WILLIAM MILLS AGENCY

2016

A collection of research, observations and articles regarding technology solutions and services that U.S. bankers will buy in 2016 and the changing financial industry landscape.

Dear Readers,

The expectations of customers and how they interact with their banks is changing faster than at any time in my career. Even the use of the term “fintech” has changed, not only to reflect technology companies that support financial institutions and payments, but to also describe competition from non-traditional companies looking to take a piece of business from banks.

2015 seemed to be the year of the technology lab, which I see as businesses attempting new things and moving innovation forward. While many young companies complain about access to data held by more established companies, the discussions around collaboration and merging data for new insights is increasing and likely key to helping FIs run better businesses.

Bankers as Buyers has always been written to pull together information, research and opinions about what the banking industry will buy in the coming year, but this report is a little different. We’ve focused more of our effort to reflect the “invisible” customer and the trend of doing business with people we don’t see. Mobile banking or even digital banking are too narrow terms to reflect the shift required of our industry. Every area of the FI needs to consider how to make better decisions, improve services, make faster decisions, address compliance, use data, market services, increase efficiency, reduce fraud and so on, all while doing more with less and typically having less face-time with customers.

Most organizations cannot just spend their way to a new operational state; true innovation also requires a willingness to change.

This report is greatly enhanced by the contributions of:

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Brett King
CCG Catayst – Paul Schaus
Celent – Bob Meara
Coppermine Advisors – Mike Nicastro
Crone Consulting LLC – Richard Crone and Heidi Liebenguth
CSI – Steve DuPerrieu
D3 Banking – Michael Carter
Early Warning – Lou Anne Alexander and David Barnhardt
FI Navigator – Steve Cotton
FIS – Peter Gordon
FMSI
Forrester Research
Glenbrook Partners
GRO Solutions – Paul Mackowick
i7 Strategies – David Peterson

IDC Financial Insights
Jack Henry & Assoc. – Wade Arnold
Javelin Strategy & Research – James Van Dyke
Kasasa – Marty Sunde
KPMG
Malauzai Software, Inc. – Robb Gaynor
McKinsey & Company
nCino – Pierre Naudé
Pew Research Center
Prairie Cloudware – Doug Parr
RetailNext
RLR Management Consulting – Mitch Razook, Ruth Razook
Sawyers & Jacobs LLC – Jimmy Sawyers
The Financial Brand
The New York Times
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I hope 2016 is an exceptional year for you and your company,

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Note: This report includes some agency clients

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I. Introduction

"Banking as we've known it is changing," said Paul Schaus, CEO and founder of CCG Catalyst. "Ten years from now, going to the branch for a transaction will be nothing more than a fond memory; Millennials will be the largest part of the workforce; and the Baby Boomers all will have retired. A bank a day is disappearing. In the next five years, we will be down to 4,500 banks."

The signals of change are clear:

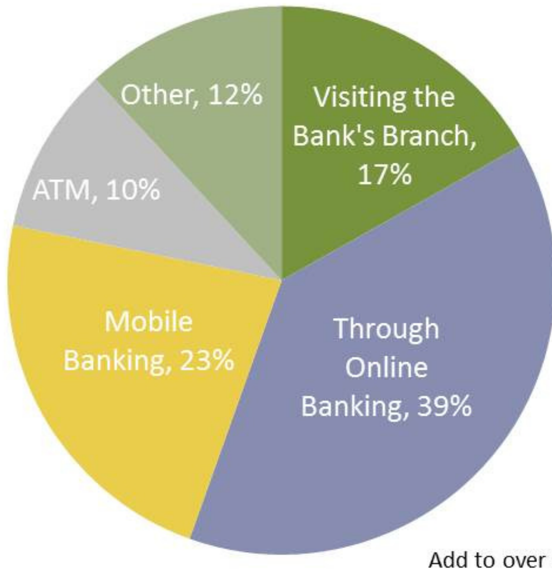
- Branch transactions at community banks and credit unions have dropped 45.3 percent since 1992, according to FMSI, with the steepest part of the decline in the last five years as mobile has become intricately woven into the fabric of banking. Larger banks have seen similar declines;
- In the United Kingdom, an Ernst & Young/British Banking Association study shows that customers used mobile devices to check their current accounts a projected 895 million times in 2015, more than the 705 million branch interactions. By 2020 the study forecasts that customers will use their mobile to manage their current account 2.3 billion times – more than Internet, branch and telephone banking put together;
- Mobile banking usage is expected to more than double over the next four years, from 800 million people to 1.8 billion, according to a KMPG/UBS study; and
- The U.S. banking system reached an important crossover point where the number of weekly mobile bankers now equaled the number of weekly branch bankers, Javelin Strategy & Research reported in May of 2015. "Mobile first" consumers – that is, those who primarily use a mobile device to access their checking account at their primary banks are almost one in four (23 percent).

"Bank tellers will be the telegraph operators of 21st century when we look back in 100 years, the most-impacted job," Brett King, founder of mobile banking app Moven, said at the late spring Exponential Finance conference. "The biggest banks in the world in 2025 will be technology companies, and banks that grew through branch acquisitions in the '80s and '90s, that grew by physical bank presence, will have a real problem."

Much of the concern over banks' ability to connect with remote customers centers around the Millennials who have surpassed Baby Boomers in sheer numbers and as a percentage of the workforce, according to Pew Research Center. As their earning power increases and as Millennials start receiving inheritances, they will start dominating in terms of earning power and overall wealth as well.

Almost 1 in 4 Consumers Is Mobile First

(Percent of U.S. consumers who access their checking account at their primary bank)



Add to over 100% due to rounding.

Source: Javelin Strategy & Research

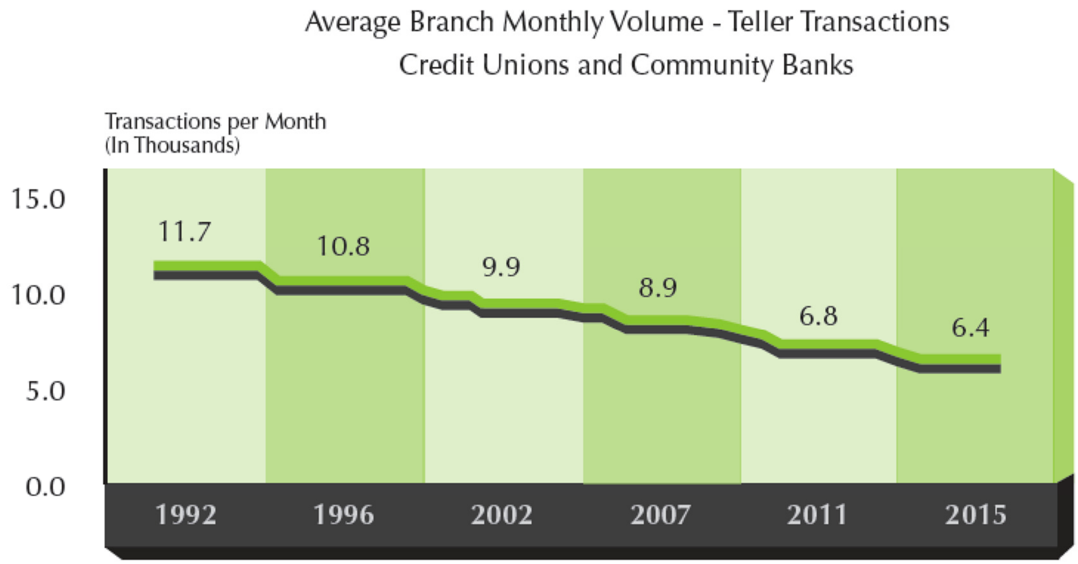
Millennials also prefer self-service, a trend that started more than a generation earlier.

“The trend toward self-service started several decades ago with the advent of the ATM,” said Robb Gaynor, founder and chief product officer of Malauzai Software, Inc. “People like self-service and we will see it grow substantially in 2016.”

“Much of the digital transformation has to do with how banks capture Millennials and provide the technology and the personal service that they expect,” added Ruth Razook, founder and CEO of RLR Management Consulting.

The financial services industry spent $114 billion worldwide on mobility, cloud, and big data and analytics technologies out of a total worldwide financial services IT spend of $455 billion, or about 25 percent of their IT budgets, according to IDC Financial Services, which projects the figure will increase almost 30 percent by 2019.

More than ever before, today’s financial institutions need to prospect for, acquire, retain and grow customers that they rarely, if ever, see. The financial institutions that fail to do so are not likely to survive to see 2020.



Source: FMSI

II. Customer Engagement: The Basics

"Financial institutions that want to monetize the digital channel must focus on improving the customer experience and engagement," said Wade Arnold, managing director at Jack Henry & Associates. "The industry is converting its digital channels from a self-service strategy to a focus on the user experience. Digital spot solutions must be consolidated; bill pay, online banking, PFM all need to be seamless. Companies like Amazon continue to set a high bar, and that is the bar that all digital engagements are measured against."

Customer engagement through digital involves taking the customer through the purchasing journey, from initial investigation through the decision to purchase and follow-up. This means engaging the customer with products, services, marketing messages and content of interest to the customer, building trust and an ongoing dialogue. The trust and dialogue are the keys to ongoing sales, not the proximity that had been the strength of the branch networks.

Arnold added, "The proximity that will matter most is how close and convenient a bank is to consumers' digital lives. Financial institutions that engage and add value to consumers' everyday needs will find themselves winning and retaining market share."

To engage today's customers, financial institutions must solve customer's financial issues, said David Peterson, founder and chief strategic officer of i7 Strategies. "Ernst & Young looked at what caused advocacy. When they had a financial problem and the bank was able to solve it, it created advocacy for them."

So banks need to invest in technologies that enable them to easily solve customer problems, from digital chat to systems that enable customer service agents to push electronic documents and other information to customers and to scheduling software that set appointments with loan officers and similar product experts. Peterson likens it to Apple's Genius Bar. If someone has an issue with an Apple product, he or she makes an appointment with a "genius" to get the problem resolved.

"Banks need to be able to problem solve," Peterson says. There is little difference in product and service pricing between financial institutions, so customers will be loyal to banks that solve their problems.

Peterson adds that online chat offers a problem solving technology that few banks have yet to use effectively.

A. Analytics

Prudent use of analytics will enable banks to anticipate the financial needs of customers or prospects, Peterson adds. Banks can track a person's navigation through a bank's site, combine that with demographic and other data on file as well as third-party information to intelligently serve up ads about bank products and services when a customer is online.

Banks can also partner with local merchants to mine information from POS transactions that can benefit the businesses as well as the financial institution. For example, Spain's BBVA aggregated all client data into a single view, and combined that with POS and ATM data collected from across Spain to assign clients attributes based on their lifestyle and what they do. For example, if they go to ATMs near soccer stadiums on game days, the bank learns what teams they support and can make appropriate offers, like a co-branded credit card.

The wealth of information banks hold internally and have easy access to externally enables them to segment data down to very granular levels, said Michael Carter, chief marketing officer of D3 Banking. But most banks fail to use the data properly.

"Provide me with information for a 57-year-old male, not someone looking for his first house," Carter mused. "If you are competing broadly, data is your only friend."

Banks still have much of that data in siloed systems. For truly beneficial analytics, banks need to gather and analyze data across multiple systems to make relevant offers and to properly handle customer complaints and financial concerns. "Otherwise you have what Javelin Strategy & Research analyst Mark Schwanhausser calls 'silent churn,' the practice of slowly reducing relationships with a financial institution before closing the account entirely," said Carter.

Banks that fail to engage people through digital channels will lose their customers to upstart competitors like Moven and Ally Bank, Peterson says.

A bank's strategy needs to drive its data mining efforts, according to Schaus. "Determine what you are trying to achieve and what you need to know to support that strategy. If you are focusing on the emerging wealthy, dig out that information." Focusing on consumers near retirement or on small business owners would dictate the bank concentrate on the analytics that would serve the needs of those customers.

"Analytics is going to be huge," said Mitch Razook, President & COO of RLR Management Consulting. Some of the largest banks have embraced analytics and are using them across the enterprise, but smaller financial institutions have yet to do much with the customer data available from customer accounts, POS transactions and from third-party sources. Razook says Google Analytics will provide much of the customer intelligence community banks need, while larger financial institutions can look at analytical tools offered by larger vendors.

B. Marketing technologies that incorporate analytics

"Keeping the brand in front of the buyer is essential," said Mike Nicastro, principal and CEO at Coppermine Advisors and director of Simsbury (Conn.) Bank.

"Consumers are conditioned by retailers to have relative online conversations; banks have to figure out how to do it," said Marty Sunde, president of Kasasa (formerly BancVue). "So banks need to use digital means to get to know customers much like they did in the largely bygone days of meeting customers at the local PTA meetings, soccer games and community events. Intimacy used to mean physical proximity, that is no longer the case." Today, the digital communication with customers means more than the proximity. Differentiating yourself means more than just using a database. You need to understand people with precision. You need to build their trust with the information that you are gathering about them."

However, simply building a large data store is only the first step.

"You have to change the mindset," said Sunde. "Analytics is a cerebral exercise. We have to look at how we are going to use more data sources to provide more insight so that we can provide a more relevant relationship."

Banks need to determine the data elements that they need to attract and grow their desired customer base, Sunde explained, and then deploy the necessary technologies to gather and analyze that data.

Banks need to use the information they collect to nurture prospects and customers along the decision path, Sunde says. So the data then drives marketing, content, site design and other elements that touch the customer.

III. Payments

"Don't expect payments to be less newsworthy or less complicated in 2016. Consumers are being offered new payment apps by retailers, tech firms and financial institutions," according to a report by Glenbrook Partners. "We can only guess at how many 'pay' programs will show up in the new year. Competitive pressures and investment priorities may further shift the makeup of the industry. What's to stop further consolidation along the lines of Global's acquisition of Heartland Payment Systems?"

“There is a battle going on,” added Peter Gordon, FIS senior vice president, payment strategy, enterprise product office. “Historically, people have preferred to pay through their financial institution. But, every year that is decreasing.”

Walmart Pay and the expected birth of Target Pay are a result of merchants wanting an even playing field in the payments arena, adds Gordon, who likens the current payments environment to the one shortly after the debut of MasterCard and Visa (formerly BankAmericard). With proper strategy and development, the banking industry could have had the profits now in the card company’s coffers.

A. Mobile Payments

Aite Group forecasts that, when combined with e-commerce growth, global online volume will reach nearly $6 trillion by 2020, with approximately 28 percent of that volume generated by mobile online transactions. Right now, mobile online payments are at the cusp of a growth curve that could eventually subsume any other payment path, but the complexity in this space obscures the way forward, the consulting firm says.

“2016 is the year for the bank-branded mobile wallet,” said Richard Crone, CEO of Crone Consulting LLC. “Mobile wallets are about more than just payments. They are a marketing and servicing platform.”

Marketing and servicing are drivers behind Chase Pay, which was unveiled at Money 2020, according to Crone. By providing the payment vehicle, Chase Pay will be able to interact with customers when they download the app, and continue with the dialogue as customers make purchases. Based on the shopping habits the Chase Pay platform will capture, Chase can offer customized offers. The rich data available to financial institutions with mobile wallets enables them to design and present customized mobile banking pages and to detect fraud as well.

“Chase Pay has a first-mover advantage, and they are dealing with the largest group of retailers, through MCX, which is providing preferential terms for Chase Pay,” said Crone.

As such, Chase Pay builds on some of the machine learning that the Android platform offers with Google. Other leaders in machine learning, according to Crone, are Amazon and PayPal.

Chase Pay also avoids the Visa/Mastercard/Discover interchange fees.

Chase Pay is not alone as a mobile payment disruptor. Just before the holiday shopping season, Walmart unveiled Walmart Pay. “It made no sense for a customer to use the Walmart app without payment functionality just to close it to make a payment via another app or a physical payment card, according to Crone. “Mobile payment is what holds that all together.”

Credit unions are staking their own claim in the mobile payments space through CUWallet, an industry-sponsored and branded venture.

Banks need to offer mobile payments within their own mobile banking applications or risk dilution of their brand identity, according to Schaus. “Banks are at a crossroads right now marketing their wallets and mobile banking apps. Consumers prefer that their mobile wallet be issued by the bank, not by Apple Pay or Android Pay."

To be successful, banks need to have their wallets and mobile banking as a single app, not as two separate offerings as most financial institutions have them today, several experts agree.

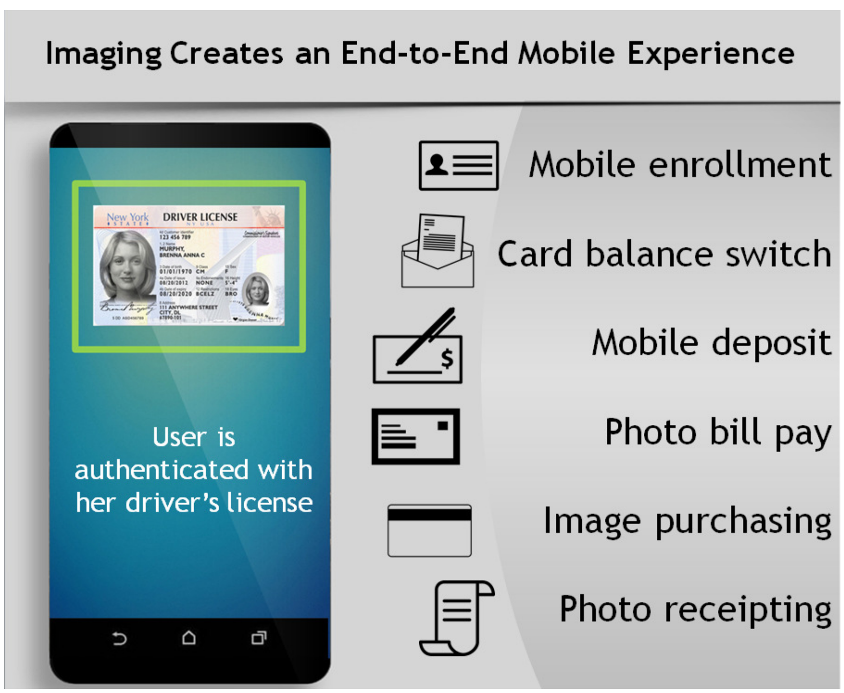
Much like they have done with credit cards, banks will need to compete with one another to ensure their mobile wallet is at the top of mind with the customer, who will likely carry multiple mobile wallets on his or her smartphone, said Doug Parr, chief revenue officer of Prairie Cloudware. So the mobile wallet offering will need to have full functionality for tap and pay, tokenization and person-to-person payments.

The ability to reach a customer service representative without leaving the app is another essential feature, but few are offering this capability today. Another key customer support feature, according to Javelin, is click-to-call capability, with 70 percent of top financial institutions providing this feature within the app or browser.

Mobile can provide banks with an important point of differentiation, Malauzai's Gaynor says. "People want apps that look good and modern. Banks want a solution that does more than just mobile payments. If banks are buying separate point solutions, they are paying too much."

Customers will gravitate to those financial institutions offering the mobile apps with the greatest functionality and ease of use, Gaynor adds. The best mobile apps will provide a variety of payment functions.

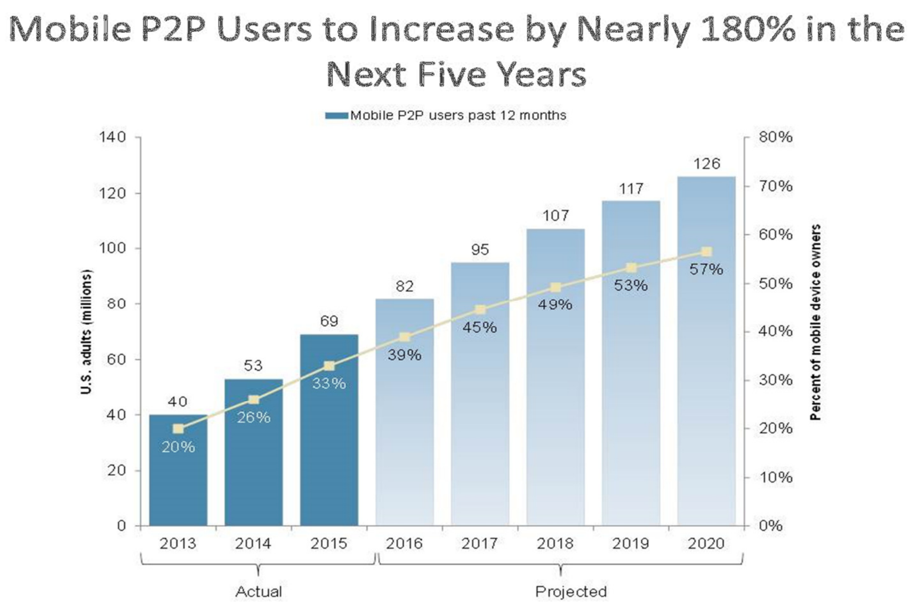
"Mobile offers banks a level playing field," Gaynor added. "It's constantly evolving."



Source: Javelin Strategy & Research

Forrester Research predicts mobile person-to-person payments will hit $17 billion by 2019, growing an average of 26 percent annually. That compares with Forrester's expectations of total U.S. mobile payments of $142 billion by that year.

Javelin forecasts mobile P2P users will grow from 69 million in 2015 to 126 million by 2020. By 2019, more than half of all mobile device owners will be using mobile P2P. The growth is attracting non-bank competitors including companies such as Facebook and Snapchat.



Source: Javelin Strategy & Research

By providing full functionality, full integration with mobile banking and by collaborating with merchant partners, banks will be able to attract and maintain customers within their mobile banking/mobile wallet offerings rather than going the route of Discover Financial Services, which is offering 10 percent cash back on purchases to recruit customers, Parr adds.

"Mobile will drive bank technology decisions in payments and in other areas," said Parr.

"There are 7 billion mobile devices, one nearly for everyone on the planet," said Parr. "A recent UN study has found that more people have mobile devices than have access to sanitary facilities. According to Pew Research Center, two-thirds of all Americans have smart phones; 60 percent use them for banking."

Beyond enabling payment, account information and other online activity, banks are empowering customers to use smartphones to preauthorize ATM cash withdrawals.

B. Faster Payments

The advent of mobile and an on-demand lifestyle has accelerated interest in real-time or near real-time payments.

The Federal Reserve, NACHA , Early Warning and The Clearing House are all working on plans for the development of fast, cheap, safe and ubiquitous payments.

"Consumers expect digital money to act more like physical cash than checks," said Gordon. Yet, under the current payment system, it can be a couple of days or more between the time of a transaction and the time the receiving banks have the related funds.

Five use cases comprising 12% of total payments could benefit from faster authorization and clearing, availability and/or settlement

Use Cases	Volume / % of total payments	Speed required
B2B[1] ad-hoc low value (e.g., just-in-time supplier payments)	11.1 billion / 5%	• Real-time authorization/clearing • Intra-day availability of funds • Intra-day interbank settlement
B2P ad-hoc high value (e.g., insurance claims, legal settlements)	NA	• Real-time authorization/clearing • Real-time availability of funds • Late-day interbank settlement[3]
P2P[2] transfers (e.g., rent repayment to roommates)	4.3 billion / 2%	• Real-time authorization/clearing • Real-time availability of funds • Late-day interbank settlement[3]
B2P ad-hoc low value (e.g., temporary employee wages)	3.2 billion / 1%	• Intra-day authorization/clearing • Intra-day availability of funds • Late-day interbank settlement
P2B ad-hoc, remote (e.g., emergency bill pay)	10.3 billion / 4%[3]	• Real-time authorization/clearing • Late-day availability of funds • Late-day interbank settlement[4]

1 Business includes Government;
2 Person to Person Commerce is considered a special case of Person to Business transactions; Person includes Underbanked and Unbanked;
3 Includes P2B ad hoc remote time delay (e.g., catalogue purchases);
4 Industry interviews suggest that, given real time authorization / clearing and/or real time availability of funds, settlement may need to be intra-day
SOURCE: McKinsey expert and industry interviews, public consultation responses; McKinsey Payments Map; Consumer Financial Life Survey

Source: McKinsey & Company

The U.K., Singapore and a handful of other countries already have real-time payments systems, but they were built before mobile and other payments were a reality. We will have to wait and see if any meaningful adoption within U.S. is built on commercially available platforms or if the industry can agree on open standards. Either way, the payment types will continue to evolve as will the need to handle them quickly and securely.

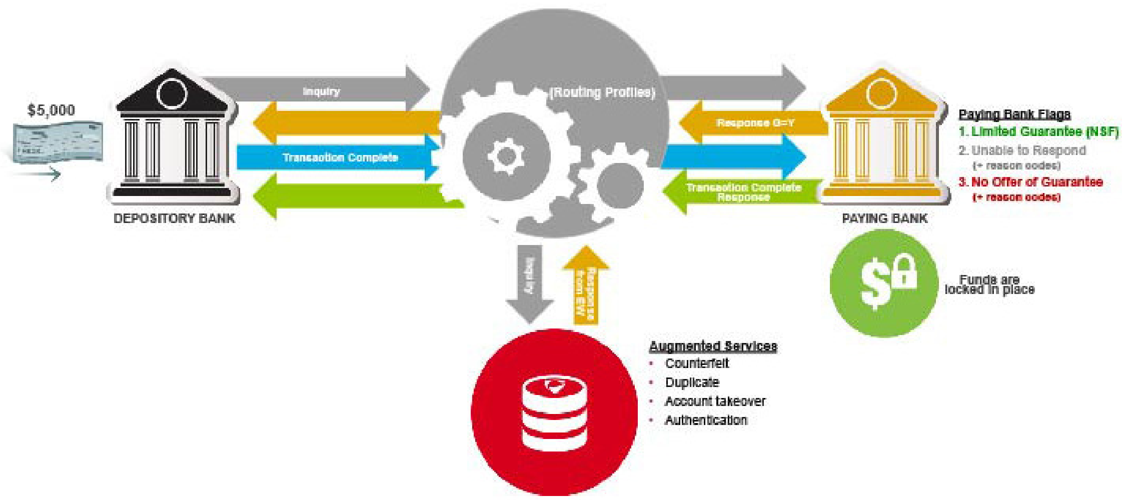
Ruth Razook, however, points out that real-time settlements would likely increase fraud, particularly for wire transfers, so she does not expect the industry to embrace the concept.

One company believes they have the right combination of assets to address the speed, security and scale concerns, through its recent acquisition of clearXchange, Early Warning is focused on building faster payments in the U.S. by integrating its fraud prevention services, authentication capabilities, and bank network with the scope of clearXchange's digital payments solutions to create the largest, most secure real-time payments ecosystem.

Early Warning, which is owned by Bank of America, BB&T, Capital One, JPMorgan Chase, PNC, U.S. Bank, and Wells Fargo, has launched its real-time good funds network to support multiple real-time payment use cases including P-to-P, corporate and government disbursements, check deposits and ACH, and bill payment. The initial phase of the good funds network will enable real-time P-to-P payments and check deposits.

"In modernizing the U.S. payments system, the industry's initial goal must be to eliminate the funds availability delays consumers and businesses currently experience," said Lou Anne Alexander, chief market development officer, Payments, Early Warning. "By connecting the depositing institution with the paying bank in real-time, intelligence is shared to facilitate faster and safer money movement." Early Warning's approach is to combine accurate deposit data with innovative risk technologies, added Alexander.

Three institutions are currently in a pilot with Early Warning's Deposit Chek® Direct Service powered by the good funds network, which is expected to fully launch later in 2016.



Source: Early Warning

IV. Fraud Prevention/Security

New payments capabilities also raise the specter of fraud as hackers look for holes in new and old payment methods alike.

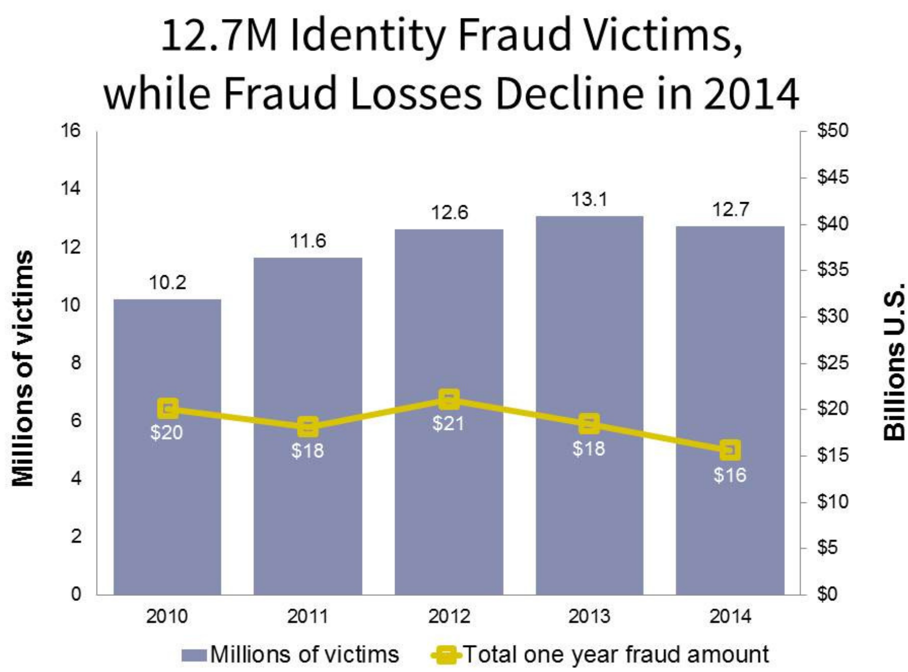
While fraud attempts continue to rise, many banks report that their losses are down, Aite Group noted. But this is most likely a temporary lull. Most banks plan to increase their online and mobile fraud mitigation spending over the next two years, with 32 percent seeing increases of 20 percent or more.

"Fraud and security are never going to go out of style with banks and their customers," said James Van Dyke, founder of Javelin Strategy & Research and now an independent security consultant. "As a bank, you're managing people's money. The more money they have, the more they will care about security."

Over the last three years, there has been a 29 percent increase in returned deposit items, largely due to customers falling victim to scams in which they receive a check, but need to wire a portion of the proceeds to the sender. The wired funds are gone from their account before the check clears, according to David Barnhardt, Early Warning's Vice President of Product Management, Payment Solutions.

"People are victims of social engineering," said Barnhardt. "They fall for something that is too good to be true. Parents are sometimes gullible and Millennials are too trusting."

Javelin reports that fraudsters stole $16 billion from 12.7 million U.S. consumers in 2014, the last year for which full figures are available. Though account fraud declined, identity theft still resulted in $16 billion in fraud losses.

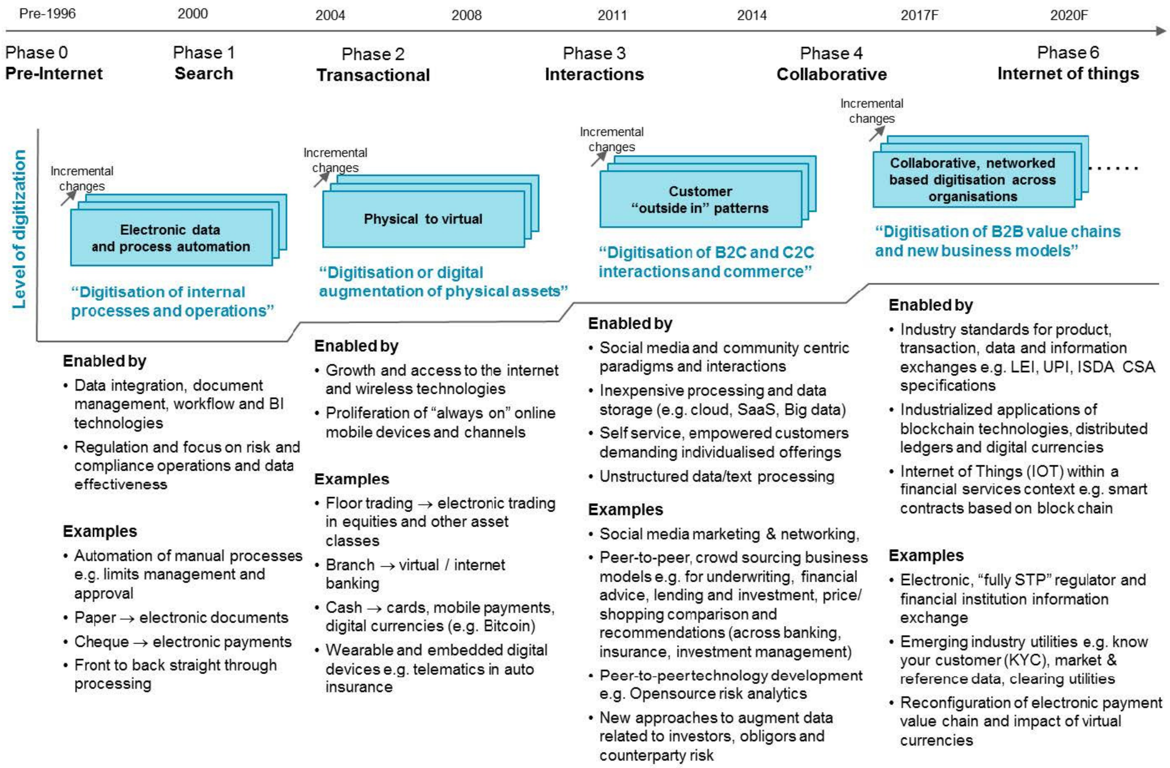


Source: Javelin Strategy & Research

Banks will use more biometrics, including fingerprint identification, facial recognition and even retina scans, all available via smartphones, to help protect against fraud in 2016, the experts predict.

"There will be an onslaught of cybersecurity tools to manage, monitor and comply as the whole industry uses enhanced technology to thwart the cybersecurity attacks," said Ruth Razook.

The evolution of digital banking will continue to lead to new risks, Celent adds.



Source: Celent's "The Evolution of Digital and the Coming Future" from the following report: Back to the Future in Risk Management: Preparing for the Digital Tsunami

V. Ideas from Other industries

Successful retailers have recognized for years the need for digital engagement and their successes are influencing bank customers' expectations.

"By engaging customers in superior buying experiences, [top] retailers are conditioning customers to expect the utmost in ease and personalization," BAI says in its 2015 *Report on Digital Banking and Analytics.*

Citing an IBM study, The Financial Brand says smartphones now drive 31 percent of online traffic, and accounted for 9 percent of sales. Tablets were used less for searches, but for 13 percent of completed sales.

Amazon has become a dominant player in retail by leveraging analytics, simplifying distribution and simplifying the customer experience to grow to be the dominant retail firm. The *New York Times*, citing Macquarie Research, reported that for every additional $1 Americans spent for items online in 2015, Amazon captured 51 cents. Of the expected $94 billion growth in all online and offline retail, Amazon sales accounted for $22 billion.

When the customer visits the Amazon website, he or she is greeted with a web page offering suggestions by category based on previous purchases. With a few clicks, the customer can select, review and purchase the item. Before the customer finalizes the purchase, Amazon lays the groundwork for the next purchase, by recommending accompanying purchases other buyers have made along with the initial item.

Amazon stores information about the customer's preferred payment card(s). The customer simply needs to click on the payment method; there is no need to re-enter payment data. Shipping to the doorstep means the customer never needs to make a trip in poor weather and bad traffic to a congested mall with slow checkout lines.

Digital shopping, which Amazon dominates, may have come of age during the most recent holiday season. During Black Friday weekend, online sales grew while in-store traffic declined, according to RetailNext.

Starbucks continues to dominate in the areas of mobile payments and loyalty. Twenty-one percent of all the company's transactions go through its mobile payment facilities, with 16 million consumers using the Starbucks mobile app for convenience and the loyalty reward program.

Some companies are using beacons, a class of low-powered, low-cost transmitters that can notify nearby devices of their presence, to drive sales. For example, Levi's Stadium, home of the San Francisco 49ers, has combined the Levi's Stadium app to enable patrons to locate their seats and order concessions, which are then delivered to their location so fans do not have to miss any game time. In the first seven months, there were 183,000 downloads, a 30 percent adoption rate and a $1.25 million increase in concession revenue.

At the Location Based Marketing Association conference in November in Chicago, experts discussed the possibility of banks using beacons at airports and other high traffic areas to promote travel-related products and services, such as an airline miles payment card.

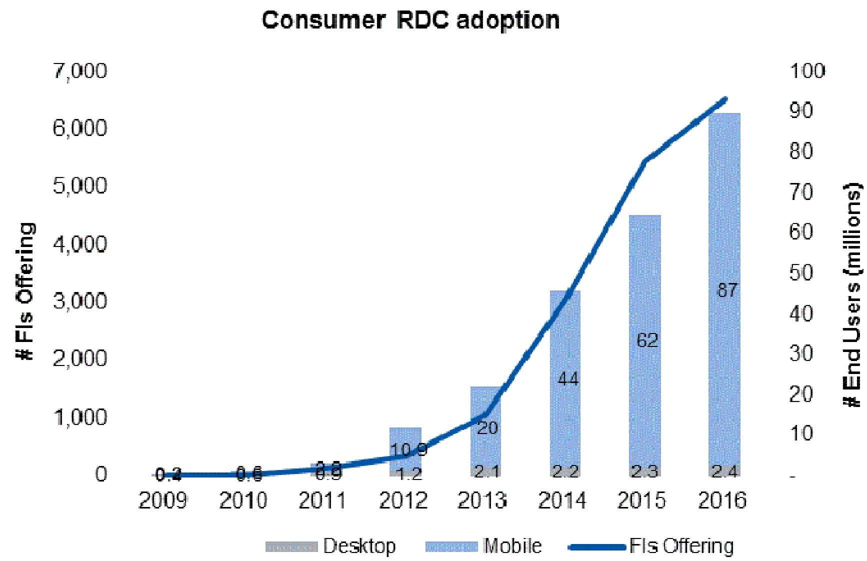
VI. Branch Technologies

Branches are becoming increasingly obsolete for many functions, with transactions, research about a bank's products and services and even account opening moving to mobile. In a year after starting to accept pictures of driver's licenses for customer identification for account openings, Bank Mobile, a division of Consumers Bank, N.J. had 100,000 accounts. Other banks, primarily the largest ones, are starting to accept imaged driver's licenses, and smaller banks are expected to follow suit.

The acceptance of digital images for account openings follows on the heels of mobile images for check deposits, which consumers have quickly adopted.

"As check usage continues to decline, mobile RDC will become increasingly relevant — not just for mobile use cases, but more broadly," Meara says.

Consumer and Microbusiness Usage of mRDC Is Skyrocketing



Source: Celent

Banks that lead with mobile or digital, but then require an applicant to go to the branch to fill out paperwork quickly demonstrate that they are not mobile-friendly and will quickly lose prospects, said Paul Mackowick, chief revenue officer of GRO Solutions. “Young people do not want to go to a branch; they want to do everything that they can on a mobile device. That being said, the reality is that many of the accounts are still opened at the branch. You need to use the technology to create the best experience. Too many institutions are keeping their processes cumbersome and not updated in the desire of staying compliant, with new customer acquisitions being a secondary consideration. This is based on old interpretations of the regulations and new thought has to be applied to what you do in the branch.”

“Banks need to embrace innovation and technology,” said Mitch Razook. “What technology depends on the type of customers they have. If they have traditional customers who want to come into the branch more, they want technologies that cater to those customers. If they have more advanced customers, banks want to drive those customers to [digital banking] technologies.”

Branch technologies will be dominated by self-service devices, though the much talked about video tellers, are not likely to be deployed by most financial institutions for several years. A June 2015 Celent survey found that two-thirds of institutions felt that self-service devices not involving video tellers would be a “likely” or “extremely likely” component of future branch designs. A smaller percentage (46 percent) felt similarly about video teller machines.

Steve DuPerrieu, vice president, channels and analytics for CSI, sees 2016 as the year of implementation of many of the branch technologies that have been discussed for many years, with self-service kiosks aided by universal bankers. Banks will have to employ and train more technology-savvy personnel.

“At this early stage in branch channel transformation, assisted self-service certainly looks like it’s destined to become a common fixture in new branch designs,” said Celent analyst Bob Meara upon release of the survey. “While banks convey a welcoming attitude toward self-service inside the branch, this won’t necessarily translate into widespread deployments. Lots of testing and experimentation need to be done first.”

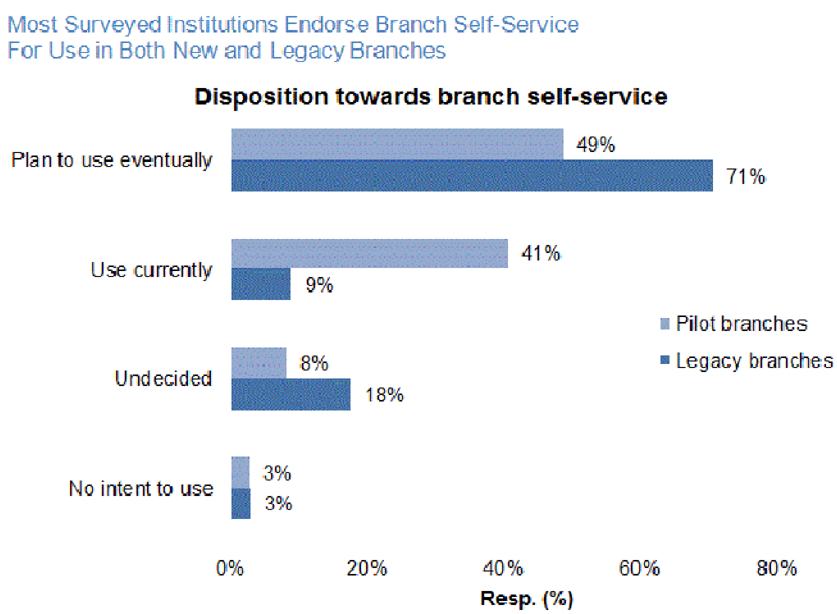
Among other Celent findings:

• Video tellers will likely be used stand-alone as well as alongside in-person tellers to support a variety of use cases. If a video infrastructure is to be built, it should be fully leveraged. This means using video for both teller-assist and subject-matter expert engagement.

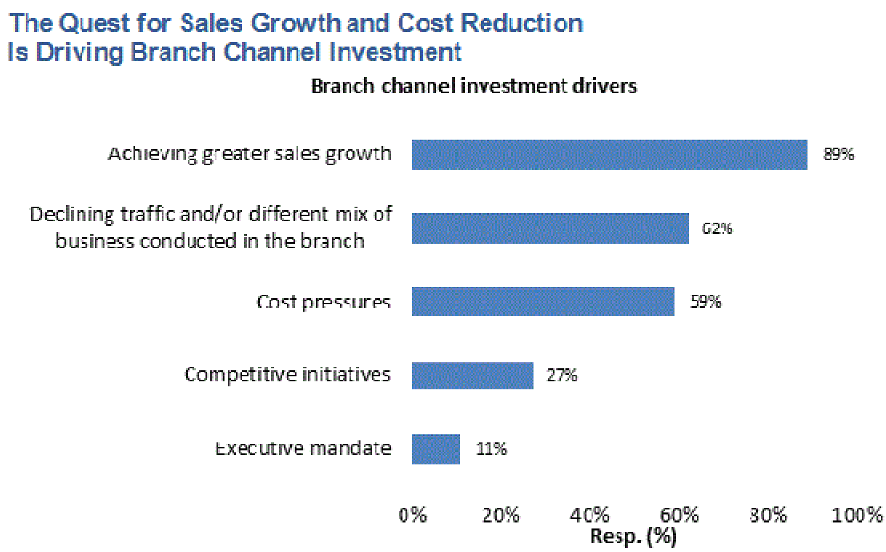
• Institutions will deploy self-service devices as an alternative to tellers. Tellers won’t disappear with the growth of branch self-service, but traditional teller stations will be largely replaced by a fewer number of “teller pods.”

• Cash recycling will move from usage in a minority of cash-heavy branches to the de facto standard for branch currency management.

• Branch channel transformation will take most institutions two to three years to figure out and longer to implement broadly. By then, it will be time to adjust the delivery model again.



Source: Celent



Source: Celent

"Banks are spending millions of dollars on virtual tellers – and it's a waste of money," said Peterson. "There aren't long lines at the branch, you only need automation if the branches are busy."

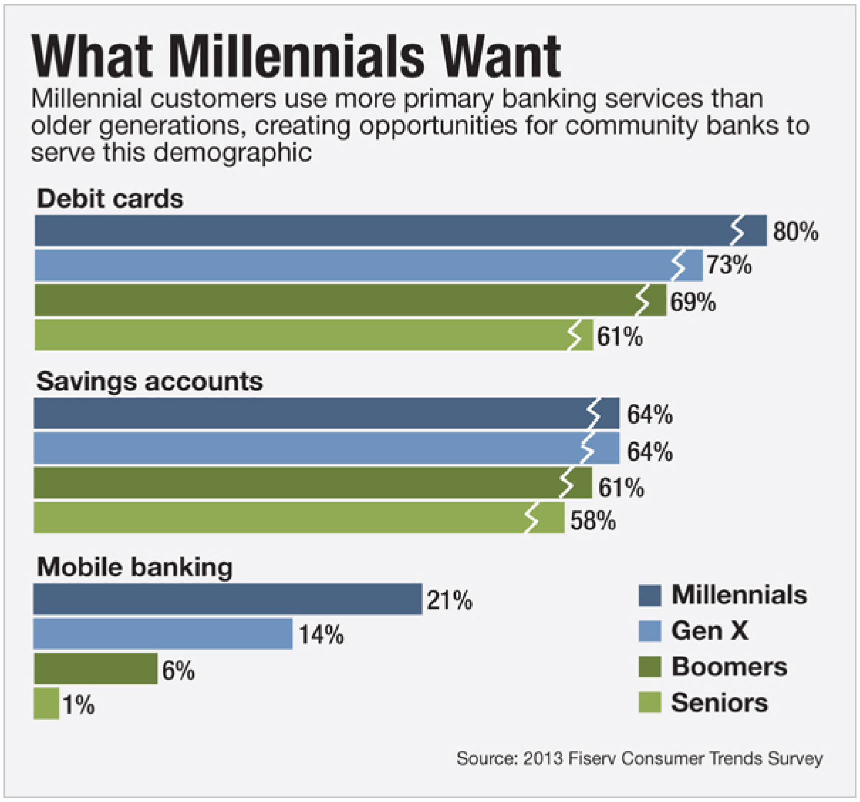
Instead of investing in virtual tellers, Peterson recommends that financial institutions invest in educational events to be hosted at the branches to inform customers about finances and related technologies, like the bank's online offering or mobile app. There are still people who do not have Internet or mobile access, so they go to the branch. But any prospect that comes into a typical branch will find little activity and few employees.

VII. Millennials

Millennials seldom go to the branch and get much of their initial financial advice from friends and family, though they still will use a variety of financial services from banks or fintech firms, whoever meets their expectations for service and functionality.

As Millennials displace Baby Boomers in the workplace and become the driving force in the economy and in financial services, financial institutions will need to ensure they cater to them.

According to Carter, Millennials in the U.S. already represent more than $200 billion in buying power, a figure that will continue to grow as they enter their more formative earning years. Ninety-four percent of Millennials are active online banking users, 72 percent are mobile banking users and 39 percent would consider using a digital, branchless bank.



Source: Fiserv

Millennials also look at corporate responsibility when choosing a financial services or other product or service provider.

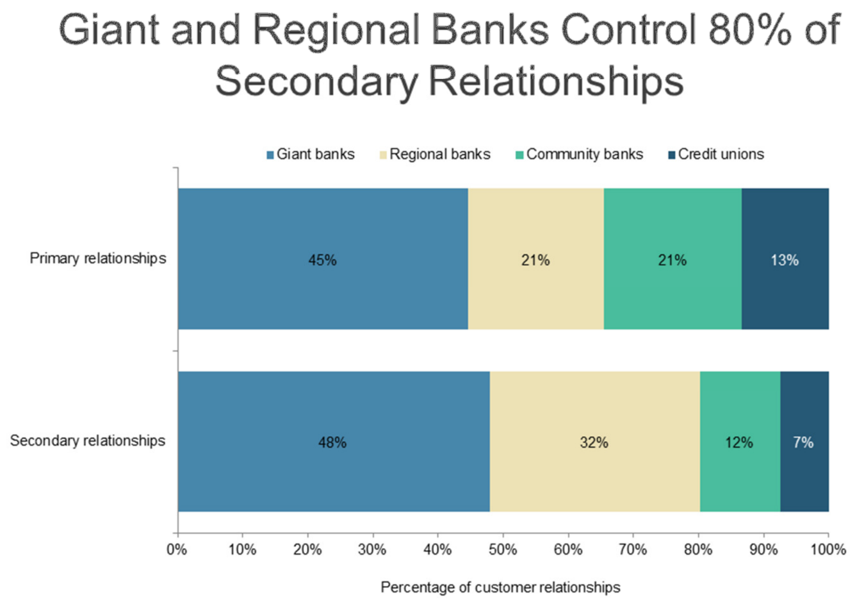
"Corporate responsibility is becoming a hot topic," said Nicastro. "What does the financial institution do for the community?" These are factors that are important to Millennials along with providing the products and services that they need and the supporting technologies and ease of service that they expect.

Beyond just attracting and retaining Millennials, Ruth Razook recommends hiring them and putting them in positions of power in determining the bank's technology strategy and technology purchases and leases.

VIII. Community Banks

"Community banking is really about the relationship, but with less opportunity in the branches, banks need to use various tools to automate or digitize that relationship," said Steve Cotton, CEO and founder of FI Navigator. "The bank has to understand who the customer is. They have to have systems in place to allow the banker to have a 360-degree view of the customer. They have to have centralized data analytics, storage and aggregation. Data is not valuable if it does not provide actionable information."

Customers more commonly switch their share of wallet rather than switch financial institutions entirely, according to Javelin. Community banks and credit unions are at greatest risk of having consumers turning to the Top 20 banks instead. Many consumers identify a smaller bank or credit union as their primary financial institution but they look to a larger bank when they shop for additional products, particularly if a community bank fails to offer the mobile and online functionality the customer seeks.



Source: Javelin Strategy & Research

"Another concern for community banks as well as for larger financial institutions, is how to stay relevant in lending. Consumers no longer want to wait to speak to a loan officer," said Jimmy Sawyers, co-founder of Sawyers & Jacobs LLC. "Community banks need to change their lending workflows and their approach to lending. Rather than wait in line, people are going online to Lending Club, Kabbage and OnDeck. Theses non-traditional lenders offer quick and easy interfaces. Many entrepreneurs find it easier to finance a small startup on their credit cards rather than through their community banks, and that needs to change."

These small businesses and community banks are vital to the communities that they serve," Sawyers adds. "Banks can be successful if they offer better customer experiences."

A couple of ways community banks can offer superior customer experiences:

- Unchain lending officers from the bank, outfitting them with tablets to meet small business and consumer clients where and when they desire rather than the time and place that is most convenient for the bank.
- Rethink CRM systems, opting for ones that integrate with MS Office tools and applications in the cloud so that they can be accessed via smartphones and tablets. Stand-alone systems are no longer sufficient.

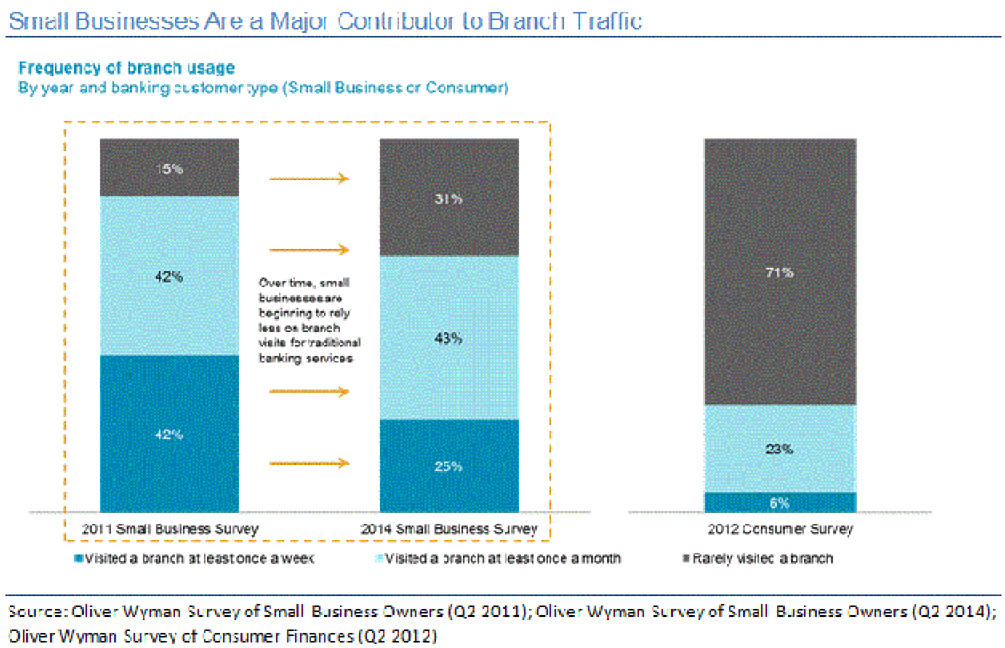
"Technology is a great leveler of the playing field," said Sawyers.

Beyond the changes in improving digital lending capabilities and the customer experience, community banks and the industry as a whole need to fill the holes left by tech talent leaving the bank as Baby Boomers retire, Sawyers adds. “The tech labor pool is shallow. Banks have to go out and seek that knowledge or expertise through co-sourcing with trusted providers.”

IX. Small Business

While much of the discussion of the digital banks has centered around consumers, small businesses are affected as well.

Small businesses can use and banks can benefit from remote deposit capture via a smartphone, Gaynor said, because far too many small business branch visits are to deposit a single check, costing the business in terms of time and the financial institution in terms of staff and branch overhead for a series of single transactions.



Source: Celent

There are still far too many manual processes in small business banking, said Pierre Naudé, CEO of nCino. Non-bank competitors such as the Lending Club are funding loans in as little as 48 hours, far faster than most banks. Other small business owners are using credit cards for short-term credit needs.

“Banks have to realize that they need speed,” said Naudé. “They need to streamline their work records. They need to reduce the time to fund and close commercial loans.”

The new year will be an opportune time for community banks to gain small business customers, which are largely dissatisfied with their current financial services providers, according to Aite Group. More than one-third of U.S.-based businesses generating less than $20 million in annual revenue are already going somewhere other than their bank to meet at least one of their financial needs. Two-thirds of the banks Aite surveyed have established themselves in the small business market. While the majority of small business activity still goes to the largest banks, smaller financial institutions with the right strategies and product offerings could win new customers.

Nicastro agrees that opportunities exist for community banks to gain more business, particularly on the lending side if they have the right technologies. So he expects community banks to invest more in loan origination and document management systems to minimize the delays in the time between applications and closings of mortgages and consumer loans.

Banks need to embrace auto-decisioning for smaller loans, provide and receive any documentation online and rework business processes to move technology and other decisions to the lines of business rather than with some other part of the bank, Naudé added. He also recommends that banks query new consumer customers about any business interests and what projects business owners may be anticipating, queries that banks today need to do through online and mobile channels because small business customers, like consumers, rarely visit the branch.

Ruth Razook expects 2016 to be the year when banks start rolling out mobile banking suites for corporate customers. These suites will include wire transfers, ACH and other mobile payment capabilities as well as strong security and other features.

X. Closing Thought

A new factor for customers and bankers who are new to the industry within the last 10 years will be rising interest rates in 2015. The Federal Reserve raised rates for the first time in nearly a decade in December and indicated more hikes in the new year.

“It’s created a situation that many haven’t seen before and haven’t thought about its effect on the bottom line,” said Mitch Razook. “Regulators haven’t thought it through either.”

As a result, he expects banks to make investments in technologies to closely evaluate interest rate risk.

The Payoff of Bank-Branded Mobile Wallets with Tender Reciprocity

Achieving the return on investment of a mobile wallet through collaboration between financial institutions and retailers using open connection options

By Richard Crone and Heidi Liebenguth, Crone Consulting, LLC

The mobile wallet and embedded payment is a new authenticated token and platform for developing Customer Relationship Management (CRM) based customized services and new products. For retailers, their shopping app – with payment – is the new front door to enhancing their omni-channel experience. For financial institutions (FI's), payment – potentially through their mobile banking app – is the fastest growing and most frequent touchpoint with their customers. Needless to say, the mobile experience is an important service interaction for both parties and for this reason ripe for a new level of collaboration between FI's and retailers as we have seen with the Chase Pay and Merchant Customer Exchange (MCX).

Payments is a multi-dependent market, meaning to initiate a new mobile payment product or service offering one must also gain the support and integration of many entities beyond the deploying mobile wallet platform.

Building a bridge between merchants and financial institutions for the acceptance of bank-branded mobile wallets with tender reciprocity will require addressing the common ground between them, focusing first on the acceptance infrastructure of the merchants. The major options include:

- Ride the coattails of an existing closed acceptance network – such as Near Field Communication (NFC) or Magnetic Secure Transmission (MST), etc. such as Apple Pay or Samsung Pay
- Create a new proprietary acceptance network – as with Starbucks, Wal-Mart Pay and others
- Open and share a common acceptance platform and network – such as Chase Pay and MCX

The path chosen is most influenced by the return on investment (ROI) and the mobile access technology available at the point of sale. The ROI for mobile payments can be derived from processing, acquiring and cost efficiencies and new revenue opportunities across the following dimensions:

Acquiring Efficiencies and Cost Reduction

- Payment account aggregation
- Gross Merchandise Value (GMV) regardless of tender type used
- Tender steering and least cost routing
- Greater security, multifactor authentication and reduced fraud
- Customer Relationship Management (CRM) and loyalty platform

Mobile Wallet Issuing Upside

- Protecting and promoting mobile moments and brand across the Five Mobile Trigger Points™
- In-context data feeds with machine learning and artificial intelligence
- Data-driven customized, opt-in advertising, promotion and offers
- New payment types with alternative clearing and settlement options

Crone Consulting LLC estimates the annual gross revenue that could be generated from a mobile wallet can be as much as $300 per user per year just from the "data-driven" elements alone. This could be as much as two (2) times the annual gross revenue generated from a typical demand deposit account (DDA) for a financial institution or nearly equal to the gross revenue of the typical credit card account. It could be more than ten (10) times what the typical search engine-based or enrolled social platform generates in gross revenue per enrolled user per year.

Achieving the data-driven ROI requires that the mobile wallet harness its full potential as an in-context CRM contact point for its issuing and partnering entities. And this hinges on one key gating factor, enrollment. The underlying premise for the ROI and strategy for a mobile wallet and tender reciprocity is Crone's Rule: *the one who enrolls is the one who controls.* Meaning, the entity that secures the enrollment of multiple disparate accounts, even if decoupled from the original entity that provisioned the account, whether FI or retailer private label, controls the user interface (UI) and subsequently benefits from monetizing the active use of a mobile wallet. This sets the stage for tender reciprocity, or in other words, populating both open-loop bank-originated debit and credit accounts inside retailer shopping apps and mobile wallets and vice versa with the support of retailer-sponsored private label accounts inside financial institution-branded mobile banking apps and wallets.

Regardless of the tender types activated, the mobile wallet must be integrated across a number of technologies on the mobile device itself and at the physical point-of-sale. These interfaces can be grouped into two basic deployment models:

- **Hardware-based:** Account credentials or tokens are stored in the physical hardware of the mobile device, controlled by the device manufacturer, wireless carrier, Token Service Provider (TSP), payment brand or other entity, generally using an NFC or other proprietary connection to the physical point-of-sale
- **Cloud-based:** Account credentials (tokenized or not) are stored in the cloud, and transmitted either directly to the merchant's acquirer or via tokens provided through the mobile device. Various functional elements on the phone can be used for making the connection at the physical point-of-sale

The two options are a classic open versus closed technology argument.

In the case of the first option, if the one who enrolls is the one who controls, and a device manufacturer or other entity can further control the access to account credentials and the physical point of sale with proprietary hardware such as a secure element or Near Field Communications (NFC) then they can command a premium for participation and erect a barrier to entry for any competitors. Thus the attraction to the first option by the mobile handset manufacturers, the mobile network operators/wireless carriers, and the existing payment brands.

In the case of the second, open cloud-based options aren't tied to the same restrictions and thus take full advantage of the open protocols on the mobile device such as the camera/bar codes, Bluetooth Low Energy (BLE), Host Card Emulation (HCE), etc. to make the connection with the merchant's point-of-sale with much greater ease and far greater functionality.

Cloud-based payment by its nature presumes pre-authenticating and identifying the customer before completing a payment. For this reason cloud-based payments are more easily paired with loyalty, offer activation with automatic redemption at the POS, electronic receipts and other new value-added services. It is this feature that allows the cloud-based mobile wallet issuer to more easily achieve the data-driven ROI elements.

For these reasons the open cloud-based approaches are considered the most promising for launching ubiquitous access for all phones, all tender types, in all purchase venues for FI and retailer branded mobile wallets.

The mobile wallet is its own unique token with multifactor authentication unsurpassed by any other payment type in history in terms of security, authentication and functionality. The mobile payments platform, especially in the case of cloud-based approaches, holds the potential for establishing whole new payment types as well as alternative clearing and settlement networks.

The announcement by JPMorgan Chase & Co. (Chase) of Chase Pay is such an example. With issuing, acceptance and acquiring assets on both sides of this two-party market, combined with ChaseNet's on-us processing terms and conditions secured by Chase in its 2013 deal with Visa, Chase Pay is able to essentially set up a closed-loop network for processing its own on-us mobile payment transactions.

Establishing the common ground required between FI's and retailers to support bank-branded mobile wallets with tender reciprocity will require existing stakeholders to update their thinking, define or in some cases redefine existing business terms for such items as:

- Card present and card not present interchange rates: which is appropriate in mobile?
- Data rights: who owns or sees the customer data?
- Activation, automatic redemption and net settlement of offers: Storage Keeping Unit (SKU) purchase confirmation and guidelines for cost allocation and revenue sharing
- Deep links for opening the customer's preferred app to enhance the shopping experience and completing the payment
- How important is a consistent User Experience (UX) at point-of-sale, in-app, buy buttons, etc.?

For example, the open cloud-based options hold the most promise but require the recognition by the existing payment networks that the safety, security and multifactor authentication applied to these payment options would indeed qualify for card-present debit and credit processing rates by the major networks.

Current tokenization schemes make it nearly impossible for retailers to identify their customers, so the sharing of opt-in customer data and/or loyalty integration is an important component of having retailers accept bank-branded wallets.

Incorporating the activation, automatic redemption and net settlement of pre-activated offers is important functionality to both retailers and FI's, regardless of which mobile wallet the consumer ultimately utilizes for payment.

And finally, creating an open pathway and integrated deep links for opening each respective entity's own branded mobile application, be it a retailer's shopping app or an FI's mobile banking app, is vital to respecting the consumer's desire and the respective stakeholders' opportunity to best serve their respective and mutual customers.

Richard Crone and Heidi Liebenguth lead Crone Consulting LLC, an independent advisory firm specializing in mobile strategy and payments. Crone Consulting has helped define the mobile commerce and payments strategy for all sizes of financial institutions, large merchants and specialty retailers, restaurants, recurring billers, core processors, payment networks, telcos, consortiums and investors. The firm's payments optimization services have achieved 10 to 30 percent cost reductions and revenue increase through innovative self-service, alternative and mobile payment strategies. Richard and Heidi can be reached at www.croneconsulting.com.

How Banks Can Launch Competitive Mobile Wallets

Rewards partnerships and integration will be the key to banks' success in mobile wallets

By Paul Schaus, CCG Catalyst

Banks have so far let technology companies take the lead in mobile wallets, with most of them taking a wait-and-see approach based on the slow adoption of mobile payments in recent years. Only a handful of the largest retail banks like Chase and Barclays have released their own wallets to compete with Apple Pay, Samsung Pay, and Android Pay.

However, mobile payments adoption will soon accelerate thanks to changing circumstances. A consumer survey that CCG Catalyst conducted at the end of last year identified several of the top barriers to mobile wallet adoption among consumers. Some of these top issues are already being resolved to facilitate adoption. Three of the top five barriers most commonly cited by the respondents indicate a lack of awareness around merchant acceptance and how to make a mobile payment:

- 33.6% cited the need for merchants to advertise if they accept mobile payments.
- 22.4% said they don't know how to make a mobile payment.
- 21.5% said they forget to use mobile payments when they go to the store.

The vast majority of nationwide retailers in the US have adopted NFC terminals, and these nationwide retail chains make up more than 80% of the retail market in the US, according to government statistics. With so much of the US retail business locked up by these nationwide retailers, consumers will soon learn that the big box stores where they shop most frequently accept mobile payments, even if smaller merchants do not.

Apple, Google, and Samsung will also realize that they need to improve awareness about how to make mobile payments with their own solutions to compete with both each other and other mobile payments providers like PayPal and those banks that offer wallets. They can easily do so with in-app videos and tutorials that show a user how the solution works and where they can use it.

Relationships at Risk

As some of these barriers to adoption fall away, banks should be less inclined to allow technology companies to take the lead in this market. Doing so would allow these companies to disintermediate banks' customer relationships. Consumers make payments more often than they check their bank account, so mobile payments users will be engaging with their mobile wallet apps more often than with their mobile banking apps. Over time, alternative wallet providers could add additional services to their wallets – like personal financial management capabilities based on transactional data – that would erode the banks' position of trusted financial advisor. To prevent this, banks (large and small) will need to offer their own mobile wallets, but how can they compete with alternative providers?

Our survey from the end of last year offers some insights on how banks can do that. The key will be turning the mobile wallet into a central hub for all of the user's commercial interactions. The mobile wallet features most desired by the survey's respondents were loyalty and membership cards (58%) and coupons (57%).

A successful wallet app also needs to integrate multiple payments cards and their associated rewards programs from all of the user's different financial services providers. In our survey, 24% of the respondents said that a bank-owned mobile wallet would need to integrate other banks' credit cards, debit cards, and account information to draw their interest. Additionally, 16% of them said that they would be enticed by direct billing to their mobile network operator, and others expressed a desire to store airline boarding passes in it. Some respondents also wanted to include financial services solutions from alternative providers: 13% of them wanted Google Wallet's peer-to-peer payments service integrated with their mobile wallet.

Banks can also provide consumers with something that Apple Pay, Samsung Pay, and Android Pay can't – their banking information. Banks can include the ability to check balances, make bill payments, and transfer money between accounts in their wallets. Almost half of the respondents in our survey (43%) expressed an interest in having these capabilities in a mobile wallet.

Building a Winning Wallet

Banks will need to leverage partnerships and APIs to build an ecosystem that ties together all of the customer's favorite merchants and service providers into a single wallet app. This will be an easier task for the largest banks that already have partnerships with major airlines, retailers, and other providers as part of their extensive loyalty programs. With the relationships in place, they can simply integrate these partnership programs into their mobile wallet apps.

For smaller regional and community banks that don't have such extensive rewards programs, building a desirable mobile wallet will be harder. They will first have to look at their customer base and determine what kind of partnerships to pursue. A regional bank would naturally start by building partnerships with national retail chains that have a big presence in its region, or with airlines that run the most flights out of the closest airports. These banks can also analyze their customers' transactional data and conduct customer surveys to find where their mobile wallet customers would like to get rewards and coupons for shopping.

The next step for these banks will be ensuring that their wallet solutions have the flexibility to easily integrate with their partners' loyalty and rewards programs through APIs. Many smaller regional and community banks will probably choose to buy a white-label wallet solution rather than build their own, and any solution they purchase must have this flexibility.

Security will also be a necessity. The biggest barrier in our survey to mobile wallet adoption was security and fear of identity theft, with 68% of the respondents calling it a concern. Banks should be very forward in educating their customers about how they secure their mobile wallet transactions to gain trust. They also need to make sure that the integrations they build with partners don't create any security holes.

The good news for banks is that even though other companies have a head start in mobile payments, consumers are still very open to the idea of using a mobile wallet from their bank. Just over half of the respondents in our survey (51%) said they would be likely or very likely to use a mobile wallet from their financial institution. Banks need to act soon though to take advantage. As merchant acceptance and customer awareness of mobile payments increases, the early lead Apple, Google, and Samsung have built will grow larger. The path forward is clear: banks need to provide the rewards and coupons to entice consumers to their wallets, while also reassuring them that mobile wallets are secure.

Paul Schaus is the president, CEO and founder of CCG Catalyst*, a management consulting firm offering strategic advice to banks. Contact him at PaulSchaus@ccg-catalyst.com or 1-800-439-8710 ext 201. Follow CCG Catalyst on LinkedIn and Twitter.*

Top Ten Trends Impacting Bank Technology for 2016

By Jimmy Sawyers

"I've learned that people will forget what you said, people will forget what you did, but people will never forget how you made them feel." Maya Angelou

How do you feel about your recent interactions as a customer? While on a speaking engagement in Atlanta early last year, I had some strong feelings about business travel. First, I avoided a major airline and flew a small airline, Southern Airways, from Memphis to Atlanta. With this niche airline, I simply arrived at the airport 20 minutes before my flight. No TSA check. No baggage fees. Just great service and an amazing customer experience. Upon arrival in Atlanta, I called a traditional cab company to take me from the small airport to my hotel. Forty-five minutes later, my cab finally arrived. Remember the first Dodge Caravan minivans with the fake wood paneling? This was my cab, a relic of the 80's.

When I gave the driver the name of the hotel, just 15 minutes from the airport, he handed me his old-school GPS so I could punch in the address for him. This trip was not off to a good start. After some other difficulties and missed turns, we finally arrived at my hotel. I vowed to try something different for the return trip as this had not been a great customer experience.

After my presentation was over the next day, I decided it was time to try Uber. I accessed the app on my smartphone and summoned a driver. Within 10 seconds, my phone was ringing as the driver let me know he was entering the hotel grounds. Sixty seconds later, a very nice, clean SUV (no wood paneling) pulled up in front of the hotel and I was off. Compare that 70-second service to the agonizing 45-minute wait I had with the cab.

The driver was friendly. The vehicle was new. I didn't have to dig for cash or ask the driver if he takes American Express as my payment information was already in the Uber system and payment was automatic without any interaction with the driver. No paper receipt was necessary as it was emailed to me. I simply hopped out of the vehicle, grabbed my bags, and I was on my way home. I was completely and permanently converted. Since then, I'll walk past a dozen cabs to get to my Uber car.

No secret to those who have been using it for years, Uber offered me an incredible customer experience coupled with up-to-date technology. Such is the key for today's banks. Winners will focus on delivering a frictionless customer experience while leveraging the latest technology to satisfy today's demanding and informed consumer.

To help bankers invest in the right technology solutions, not wood-paneled minivans, I offer ten predictions for the year ahead:

Prediction #1 – The Traditional Lending Model is Challenged
The days of customers waiting in bank lobbies, reading old magazines, and completing loan applications on paper, are over. A new breed of lenders (e.g., Lending Club, Kabbage, OnDeck, et. al.) with simple online applications and a less intimidating approach will prompt bankers to review their loan application processes and make the changes necessary to bring customers on board in a more efficient and streamlined manner while still effectively managing credit risk.

As part of this process, bankers will finally embrace Digital Transaction Management and E-sign capabilities, a game-changer that will allow customers to sign documents easily without having to visit the bank or be in the same place as their co-borrowers.

Challenge Question: How frictionless is your bank's loan application process?

Prediction #2 – Natural Language Processing (NLP) Brings Fewer Taps to Apps
Natural Language Processing (NLP) is a field of computer science, artificial intelligence, and computational linguistics concerned with the interactions between computers and humans. Bankers and their customers will feel the impact of NLP in 2016.

Tapping on one's smartphone will seem archaic soon as NLP technology matures past Apple's Siri, truly recognizes our natural speaking voice, and actually responds quickly with the right answers and actions. Google Now has done a fairly good job in this area, as has Microsoft's Cortana. Amazon's Echo (my personal favorite at home) is a great example of this technology improvement. The Echo, a sleek black cylinder that resembles a simple Bluetooth speaker, uses a multidirectional microphone to receive voice input accurately, process it quickly, then respond with incredible precision. My Echo's name is Alexa, and yes, I'm in love with her and I'm not ashamed to admit it. Isn't technology great?!

Such technology is promising for bank apps that now rely on too many finger taps. Simply asking your device, "What is my account balance?" is preferable to logging in the slow, traditional way. At what point does your mobile banking service and former touch-tone telephone banking system merge into one application?

Expect NLP and personal/virtual/digital assistants to become more integrated into our daily lives and to change the way consumers interface with your bank.

Challenge Question: Will your bank's apps work with NLP?

Prediction #3 – Disruptive Technology Flattens Our World
Freedom and access will be key words in business for 2016. Freedom to choose goods and services in an ultracompetitive and changing market filled with new entrants and non-traditional providers. Access quickly and conveniently via many devices as distribution channels allow customers to get what they buy fast.

Planning a vacation? Many people will use Airbnb instead of traditional vacation home rental firms. Need a ride? Call Uber or Lyft instead of a cab.

My Roomba vacuum, Nest thermostat, and Wemo lights have automated my home in ways previously unimagined. And, the best is yet to come.

According to comScore, the majority of online shopping now takes place on mobile devices. Online shopping has enjoyed double-digit growth, close to or above 15%, for the past five years (Source: U.S. Commerce Department). Apps that function well on any device and any screen combined with premium services, like Amazon's Prime, will drive more consumers to shop and bank online. It's no longer enough to just offer mobile banking. The mobile banking experience must be on par with consumers' other online experiences.

Challenge Question: How will disruptive technology impact your bank's business model?

Prediction #4 – EMV Fails Miserably
McDonald's generates 65% of its U.S. sales through its drive-through lane (Source: QSR Magazine). Getting paying customers through the queue is critical to such businesses. This is why EMV (Europay,

MasterCard, Visa) will fail miserably in 2016 as more consumers and retailers experience the frustration of the EMV payment process, which is several seconds longer than the traditional card swipe.

Merchant terminal prompts are hard to understand. Cashiers are not trained properly and get flustered. Dipping the card is resulting in cards being left in terminals versus the swipe where cards never left consumers' hands. Getting the card orientation right for the dip is also challenging for some consumers. These simple but critical time-and-motion issues will cause consumers and merchants to reject EMV.

Certainly the chip is more secure than the magnetic stripe but most EMV transactions are not "chip and PIN" and are actually "chip and signature." When EMV was introduced in Europe 20 years ago, the first minute of a long-distance telephone call necessary to verify a transaction was $3.00, hence the reason a solution was needed that did not rely on telecommunications. EMV might have been the right solution in Europe in 1996 but it will not work well in the U.S. in 2016.

Challenge Question: Have your bank customers expressed frustration with the EMV payment process?

Prediction #5 – Proximity Payments Evolve and are Embraced by Consumers
One of the possible benefits of the EMV card user experience being so bad is the fact that it might drive more consumers to embrace proximity payments at a much faster rate. Waving one's Apple Watch over a merchant terminal is a contactless and more efficient process than dipping a chip card into a terminal. The impatience of the average consumer will help proximity payments volumes grow.

Euromonitor International reported that mobile payments were US$670 billion in 2015 (46 markets researched) and that such payments are projected to quadruple to nearly US$2 trillion over the next five years.

Bankers should be encouraging and facilitating mobile payments as such activity will increase banks' interchange revenue while helping the consumer pay quickly and securely.

Challenge Question: Are you educating your bank's employees and customers on the benefits of proximity payments?

Prediction #6 – Cybersecurity Gets Serious as Bankers Get Educated
The word "Cybersecurity" evokes emotions not experienced in banking since the term, "Y2K." While not new to many banks that have had penetration testing, vulnerability scanning, social engineering, and other assessments of their bank's network security posture performed for the past 16 years or more, some banks are just now taking network security seriously. Board members are taking notice. Bankers are holding more business customer forums on cybersecurity preparedness. Regulators are requiring more scrutiny, testing, and audit coverage. The attention is warranted and will only increase in 2016.

IT Audits and Cybersecurity Assessments that fail to cover critical threats and vulnerabilities specific to banking will no longer be tolerated by IT examiners and banks' boards of directors. Gone are the days of bankers who "…just want a piece of paper (read report) that will satisfy the regulators." Most bankers now realize that cybersecurity is a business issue that must be addressed by engaging qualified firms to perform in-depth testing and review of their banks' systems and processes. To ignore this area is to leave the bank and its customers vulnerable to attack.

Practitioners who seek to scare and sensationalize rather than educate and help will be exposed. Are your bank's tech and risk management leaders more concerned about the unlikely incident of someone scanning the contents of their wallets using RFID technology, or are they more concerned with the next

Corporate Account Takeover (CATO) event, hack, or spear phishing attack that could result in significant financial losses and tremendous reputational risk? Risk mitigation dollars are best spent on the latter, which is the most likely.

The Cybersecurity Assessment Tool published by the Federal Financial Institutions Examination Council (FFIEC) in June 2015 is a noble effort by the agencies to help bankers assess their banks' cybersecurity readiness, but the assessment falls short as it lacks specificity, does not address mitigating controls, and forces bankers to make broad assumptions without proper verification. Consequently, the assessment has confused more than it has helped and has been dead on arrival at most banks. Completing a generic risk assessment can be a waste of time and resources, plus it can create a false sense of security and the impression that a bank is prepared when it's actually vulnerable and exposed.

Bankers will get what they pay for when they foolishly use free cybersecurity risk assessments marketed by service providers. Just as a bank's board of directors would not engage a CPA firm to perform a free financial statement audit, bankers will learn that professional help in cybersecurity will require a reasonable investment to yield a reasonable return while truly mitigating cybersecurity risk.

As Warren Buffet said, "Price is what you pay. Value is what you get." Or, as my aunt put it a bit more succinctly, "Pay peanuts, get monkeys." Such is the case with engaging cybersecurity experts who understand the business of banking. One must pay for value.

Challenge Question: Is your bank investing in qualified and independent cybersecurity consulting services and solutions?

Prediction #7 – Vendor Management Moves Beyond a Check-the-Box Exercise
The banking regulatory agencies have been serious about vendor management for several years now, requiring banks to maintain significant documentation and perform vendor management risk assessments. Unfortunately, in some cases, this risk management function has become more about the amount of paper than the significance and practicality of the relationship.

As one wise banker exclaimed to me recently, "If I go to a vendor's website and I can't tell who manages or owns the company, my bank does not do business with them. I apply the same rule if their website does not list a physical street address. Those are big red flags for me. Faceless, anchorless, perhaps nomadic companies scare me."

In 2016, bankers will shine a light on vendors and require them to fully disclose important matters of ownership, location, and business practices. Those who can't or won't stand up to this scrutiny will be exposed.

Such simple vendor management efforts will help bankers avoid getting burned by weak providers who may damage the bank's reputation. As Aldo Gucci said, "The bitterness of poor quality remains long after the sweetness of low price has faded from memory."

Challenge Question: How many of your vendors do not disclose ownership or their physical address on their websites?

Prediction #8 – Computing Devices Continue to Advance While Confusing the Market
Bankers have been migrating from desktops to laptops for years, enjoying increased productivity and mobility as a result. As smartphones and tablets came onto the scene, many bankers suffered from device overload and still seek a universal device that can get work done. Some lament, "I browse the

web on my tablet. I text and talk on my smartphone; but if I want to get real work done, I must use my traditional laptop."

Considering the banking environment, beware of seemingly inexpensive but high-tech devices such as Google's Chromebooks. Most bankers will find these inadequate for banking applications that might still be dependent on local resources, peripherals, and vendor-specific solutions. What might sound good may not work in your bank, even if the device is Citrix- and VMware- compatible. Test first. "Enterprise-ready" is a relative term.

Expect Microsoft's newest version of the Surface Tablet, which is finally closer to a true laptop's utility, to close the gap and offer a good solution. Combined with Microsoft Windows 10, we have found our Surface Book offers the best of both worlds. Touchscreen, tablet mobility when we're in "Clipboard Mode," and a durable, tactile keyboard plus impressive battery life for banging out reports in laptop mode.

We especially like "signing on" by simply looking at the screen which uses Windows Hello to recognize one's face and log in. Expect Microsoft to up the ante in such facial recognition software as their Project Oxford will build applications that detect emotion on one's face and tell if one is happy, sad, frustrated, angry, or experiencing other emotions. Devices will continue to evolve in awareness by knowing where we are, if we're on the move, our schedule, and again, our emotions.

Remember, tablets without Wi-Fi access in your bank are simply expensive pieces of glass. Invest in the bank's network infrastructure to truly benefit from today's advanced devices.

Challenge Question: Is your bank getting the most out of its investment in advanced computing devices?

Prediction #9 – The Tech Talent Gap Widens

We ended 2015 with a U.S. unemployment rate of 5.0 percent. Compare that to YE2009 when the unemployment rate was twice that, at 10 percent. This good news could impact bankers in a negative way as it becomes more difficult to find high-performing employees in a strong job market. Many banks already struggle to develop and retain tech talent. Accordingly, expect more banks to co-source with trusted providers to supplement in-house talent and develop bank employees.

As the exchange between the CEO and the CFO often goes: CFO: "What if we train our employees and they leave? CEO: But, what if we don't and they stay?"

In 2016, successful bankers will seek quality continuing education for employees at all levels of their organizations with special emphasis on developing top talent to lead these banks into a future where an understanding of technology as a business tool will be critical.

Challenge Question: How is your bank attracting, developing, and retaining talented employees?

Prediction #10 – Community Banks Continue to Change Lives

From age 19 to 28, I was fortunate enough to work in a community bank where I learned a lot from my colleagues and our customers. For the past 22 years, I've been honored to consult with community banks on a variety of technology and risk management issues. As I teach at several banking schools, speak and visit bankers around the country, I continue to learn from our clients and their providers as markets change and technology progresses. One thing has remained constant in my 30-plus years in this field. I have seen firsthand how community banks change lives and help people succeed. Banking remains an honorable profession that is vital to our success as a country and as individuals. Whether financing a small business startup for a hopeful entrepreneur or a new suit for a graduating student from a meager background, community banks impact those they serve in profound and lasting ways. This I know firsthand.

In 2016, bankers will engage customers through a variety of channels including social media to highlight these success stories and continue serving their communities, and collectively…our nation.

Challenge Question: How will your bank change lives in 2016?

Summary

My customer experience with Uber made a lasting impression and drove me away from cab companies. Are your customers getting the Uber or the cab experience at your bank? Remember, customers will not remember what you said or did, but they will remember how your bank makes them feel. The right technology can improve the customer experience and make customers feel loyal, satisfied, and motivated to bring more business to your bank.

May the coming year be filled with incredible customer experiences, low cybersecurity risk, and increased mobility and productivity thanks to tech device innovations and wise technology investments.

Jimmy Sawyers is co-founder of Sawyers & Jacobs LLC, which helps banks in five major areas: Technology Planning, Cybersecurity, Risk Management, Network Solutions, and Business Continuity. Our mission is to help our clients use technology securely, effectively, and profitably to better serve their customers, comply with laws and regulations, contain costs, and compete. Making Banks Better™. To learn more, visit www.sawyersjacobs.com , call 901.487.2575, or email jsawyers@sawyersjacobs.com.