in smart machine technology’s strengths and limitations. Focus on enabling accessibility and price competitiveness, because traditional opaque pricing policies will fail in this market.

- Expand the scope of any vendor evaluation for open unified banking platforms to include emerging startups, especially those whose architecture does not perpetuate legacy online and mobile banking channel application structures.

**Strategic Planning Assumptions**

By YE18, 65% of banks will acquire startups to support bimodal IT and innovation.

By YE20, 10% of all bank loans will be made to smart machines.

By 2019, 80% of financial institution boards will have less than two digital-savvy experts, and this deficiency will undermine bank financial performance.

By YE19, 25% of retail banks will use startup providers to replace legacy online and mobile banking systems.

By YE19, 30% of banks will fail to address core banking challenges, of which two-thirds will not be sustainable.

**Analysis**

**What You Need to Know**

Digital technology disrupters continued to emerge in 2015, with both startups and established technology providers introducing innovative business models, as well as innovative technologies. 
Banks themselves are expanding their technology initiatives in a broad range of ways. Gartner sees banks investing in emerging providers and other startups through corporate venture capital funds, partnering with startups, participating in accelerators and undertaking their own digital initial initiatives, including creating internal financial technology incubators. However, few of these initiatives have reached maturity, and even fewer have delivered on the business-critical promise of digital transformation. According to the 2015 Gartner CEO survey, only 24% of current bank revenue come from digital sources, and less than 1% from open banking initiatives (see “Highlights of the 2015 CEO Survey: Business Leaders Are Betting on Tech”).

Some new "digital banks" have emerged. Some legacy banks have created new digital brands, including Ally, Capital One 360, Connexus, eQ, GoBank, Hello bank, Uno-e Bank and WeBank. Several new digital banks — among them Atom Bank, Lintel Bank, Monese and Starling — have applied for licenses in the U.K. And new "digital first" banks have opened in Brazil (BankFacil), the U.S. (BankMobile), Germany and Austria (NUMBER26) and Serbia (Telenor banka) that offer mobile-based accounts. Telenor banka's digital-only operation in Serbia, for example, acquired 100,000 customers in its first year of operation. However, it is not yet clear how — or if — these banks will
offer any new digital banking services beyond low-cost versions of existing services via state-of-the-art mobile app design and customer experience. For example, although Telenor banka offered interest-free loans to customers who buy mobile phones from Telenor, the bank’s telecom parent company, Telenor Group, faces challenges in developing digital services based on new business models.

Many banks are focusing their digital initiatives on decreasing channel costs and improving operational efficiencies. These are worthwhile goals, given the high cost of online and mobile banking and the limited return on mobile banking investments. But in the age of digital business, they are not enough to make digital investments worthwhile, and neither is simply putting a prettier face on their existing operations.

Bank CIOs looking for ways to transform banking to enable new business processes and new revenue streams must look to truly transformative technologies, notably to IoT, to new vendor providers and to startups themselves. These technologies enable the bank CIO to support deep, fundamental changes in the way banks approach the services they offer and the customers they hope to acquire and retain. Comprehensive support for the IoT will actually prepare banks to handle the challenge of working with an entirely different kind of customer — the customer who is not human. CIOs cannot pursue digital banking initiatives without working closely with their boards of directors to increase and leverage their digital business expertise.

In today’s complex digital banking environment, trends and technologies cannot be considered in isolation from one another. For this reason, Gartner Banking and Investment Services Predicts for 2015 all reflect the fundamental interconnectedness of the changes impacting the industry.

Strategic Planning Assumptions

**Strategic Planning Assumption: By YE18, 65% of banks will acquire startups to support bimodal IT and innovation.**

*Analysis by:* Stessa Cohen

**Key Findings:**

- Type A financial institutions pursuing bimodal IT are aggressively and deliberately trying to adopt innovations early in the relevant Gartner’s Hype Cycles. These banks are prepared to accept the risks associated with early adoption, in return for the potential rewards.

- The acquisition of startups enables banks to test and rapidly adapt to digital requirements.

- Banks worldwide continue to acquire startups to gain the technology necessary for digital transformation.
Market Implications:

A series of acquisitions and partnerships clearly demonstrate banks’ and bank CIOs’ recognition of the business-critical importance of financial technology innovation. Among the recent examples of partnership:

- ING’s announcement of a partnership with Kabbage for small business loans in Spain
- Barclays Bank’s partnerships with Chainalysis (for bitcoin compliance) and Wave (for blockchain-based paperless trade finance processes)
- SpareBank 1’s acquisition of mCASH, a Norwegian mobile payment network that connects banks, merchants and consumers to a virtual mobile payment network that supports not only peer-to-peer and digital payments, but also physical and retail payments
- USAA’s participation in a $30 million Series A investment in the banking technology provider MX
- The $8 million Series B funding in Moven by SBT Venture Capital, whose main investor is Sberbank
- The Australian bank Westpac’s participation in the Reinventure Fund, which has invested in Coinbase, a bitcoin wallet and platform
- Citi Ventures, an investment and innovation group within Citibank, taking part in a $40 million funding round for the big data firm Datameer

Banks have also acquired startups, and not just startups directly related to banking. Examples include:

- Silicon Valley Bank acquired Standard Treasury, a startup targeting commercial banking
- Capital One’s acquisition of Level Money, a millennial-oriented mobile financial management tool, and the design consultancy, Adaptive Path
- Commonwealth Bank of Australia’s acquiring Take Your Money Everywhere (TYME), a South African startup that develops digital banking platforms for banks and mobile network operators
- Banco Bilbao Vizcaya Argentaria’s (BBVA’s) acquisition of Spring Studio, a user experience and design firm; Madiva Soluciones, a big data company; and Simple, which provides a digital front end for banking services
- Fidelity Investments acquired eMoney Advisor, a wealth management software company

Bank CIOs can expect this trend to continue, with further direct acquisition of startups, as well as other partnership and investment activity. The primary CIO focus has been on developing online and mobile banking capabilities, with the bank at the center of a customer’s life. However, bank-related startups are aware that they can offer customers a more convenient and less expensive “means to an end.” This approach relies on offering technical capabilities (APIs, apps, functionality and connectivity) that support a broader customer use case — one that extends beyond simple financial services transactions. These digital ecosystems or “walled gardens” (for example, Alibaba and Alipay, MyBank, and Yuebao in China) promote both customer lock-in and traditional financial
service provider lockout. (Alibaba, through Alipay, for example, controls 82% of China’s online payments market.) Such ecosystems are often powered via extensive use of big data techniques and analytics accessing massive data pools (MyBank’s data pool exceeds 40 trillion retail customer records), leaving banks to play catchup in terms of understanding customer behavior, risk profiles and other critical information.

Bank CIOs that do not support acquisitions will fail to keep pace in innovation with their counterparts in the business. They will also fall behind in acquiring necessary intellectual property, talent and marketing capabilities that can be used to catapult digital initiatives from single projects into operations.

Recommendations:

Bank CIOs:

- Work with the CDO, CFO and CMO to ensure that you are involved in acquisition and partnership decisions, and that these decisions are aligned with their digital banking strategies.
- Create specific business and IT use cases that can be addressed with potential acquisitions and partnerships that demonstrate a link between revenue or return on investment and emerging providers' capabilities.
- Monitor emerging financial services and related startups to identify potential capabilities that address, fix or upgrade current business and IT pain points in the bank’s evolution toward digital banking.

Related Research:

"Digital Disrupters and Customer Demand Force Bank CIOs to Find New Sources of Innovation"

"Understanding Gartner’s Hype Cycles"

Strategic Planning Assumption: By YE20, 10% of all bank loans will be made to smart machines.

Analysis by: Alistair Newton

Key Findings:

- By 2020, close to 30 billion connected things will be in use across a wide range of industries, and the IoT will touch every role across the enterprise (see "Forecast: Internet of Things, Endpoints and Associated Services, Worldwide, 2014").
- The complexity and intelligence of these things is evolving. Increasing levels of machine intelligence are leading to the development of smart machines and autonomous businesses that are capable of making decisions locally (see "Agenda Overview for the Internet of Things, 2015").
As the IoT becomes more ubiquitous, the number of smart machines involved in the day-to-day lives of consumers and companies increases exponentially.

To operate effectively in their increasingly autonomous modes, these smart machines will need access to cash flow and liquidity.

With fully auditable, financial, operational and performance data, aligned with a legal status that will evolve as the IOT evolves, these smart machines — or "things" — will become good lending risks for banks, and autonomous lending to these nonhuman actors will consequently form an increasing proportion of banks' loan portfolios.

**Market Implications:**

Bank CIOs must prepare for business opportunities presented by banking relationships that will involve smart machine entities and force banks to overhaul their entire customer relationship and service propositions. This new type of customer will add to the CIO's challenges in understanding the requirements of human digital customers.

Smart machine actors in the IOT will make borrowing decisions based on very specific, quantifiable criteria. Notwithstanding that some original programing may instill a small degree of inefficiency, they will, in effect, make "perfect" or "near-perfect" financial decisions. There will be little room for bias associated with branding, and little or no loyalty in their financial relationships. Decisions will be made on the basis of financial return and ease of access to funds. Consequently, customer engagement, loyalty strategies and delivery technologies, and strategies that revolve around the assumption that banks interact with human customers will have to change.

Banks and financial services companies need to ask themselves: Are we ready for the implications of the first loan applications that drop onto our desks from a smart machine — a machine or thing that exists both as a physical and legal entity, that may have a traceable financial history and will be able to provide detailed performance projections for the future based on multiple verifiable data points? Bank CIOs will have to help their business colleagues gauge, measure and then manage the opportunities and threats presented by this emerging technology.

But lending to smart machines or things will only be the start. Lending and other bank services will extend beyond the first generation of smart machines. Smart machines will signal the move to autonomous businesses (see "When Smart Things Rule the World — Introducing Autonomous Business"). As with things, autonomous businesses will be good lending risks for banks, because they will also have fully auditable financial, operational and performance data, aligned with a legal status that will evolve as the IOT evolves. Moving forward, autonomous businesses will form an increasing proportion of banks' loan portfolios.

**Recommendations:**

**Bank CIOs:**

- Prepare your CEO, executive committee, board of directors and line-of-business colleagues to change your bank's strategic mindset to incorporate the idea that all banking relationships will...
involve smart machine entities. This requires that the bank entirely overhaul its customer relationship and service propositions. As the concept of lending to things — physical devices with sensors — morphs into lending to autonomous legal entities, these key stakeholders must be in sync. Otherwise, the bank will miss a significant opportunity to tap into this developing market opportunity.

- Focus on the key criterion for bank-to-smart-machine lending: accessibility. Allow for things to apply for loans at your institution. Traditional opaque pricing policies will fail in this market.

**Related Research:**

"Smart Machines See Major Breakthroughs After Decades of Failure"

"Maverick* Research: When Things Become People"

"When Smart Things Rule the World — Introducing Autonomous Business"

**By 2019, 80% of financial institution boards will have fewer than two digitally savvy experts, and this deficiency will undermine the bank's financial performance.**

**Analysis by:** David Furlonger

**Key Findings:**

- Research shows that corporate boards that have members with digital business expertise perform better: They have higher revenue, are 26% more profitable and have 12% higher market valuation.

- Most financial institutions lack the board-level digital knowledge and leadership necessary for digital banking transformation.

**Market Implications:**

Digital directors have significant expertise and experience in digital transformation through their own roles in digital companies or through digital roles in traditional companies. Research by both Russell Reynolds Associates and the Massachusetts Institute of Technology (MIT) (see "The Board, CEO and CIO Roles in Dealing With Digital Disruption" and "Working With Your Board on Digital Disruption?") indicate that corporate boards that have members with digital business expertise perform better: They have higher revenue, are 26% more profitable and have 12% higher market valuation.

Most banks today lack boards of directors that can steer them toward digital banking transformation. According to Russell Reynolds Associates, digital board members will be critical to corporate digital transformation. According Russell Reynolds’ 2014 survey of board directors, only 13% of financial services firms have even one digital director on the board and fewer than 5% have two such board members (see "2014 Digital Board Director Study").
Banks whose boardrooms lack adequate knowledge about core digital technologies used in and by the bank and by the bank's customers have a decreased ability to adequately manage operational risk. Because bank board members typically lack digital business expertise, they do not understand the importance of digital banking transformation strategies to the business. They tend to hold the misconception that "digital" is only a technology capability, and fail to recognize digital technology's ability to impact and transform the culture, revenue models, organizational processes and market opportunities. Such boards will be more concerned about the potential for loss than about the potential opportunities made possible by digital banking transformation, and the potential for loss (for example, in the context of developing social profiles, or in terms of cybersecurity fragilities) will be poorly understood. Thus, boards without sufficient digital business expertise will not only inhibit their banks' ability to capture opportunities, but also contribute to impaired performance.

Bank boards that lack digitally savvy members will relegate CIOs' digital banking actions to a series of one-off tactical initiatives as funding becomes hard to obtain or has to be carved out of existing IT budgets. Their banks will not take an enterprise approach to what is becoming a broad ecosystem, leading to customer dissatisfaction. Dissatisfied customers who have greater economies of access will cause retention challenges and drive the emergence of financial technology disrupters. While specific digital projects may be successful in and of themselves, they may not be of sufficient scale to receive board-level attention, and this will further reinforce the challenges of transformational change.

**Recommendations:**

**Bank CIOs:**

- Prepare a business-centric communication for the next board meeting that clearly explains digital technology in terms of its direct impact on the business, revenue models and strategic market opportunities, as well as technology capabilities.

- Seek buy-in from the board on sustainable funding for ongoing digital transformation tied to the CEO’s mission and strategy.

- Prepare a detailed summary of digital risks that the institution faces today and is likely to face in the future (for example, from a cybersecurity, data management or social business standpoint). Work with the chief risk officer to create estimates of the potential impact from digital risk management breaches. Having a common language to discuss digital concepts and meanings is often uncommon, inhibiting CIO execution and confusing expected outcomes.

- Identify board members who may have roles that include digital aspects. Offer to mentor one board member per year on digital technology and its business implications for the bank.

**Related Research:**

"2015 CEO Survey: Financial Services Industry Counts on Digital to Compete Against Upstarts"
Strategic Planning Assumption: By YE19, 25% of retail banks will use startup providers to replace legacy online and mobile banking systems.

*Analysis by:* Stessa Cohen

**Key Findings:**

- Retail bank CIOs want to maintain existing transaction-centric mobile and online banking capabilities as they mature and evolve their digital banking strategies.
- Many retail bank CIOs worldwide want to reduce the operating costs of traditional online banking and mobile banking applications.
- Many bank CIOs and their senior personnel, as well as their business counterparts, are frustrated with incumbent vendors that are slow to update customer experience and functionality to reflect the capabilities customers have come to expect in retail and other industries.

**Market Implications:**

An incumbent bank niche provider typically has a longstanding relationship with a retail bank, possesses deep banking expertise, and often has deployed the bank’s core banking and other bank solutions. However, many of these incumbent providers have failed to keep up with the customer experience and functionality capabilities bank customers have come to expect, especially from their interactions in retail and other industries. For this reason, banks cannot offer customers easy-to-use and browser-based applications that reduce the number of clicks, taps or searches required to accomplish a simple banking task. Furthermore, upgrading or replacing these applications has taken significant commitments in time (at least one year, and often two or three) and full-time personnel. By the time these projects have been completed, consumer needs have typically changed, new devices have come on the market, and new user experience and design trends have emerged.

New, open, unified digital banking platform providers (such as Backbase, Crealogix, Fidor TecS, Five Degrees, D3 Banking, MX, Technisys, Finanteq and ebankIT) offer new technologies in which transactions are not aligned with a specific channel and can be delivered in an appropriate customer experience as determined by the specific device to which it is delivered. They may also provide tools for developing new capabilities built on bank transactions, data and third-party partners. The availability of APIs enables banks to easily incorporate capabilities offered by smaller apps, whether developed in-house, by third parties or by cloud-based bank-related startups. For all these reasons, Gartner expects an increasing number of banks to look to startups, rather than their incumbent banking system providers, for innovation.
Recommendations:

Bank CIOs:

- Include emerging, open, unified banking platform startups when evaluating providers for single-platform delivery of traditional browser, mobile browser, apps or widget technologies.
- When upgrading or replacing online and mobile banking solutions, evaluate digital banking providers whose architecture supports traditional and mobile browsers, as well as native and hybrid mobile technologies.
- Leverage new digital banking platforms to update their delivery architecture to separate customer-facing presentation from bank transactions and to support delivery of functionality to any device or browser.
- Consult with the CMO regarding digital marketing strategy and integration with the digital banking platform.

Related Research:

"Hype Cycle for Digital Banking Transformation, 2015"

"Digital Disrupters and Customer Demand Force Bank CIOs to Find New Sources of Innovation"

"Gartner's Digital Banking Taxonomy"

"How to Develop Digital Banking That Delivers More Than Multichannel Integration"

Strategic Planning Assumption: By YE19, 30% of banks will fail to address core banking challenges, of which two-thirds will not be sustainable.

Analysis by: Don Free

Key Findings:

- Banks are developing digital banking strategies that focus primarily on customer-facing channels, rather than on modernizing or replacing legacy core banking systems.
- The long development cycles associated with legacy core banking systems are incompatible with the agility and fast time to market required for digital banking.
- Core banking-system extensibility is key to enabling sustainable digital banking that addresses emerging customer requirements.

Market Implications:

Digital bank strategists who ignore core banking systems, however well-intentioned they may be, do so at their peril. Core systems serve as a foundational element for digital banking, and the ongoing extensibility of the core is critical to enabling business-critical digital transformation. Early
investments in API- and channel-driven strategies certainly have the potential to deliver first-mover advantage, but maintaining such a position will require a deeper commitment. Fully leveraging digital banking initiatives for delivering new customer products and services means the CIO must use digital technology to unlock discrete functionality, increase accessibility and transform the definition of their core banking technology.

Bank CIOs who take a holistic approach to digital banking strategy will look more broadly at the role and implications of their core banking technology. Core banking attributes of granular component-orientation, standards-based interoperability and ecosystem-friendly access to financial technology innovations mark the gold standard that digital banking strategies should strive for.

**Recommendations:**

**Bank CIOs:**

- Revisit the bank’s digital banking strategy to assess the role of core banking technology and, if necessary, ensure that corrective action for modernizing or replacement is on the IT roadmap.
- Assess the bank’s core banking critical characteristics of component granularity and interoperability.

**Related Research:**

"Critical Capabilities for International Retail Core Banking"

"Hype Cycle for Open Banking APIs, Apps and App Stores, 2015"

**A Look Back**

*In response to your requests, we are taking a look back at some key predictions from previous years. We have intentionally selected predictions from opposite ends of the scale — one where we were wholly or largely on target, as well as one we missed.*

**On Target: 2015 Prediction** — Through YE17, 90% of central banks worldwide will use regulatory obstacles to prevent public cloud deployment of banks’ core banking systems.

*Analysis by:* Don Free

As the headlines continue to be filled with stories of computer hacking and other data security failures, caution is trumping agility, and central banks worldwide are remaining cautious about banks’ usage of public cloud infrastructure. Recent communications from the Bank of England and Australia's regulatory authority corroborate this point of view. The outlook for this prediction remains on course through 2017, and this ongoing trend could limit the benefits of financial technology ecosystem innovation.

**Missed: 2013 Prediction** — By 2015, nontraditional money creation and exchange will enable 125 million more people to participate in the mainstream global economy.
Analysis by: Kristin Moyer

Gartner missed this prediction, not because we were wrong, but because it was not aggressive enough. According to the World Bank 2014 Global Findex, (see "Massive Drop in Number of Unbanked, says New Report"), the number of "unbanked" individuals dropped 20% to 2 billion adults. The number of new people who now have savings accounts or other financial accounts through mobile operators, banks and other types of financial institutions grew not by 125 million, but by 700 million.

Gartner Recommended Reading

Some documents may not be available as part of your current Gartner subscription.

"Hype Cycle for Digital Banking Transformation, 2015"
"Critical Capabilities for International Retail Core Banking"
"2015 CEO Survey: Financial Services Industry Counts on Digital to Compete Against Upstarts"
"Maverick* Research: When Things Become People"
"Digital Disrupters and Customer Demand Force Bank CIOs to Find New Sources of Innovation"

More on This Topic

This is part of two in-depth collections of research. See the collections:

- Predicts 2016: Algorithms Take Digital Business to the Next Level
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