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Technology Trends and the opportunity costs of early adopter and late majority credit unions

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Table of Contents

Statement of Issue

Technology trends and the opportunity costs of early adopter and later majority credit unions is a subject most in the industry have yet to discuss in depth. Though technology trends, such as "data science" and "big data", are rampant buzzwords in any relevant business these days, a much more focused analysis of general data shows us that implementing a strategic technology plan in this era of digital transformation is paramount for the success of credit unions.

A focus on the future must include a greater transition and infusion of more intuitive technology in order to quickly adapt to marketplace needs of our community and members. Whether solutions are maintained in house or outsourced to partners, technology must be secure, efficient, and reliable. More than ever, members have an endless array of options that allow them quick and easy access to all of their financial needs, regardless of the preferred channel of interaction. Credit unions are faced with contemplating challenging questions to remain relevant: Are we a financial services organization looking to catch up with technology? Or can we shift to a technology company that excels in providing financial services to our community? Trust is the key, but how do we develop the personalization through social media and other digital channels that members turn to?

While personal service and going the extra mile will always remain a staple of the credit union industry, requiring the member to engage in a personal relationship is not a sustainable model for growth in today's financial industry, where digital services are so readily available. Millennials and many other members consuming your financial services are less engaged and bound by personal relationships than members of the past. A shift towards utilizing technology to regain personalization is necessary to continue to thrive as the "go to" source for financial well-being in the communities we serve.

The technology innovation curve is excelling at a pace never seen for other innovative landscapes in history. It has been roughly 10 years since Apple kicked off the digital era, and introduced us to the first smartphone. As the youth of this age head off to middle school, they will likely carry with them a device significantly more powerful than the one you are using. These tremendous advancements in technology have reshaped our lives and have also forced financial services to become commoditized.

As not-for-profit organizations focused on the financial betterment of their members and local communities, credit unions are too often leery of the varying obstacles that some large-scale technology changes can present. The reality is that other financial institutions are pouring substantial amounts of resources into technologies that are often not an option for most credit unions. Despite the vast majority of credit unions being well capitalized and poised to spend dollars on new opportunities, the ability to understand the inner workings of technologies to ensure they make the proper decisions at the proper time is reaching complexity at a rate that ironically aligns with the very technologies looking to be adopted.

Significance

While most credit unions will remain as a financial services organization looking to catch up with technology, they key is acknowledging that technology now drives member acquisition, engagement, and retention. While Millennials are often focused on as a segment highly engaged with all services through technology, Centennials born into the digital era may never realize there is another avenue. Nevertheless, credit unions should not lose sight of the other generations, or segments of members, who also happen to be highly engaged with digital technologies and self-service financial offerings.

Millennials are the hot topic on most credit unions strategic plans, but do those plans include a technology strategy that spreads personalized digital services across all its membership? With good digital tactics and analytics, the same technology can be leveraged to personalize member experiences and marketing to individual members with more ease and likely more "bang for the buck". This is the type of member service that the credit union industry is known for and prides itself upon, delivered in a fashion aligned with today's digital world.

Mobile banking is a solution that exemplifies this scenario of when to adopt or innovate these new digital technologies. The majority of credit unions under 100 million have found themselves in the late adopter category in regards to this digital technology, leaving them without a channel that their membership can utilize to stay connected 24/7, regardless of geographic location. The impact of mobile adoption is quantified by the 2000% increase in mobile e-commerce between 2010 and 2013 (Ghahermani). Twenty percent of mobile payments are online bill payments through financial institution mobile apps (Ghahermani).

Are these credit unions falling behind on the curve or do they have a better understanding of what their members need and value from their credit union? While the gap in adoption of smartphones between millennials and older generations has closed, mobile payments do not share the same adoption (Ghahermani). Forty-one percent of millennials make a mobile payment at least monthly, while only nine percent of consumers age 55 or older do, according to a survey by creditcards.com (Ghahermani). This shows the likelihood of higher adoption of new mobile-based services from financial institutions among younger members who form a growing percentage of membership in credit unions nationwide (Ghahermani).

In the Credit Union Times article titled *A Primer in Digital Wallet Technology*, a focus on the security concerns of consumers states that 56% of smartphone owners won't make mobile payments because of perceived security concerns (CO-OP Financial Services). Having reliable and efficient technologies cannot be the sole focus in the digital transformation process.

Statistics like these are troublesome for credit unions looking to adopt new, often highly expensive technologies. Is it best to cater to your current membership, as the average age of credit union members typically resides in the mid-forties? Or is it more advantageous to adopt newer, more costly and potential lesser perceived secure digital channels and technologies?

Despite the lower profitability of a younger millennial-dominated membership, how can we attract, retain, and engage all members across all channels with these costly ventures?

Technology is likely already a significant percentage of the operational expense endured by all credit unions, though it is not always easy to see the value versus the cost. Most credit unions lack robust models to validate return on assets or investments, and often opt to follow the industry trends instead of spending resources and dollars on innovation. Innovation costs are often high, and never guarantee returns – not something likely to be sought after by an organization that cautiously sits on 15% net worth ratios! Regardless of the risk tolerance, credit unions are structured in agile ways, with less bureaucracy that provides them an advantage over larger financial institutions (Eagan).

Most people do not think of credit unions as innovators or disruptors. The fact is, credit unions were significant disruptors to the financial industry roughly 80 years ago. Credit Unions were also innovators, being the first U.S. financial institutions to introduce internet banking and mobile banking (Filippo). The ability to lead change through chance is rooted in the credit union industry and must resurface with a focus on digital technologies and digital planning processes. Waiting to adopt new solutions for members or for staff poses a risk to the ability for your credit union to continue its relevance.

Adoption of new solutions for technology does not have to be a complete revolution. It must, however, be timely and introduced with a structured process that allows for quick iterations of success or failure for the constantly changing digital landscape. As we have seen in the past, focusing on how the existing technologies are used can become a revolution. The shared branching network empowers participating credit unions to present their members with over 5,200 locations throughout the world (Stanislav).

An investment of time, money, and cultural changes towards strategic technology planning and digital transformation processes should be a prime focus for all credit unions to ensure proper evaluation, planning, budgeting, implementing, and adoption are all successfully executed. We live in a time of disruption and are faced with the transition from an analog world to a digital existence. The prior world revered capital as the ultimate value, and sought ways to keep capital at rest through slower processes and increased bureaucracy.

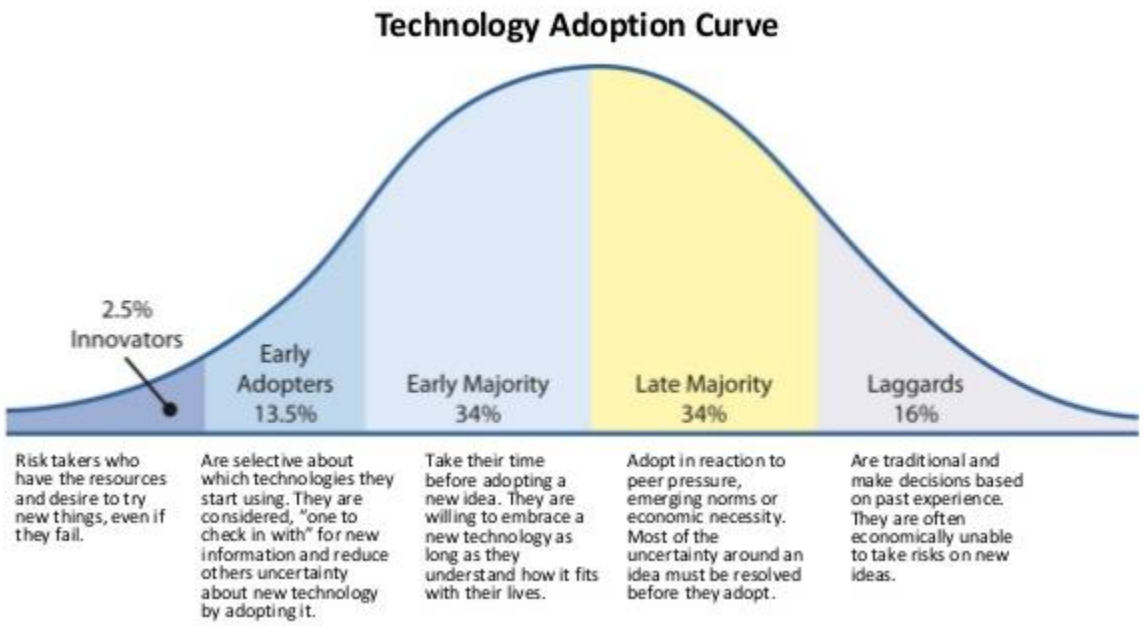
The new digital world applauds risk, speed to market, and personalization. Everyday credit unions are faced with decisions regarding properly investing in technology; it requires us to make increasingly difficult choices concerning our members' money and staff time. Should we continue the analog world's processes and select the lowest risk solution? Should we choose the easiest to implement and the lowest upfront cost? Or should we stick with the tried and true technologies once they've seemingly passed the test with our peer credit unions? In any case, our members want what they want when they want it – immediate access through a digital channel. If we cannot set, or at least keep pace, we cannot remain relevant.

Research

It is critical that every organization adopt technologies at the right time, though timing is different depending on your credit union. Regardless of the solutions being evaluated or implemented, the digital transformation process is too often falling into one of three buckets, with very little benefit to the members or staff:

- Too early = wasted capital
- Too late = missed opportunities
- Poor Implementation = bad member/staff experience

The desired results we all wish to achieve may differ from organization to organization, though we all strive to find the right timing in order to avoid opportunity costs of adopting technology too early or too late. Everett Rogers utilized the bell curve in his book, Diffusion of Innovations, to best explain how people adopt new technologies where there are many different rates. Rogers clarifies that some of the primary differentiators between adoption falls back to the individual's psychological disposition to new ideas.

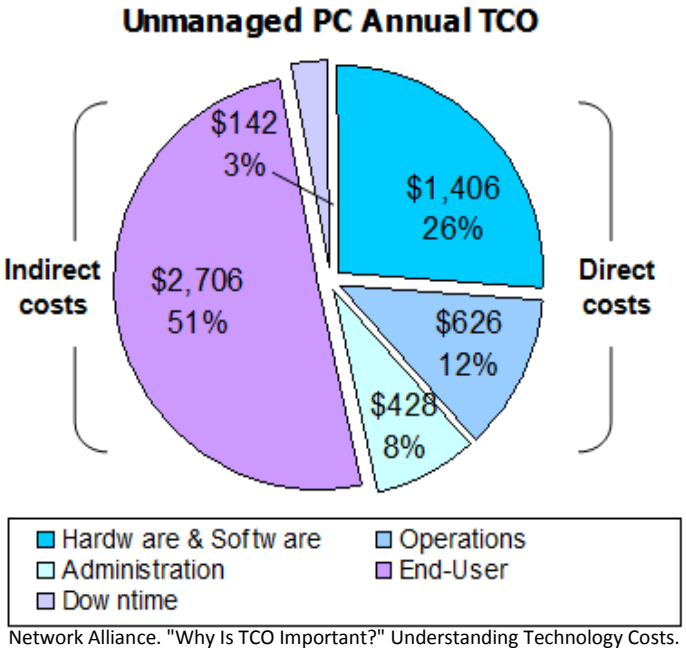


Source: Rogers, Everett M. *Diffusion of Innovations*. 3rd ed. New York: Free of Glencoe, 1983. Print.

This psychological disposition only compounds the significances of establishing a digital transformation process within your credit union, which falls under a sound strategic technology plan. Regardless of the timing in which your organization adopts the newer technologies, you're then faced with explaining that technology or digital channel to your membership or staff for their adoption. In order to focus in on this conundrum, we'll look at some cons of mistimed implementations, as well as some recent examples of technologies in the financial industry with examples of both early and late adoption.

Cons of Mistimed Implementation

As we all strive to be the best stewards of our members' dollars, the Total Cost of Ownership should be considered a part of any strong strategic technology plan in order to present an accurate technology spending analysis. A well-structured digital transformation process should specifically focus on understanding all the costs associated with a change and the timing of when to adopt new technologies. The ongoing operational costs are often overlooked or unaccounted for in many organizations, despite these expenses making up the largest portion of the Total Cost of Ownership (Network Alliance). While the initial purchase cost of personalized computers continues to drop, a 2016 study by Network Alliance, shows the excessive indirect costs once the usage of the equipment is factored in to quantify the network, storage, and other items far too often overlooked.



Network Alliance. "Why Is TCO Important?" Understanding Technology Costs. Network Alliance, n.d. Web. 6 Oct. 2016.

The study further explores the cost of ongoing operational expenses. Despite the goal of purchasing new technologies to save money, if your process doesn't have an understanding of the expenses to support and maintain the new solutions, the Total Cost of Ownership could be misinterpreted. The decision to adopt new technology, before having processes in place to divulge these true cost, can further complicate the decision of when to pull the trigger.

IT Spending Benchmarks

The average SMB spends 6.4% of its annual revenue on IT expenses.	AMR Research
The average trade association spends $74,000 on hardware and software every year.	American Society of Association Executives
80% of total IT costs occur after the initial purchase.	Gartner, Inc.
An unmanaged PC costs $5,000 per year.	Gartner, Inc.
Employees spend 30 minutes per week trying to fix PC problems or helping a co-worker.	Compass America
On average, firms spend $700 per user per month when all IT expenses are factored.	Gartner, Inc.

Network Alliance. "Why Is TCO Important?" Understanding Technology Costs. Network Alliance, n.d. Web. 6 Oct. 2016.

Whether implementing too early or too late, credit unions processes must also have a good understanding of their business to match the right technology to their needs. In several cases, credit unions that have tried to adopt technology early without a full understanding of their member's desire for digital channels – such as mobile banking apps – are caught trying to determine why acceptance levels are lower than projected (Packer).

In his Flex article, Preston Packer outlines 5 key areas in which there may be member hesitation to accept the technology adopted by credit unions:

1. **Security Concerns:** Mobile banking security has been consistently identified as the top barrier to adoption. General security concerns will keep a percentage of your members from moving to new technologies, and specific concerns such as rogue apps that have the potential to steal mobile banking login credentials will certainly deter some members from embracing your mobile app. It is up to credit unions to sell their cybersecurity as a strength, because in reality, banking via a mobile app is as safe as walking into the credit union and interacting directly with a teller, and it is actually much more secure than banking through a browser on a personal computer. Why? Because mobile banking providers can control the security through the app much easier than through a browser.

2. **Visibility:** Especially with aging populations, using a smartphone's small screen may prohibit some members from downloading mobile apps. The difficulty of seeing and typing on smartphone screens can pose limitations in using mobile devices for financial services. Educating these members on using your credit union mobile app on tablets, with a larger screen, may alleviate this concern.

3. **Usability:** How easy is it to effectively use your mobile app? Are there too many steps for what should be a simple transaction? Are users able to access all the necessary data they need to make meaningful transactions? Often, the services available on mobile apps are too basic, and they simply augment what can be done on internet banking. Remote Deposit is a feature that enables credit union mobile apps to stand out over credit union internet banking and can be touted as a reason for members to begin the download.

4. **Fees and Data Usage:** Most credit unions do not charge fees as a mobile banking provider, however, some still do and this additional charge can be a deterrent. But even for CU's that don't charge a fee, cell phone companies still charge for data. And there are budget-conscious people who monitor their data usage very closely, which can be a reason that people avoid mobile banking.

5. **They simply don't need it:** A 2015 survey found that 87.9 percent of U.S. adults did not use mobile banking because they felt their banking needs were being met without it.

Source: Packer, Preston. "5 Reasons Why Your Members Aren't Downloading Your Mobile Banking App." FLEXcutech, n.d. Web. 2 Aug. 2016.

Early Adoption and Apple Pay

First we'll examine the risks and the rewards of being an innovator, or early adopter of new technologies with a focus on mobile payment technologies – specifically the Apple Pay solution. The decision to adopt this strategic technology solution presented financial institutions the challenge of integrating it into their digital transformation processes as early as late 2014. Many credit unions today are still debating when to adopt. Irrespective of the technology solutions being evaluated and reviewed, the risk of adopting too early can be extremely costly if your membership fails to accept and embrace the new solutions. Even worse, if the solutions are not secure, efficient, and reliable, you may quickly find yourself looking for any way out.

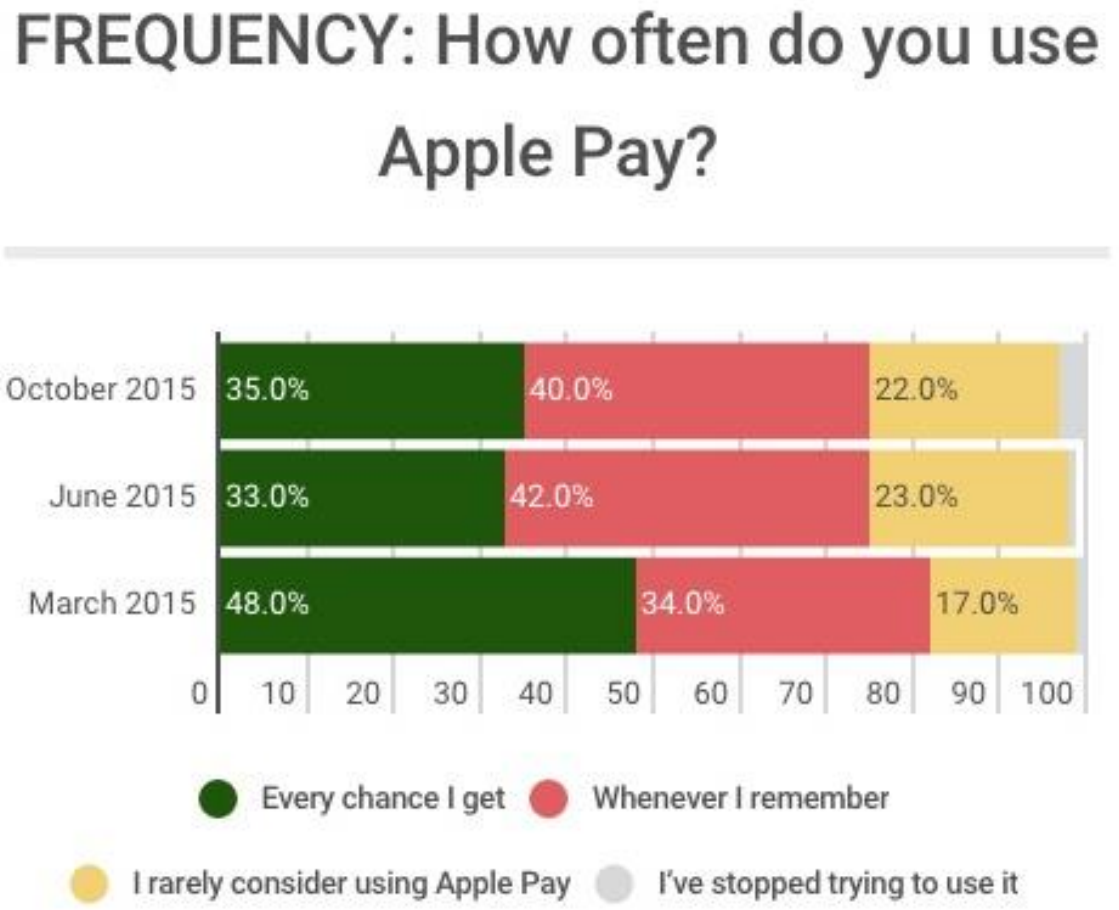
The risk of low member adoption may speak for themselves. Without the adoption, there is little gain in the likely projected cost shift to a more efficient channel, and you may find yourself locked into a three to five year contracted expense. Over 120 million Apple Pay capable phones have been purchased in the US (PYMTS). Knowing that Apple kicked off the digital transformation era, it would seem, at first glance, that their venture into the financial space would be a solution all credit unions need to adopt quickly. Most decided not to do so.

Source: PYMNTS. "Apple Pay Adoption Stats." *PYMNTS.com*. N.p., n.d. Web. 6 Oct. 2016.

While 23% of Apple users are trying Apple Pay, there is a decline in the repeat usage. Surprisingly, the top reason for not using this digital channel was forgetfulness. We're in an industry that yearns to become "top of wallet". We're in a digital era where members crave ease-of-use solutions. Investing in a digital technology such as Apple Pay seems like a perfect fit. Seeing less than stellar results, however, leaves many of us scratching our heads – how can

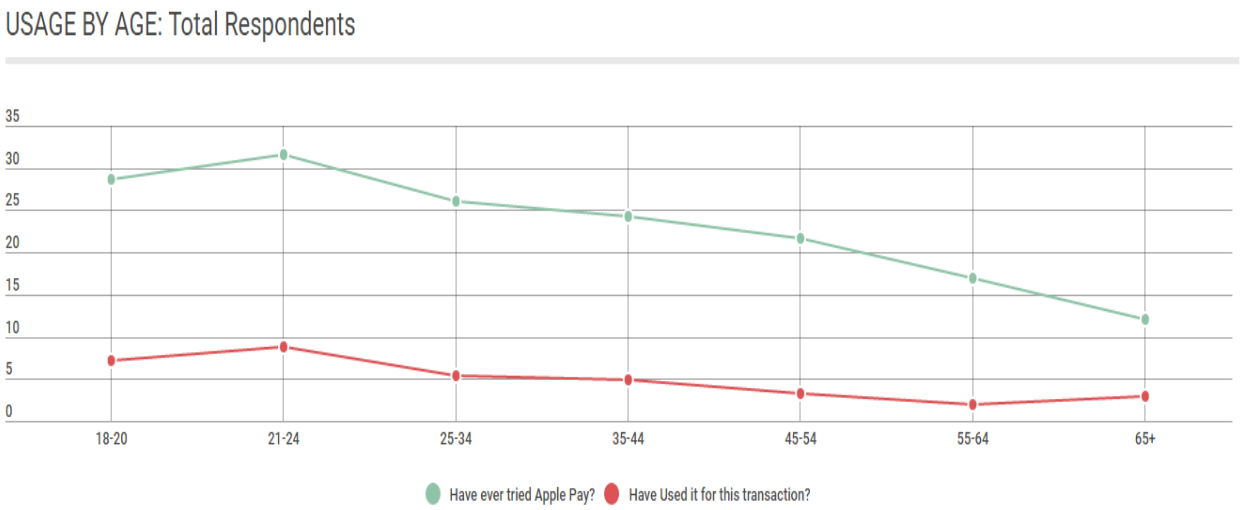
we become “top of wallet” in a digital race if we cannot become “top of mind” for the member when the tools are already available?

Eighty-three percent of consumers across all financial institutions who are presented with the option to utilize Apple Pay, haven’t bothered to try it out (PYMTS). When someone with an iPhone 6 is standing in front of an Apple Pay ready POS (Point of Sale) terminal that is ready to accept this form of mobile payment, the chance the consumer will actually pay with Apple Pay is about 1 in 20 (PYMTS). Currently, penetration of this digital technology remains low, and at places of purchase where habituation is crucial – food services, gasoline, everyday spend – consumers and merchants both are prioritizing around other methods of cloud-based “checkout”, like mobile order ahead.



Source: PYMNTS. "Apple Pay Adoption Stats." *PYMNTS.com*. N.p., n.d. Web. 6 Oct. 2016.

With this frequency in use significantly declining, many organizations see Apple Pay as a key example of early adoption not paying the dividends. While more mobile-first users, often found in the millennial segment, are more receptive or appreciative of the services, it comes as no surprise to find that the more seasoned generations tend to shy away from this digital channel.



Source: PYMNTS. "Apple Pay Adoption Stats." *PYMNTS.com*. N.p., n.d. Web. 6 Oct. 2016.

In a case study with Georgia's Own Credit Union in July of 2015, we find similar expectations entering the digital technology implementation process as an early adopter of Apple Pay. The expectations and results are reflective of the operational viewpoint of the products success approximately 3 months after launching. The decision-making process was focused on gains towards demands from members via social media, staying relevant with competitive forces, and an opportunity to curb fraud losses.

Decisioning:	**Mobile Pay (Apple Pay)**
Driving Decision to Implement:	Facebook/Member demand, additional fraud prevention, competition
Did it require CU Strategic Planning? (full CU involvement or partial)	Yes, partial

Source: Georgia's Own Credit Union Case Study

With approximately one year of Apple Pay in the industry at the time, and with the decision-making phase of the process underway the expectations (outlined below) placed on this new digital channel for members to conduct payments was not seen as the next great wave of the digital transformation era, but more in line with a necessary part of the growing digital presence. With a strategic technology plan in place to execute on this phase of the digital transformation process, Georgia's Own moved forward.

Expectations:	
Estimated Cost to implement:	16k
Estimated time to implement:	3 months
Estimated Annual Cost to maintain licensing for product:	N/A
Estimated Annual Cost to maintain technology infrastructure for product:	N/A
Estimated cost per transaction decrease for Member:	none
Estimated cost per transaction decrease for CU:	none
Estimated cost per transaction increase for Member:	none
Estimated cost per transaction increase for CU:	0.0015
Expected ROI:	N/A
Expected to require marketing cost to promote:	No, digital advertisement only
Expected to require a new vendor relationship:	No
Expected to require new department processes:	Yes
Expected to require additional staff:	No
Expected to reduce staff:	No
Expected to require Compliance Risk review:	Yes
Expected to require Information Security Risk review:	No
Expected # of Members to use the product:	2%
Expected Fraud Increase:	nominal
Expected Fraud Decrease:	minimal
Expectation for auditor/examiners raise questions on this product:	Risk assessment to be completed
Estimated to Increase or Decrease Cyber Security Posture:	
Estimated to Increase or Decrease Member Retention:	nominal increase
Estimated to Increase or Decrease Member Growth:	No

Source: Georgia's Own Credit Union Case Study

After a launch date that found itself coming in twice the originally expected amount of time to implement, the digital product was live to members. The cost and member usage – or acceptance – expectations set (outlined above) are almost identical to those found after 3 months with the product active (outlined below). Becoming early adopters of the Apply Pay technology doesn't reflect as a digital transformation home run when looking at the numbers, but was the time to adopt the correct decision? For those two percent, or roughly 3,600 members actively using the product of their choice, this is a definite win.

Results	
Is it fully or partially implemented:	Partial
Actual Cost to implement:	Debit: $8,500 Credit: $7,500
Actual time to implement:	6 months
Actual Annual Cost to maintain licensing for product:	nominal cost
Actual Annual Cost to maintain technology infrastructure for product:	nominal cost
Actual cost per transaction decrease for Member:	nominal per
Actual cost per transaction decrease for CU:	nominal per
Actual cost per transaction increase for Member:	nominal per
Actual cost per transaction increase for CU:	nominal per
Expected ROI:	
Did it require marketing cost to promote:	None, digital advertisements only
Did it require a new vendor relationship:	nominal requirement
Did it require new department processes:	nominal requirement
Did it require additional staff:	nominal requirement
Did it reduce staff:	Nominally
Did it require Compliance Risk review:	nominal requirement
Did it require Information Security Risk review:	nominal requirement
Actual # of Members to use the product:	nominal # of members
Actual Fraud Increase:	nominal increase
Actual Fraud Decrease:	nominal decrease
Did auditor/examiners raise questions on this product:	nominal examiners
Did it Increase or Decrease Cyber Security Posture:	Nominally
Did it Increase or Decrease Member Retention:	No
Did it Increase or Decrease Member Growth:	No

Source: Georgia's Own Credit Union Case Study

While not all credit unions are poised to adopt new technologies that appease two percent of their members, all financial institutions face these dilemmas of being on the cutting edge of the digital transformation and burdening themselves with the high cost of early adoption. Only 1 of 5 Apple Pay "Launch Partners" was a credit union – Navy Federal, who happens to be significantly larger than all other credit unions, and most banks (PYMTS). Now, however, credit unions represent almost 60% of Apple Pay financial institutions (PYMTS). With numbers trending closer to 50% of rating approvals in several key categories, is it still too early to adopt? Or is it too late?

Source: PYMNTS. "Apple Pay Adoption Stats." *PYMNTS.com*. N.p., n.d. Web. 6 Oct. 2016.

Late Adoption and Remote Deposit Capture

Next, we'll focus on the risks and rewards of being a late adopter of proven technologies with a focus on self-service technologies – specifically the Mobile or Remote Deposit Capture technology. While you would be hard pressed to find a large player in the financial services space who doesn't promote using your smartphone to help them process your check deposits, many credit unions have yet to introduce these technology solutions to their members. The risk of adopting technologies such as Mobile or Remote Deposit Capture are becoming more and more evident now that this technology has been around and was legalized by the Check 21 Act (Check Clearing for the 21st Century Act).

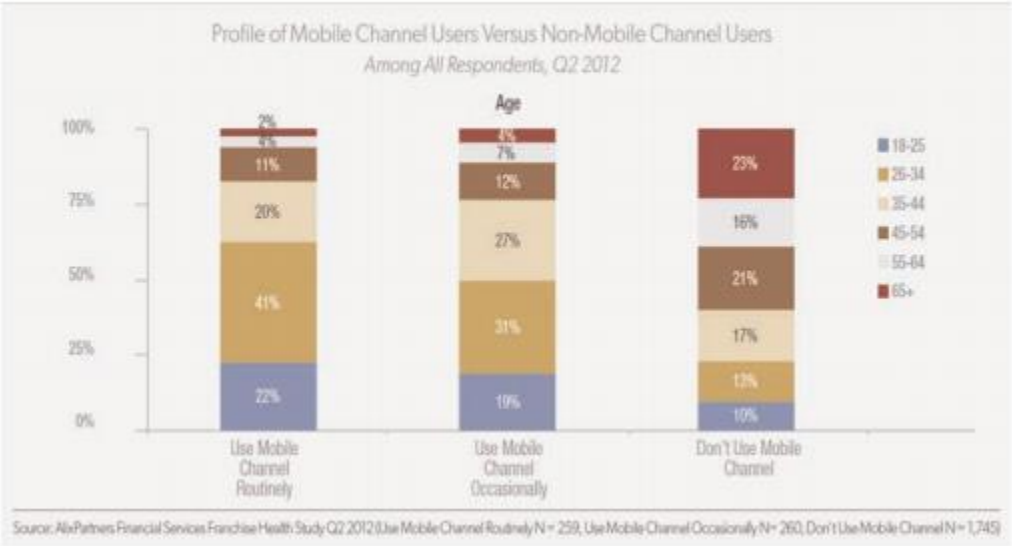
A few years after the digital era began in 2007, banks began utilizing smartphone technology to allow their members to record a check image using the device's camera. This feature has now become one of the most sought after functions of having a mobile app for a multitude of reasons benefiting both the member and the credit union operations overall.

For those yet to adopt, the pay-off can be tremendous. Studies show that there are typically thousands of enrollments within the first month of implementation, immediate risk analysis available, and reductions in the cost to process check deposits (WAUSAU). "Smartphone and tablet adoption are truly altering the ways that people shop and transact business," explained Daniel Simon, Regional Sales Manager, Mitek Systems, Inc. "And this dynamic is now redefining the way consumers use and expect to use retail financial services." Simon noted that the number of consumers using mobile banking in the United States will grow from 32.6 million in 2011 to 108.3 million by 2017, according to Forrester Research's 2012 Mobile Banking Forecast (WAUSAU).

Remote Deposit Capture, once a competitive advantage, is now a necessity for relevance in the ever-changing world of digital finances (WAUSAU). Much different than a traditional product line for consumer or real-estate loans, pouring member dollars into mobile application investments is often much harder to distinguish as a direct value back to the members (FISERV). The analog world is fading fast, and the speed at which we make decisions – both good and bad – are becoming essential to the ability to remain relevant, on top of retaining existing members, on top of attracting the next wave. While all members have personal financial needs, desires, and preferred channels, there is no arguing that an aging population exists among the credit union industry membership.

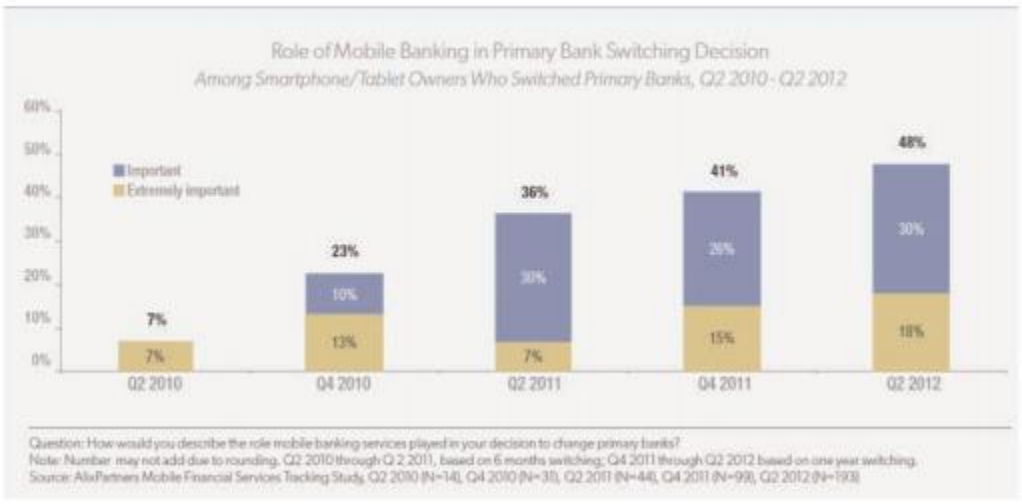
As credit unions incorporate millennials as a central focus of their strategic plans, missing out on remote deposit capture technologies can be a game changer – for the worse. With the demand for these types of technologies to exist within our credit unions, we can attract and retain the next generation of membership.

18-44 Year Olds Account for 83% of Consumers Who "Regularly" Use Mobile Banking

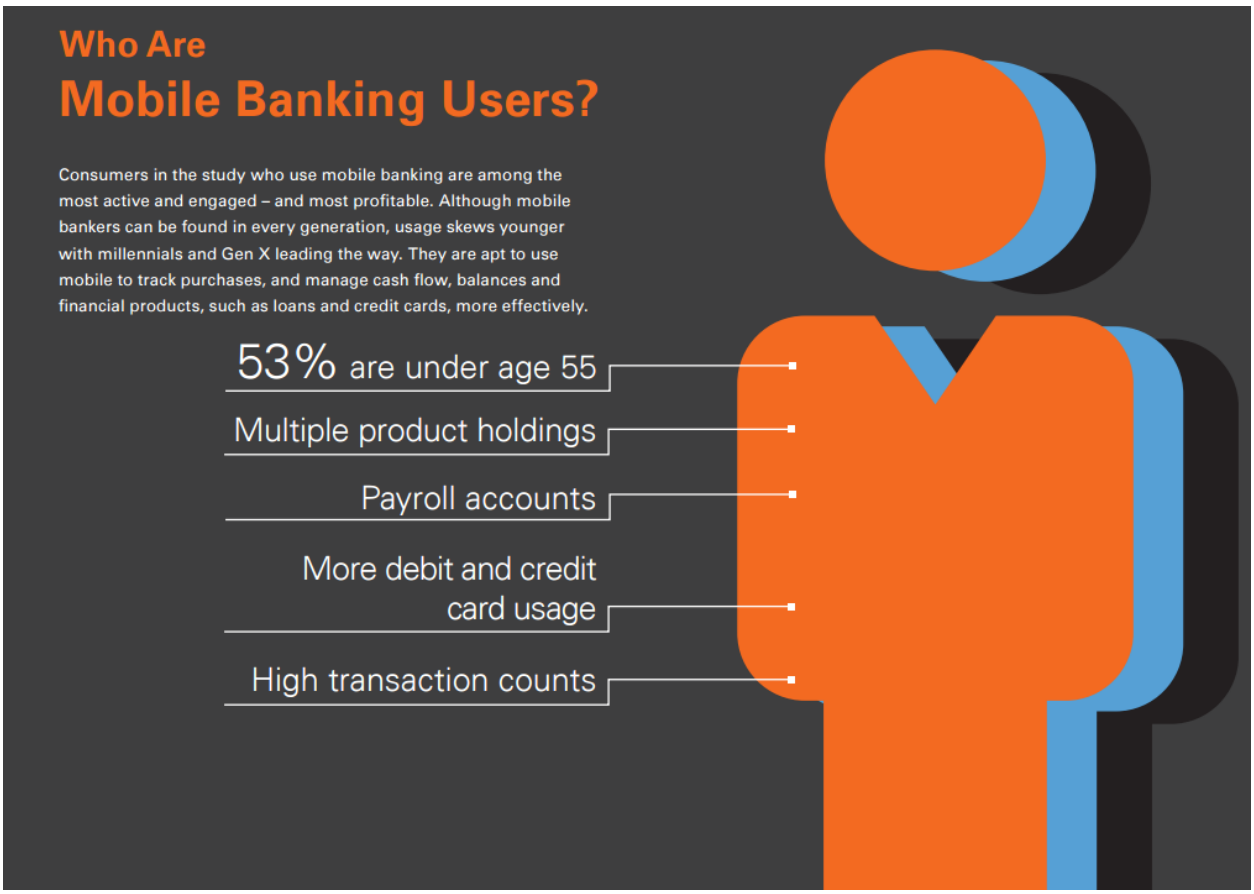


The retention piece may be even more critical. Being a late adopter of this particular technology may very well be a motivating factor for your existing members to switch to another financial institution for their checking needs and desires.

Mobile is Playing an Increasing Role in Consumers' Decisions to Switch Primary Banks



In a case study performed by Fiserv, in early 2016, we find more support that mobile banking users are the exact target audience most credit unions are seeking. Remote Deposit Capture can easily be a feature that helps persuade a new member to join, or prevent an existing member from taking their checking elsewhere.



Source: FiServ. "Mobile Banking Adoption: Where Is the Revenue for Financial Institutions?" *Mobile Banking Revenue for Financial Institutions*. FiServ, Jan. 2016. Web. 6 Oct. 2016.

In a case study with Georgia's Own Credit Union in July of 2015, we find results for a later adoption of the remote deposit capture technology. Expectations entering the digital technology implementation process as late adopter, were ripe with caution and risk. The analog-driven process included many teams, committees, and trial-and-error tests, with a throng of meetings along the way.

Looking back, it is easier to see that providing a mobile app feature such as remote deposit capture is an integral piece of a digital transformation to gain acceptance and confidence with your members and engaging them to further use mobile and self-service. A digital transformation process like this can easily increase your potential for deepening their product holdings, increasing transaction volumes and card usage. However, many of us still play by the analog rules of evaluation, then more evaluation, then even more evaluation, thus making the timing of adoption towards a seemingly "obvious" technology decision a hard call to make.

The decision criteria for Georgia's Own were likely in line with many other credit unions that have, or will adopt, remote deposit capture.

Decisioning:	**RDC**
Driving Decision to Implement:	Facebook/Member demand, competition, member benefit, reduce branch staff, smaller branch footprint, reduce cost of posting mail
Did it require CU Strategic Planning? (full CU involvement or partial)	Yes, partial

Source: Georgia's Own Credit Union Case Study

As was the scenario with the early adopter study, the expectations and results are reflective of the operational viewpoint of the products success.

Expectations:	
Estimated Cost to implement:	
Estimated time to implement:	3 months
Estimated Annual Cost to maintain licensing for product:	
Estimated Annual Cost to maintain technology infrastructure for product:	
Estimated cost per transaction decrease for Member:	none
Estimated cost per transaction decrease for CU:	none
Estimated cost per transaction increase for Member:	?
Estimated cost per transaction increase for CU:	
Expected ROI:	
Expected to require marketing cost to promote:	No, digital advertisement only
Expected to require a new vendor relationship:	Yes, blue point
Expected to require new department processes:	Yes
Expected to require additional staff:	Yes, if new back office procedure
Expected to reduce staff:	Yes, eventually
Expected to require Compliance Risk review:	Yes
Expected to require Information Security Risk review:	Yes
Expected # of Members to use the product:	5%
Expected Fraud Increase:	nominal
Expected Fraud Decrease:	no
Expectation for auditor/examiners raise questions on this product:	Yes, Risk assessment to be complete
Estimated to Increase or Decrease Cyber Security Posture:	
Estimated to Increase or Decrease Member Retention:	Yes, nominal
Estimated to Increase or Decrease Member Growth:	no

Source: Georgia's Own Credit Union Case Study

The results of the study are tightly aligned with the expectations set forth at the beginning of the journey for Georgia's Own.

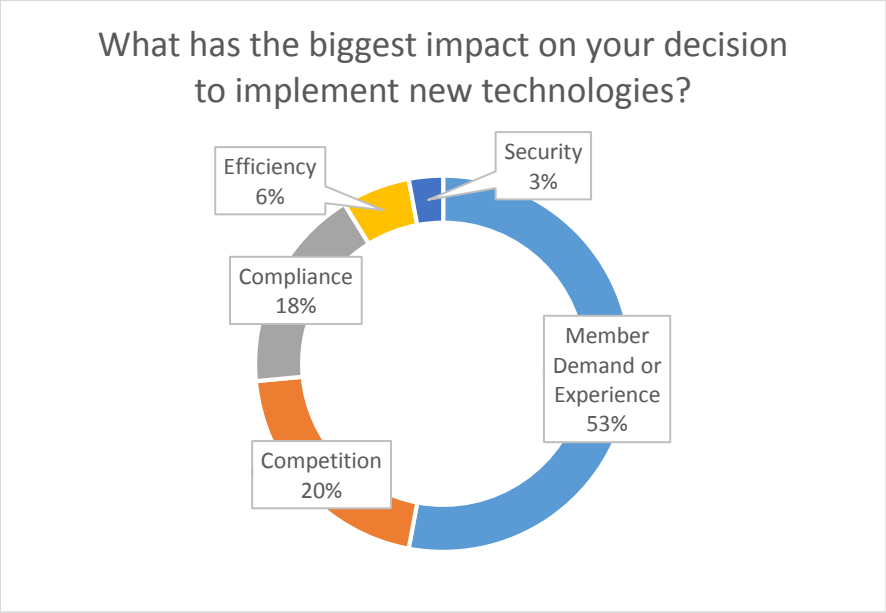
Results	
Is it fully or partially implemented:	Yes
Actual Cost to implement:	
Actual time to implement:	4 months
Actual Annual Cost to maintain licensing for product:	
Actual Annual Cost to maintain technology infrastructure for product:	
Actual cost per transaction decrease for Member:	
Actual cost per transaction decrease for CU:	
Actual cost per transaction increase for Member:	
Actual cost per transaction increase for CU:	
Expected ROI:	
Did it require marketing cost to promote:	None, digital advertisements only
Did it require a new vendor relationship:	Yes
Did it require new department processes:	Yes
Did it require additional staff:	Yes, to begin with
Did it reduce staff:	Not in back office, but product is reducing new hire staff for growth
Did it require Compliance Risk review:	Yes
Did it require Information Security Risk review:	Yes
Actual # of Members to use the product:	3%
Actual Fraud Increase:	nominal
Actual Fraud Decrease:	none
Did auditor/examiners raise questions on this product:	yes
Did it Increase or Decrease Cyber Security Posture:	
Did it Increase or Decrease Member Retention:	nominal
Did it Increase or Decrease Member Growth:	no

Source: Georgia's Own Credit Union Case Study

While total cost to implement strategic technology initiatives are often complex to ascertain, the cost of being a late adopter on some solutions can be astronomical. The ability to curb staff growth, while increasing member satisfaction, or even deepening member engagement through the use of technology, are key parts of the digital transformation; each credit union must come up with a structured process to guide them through the race.

Survey Results

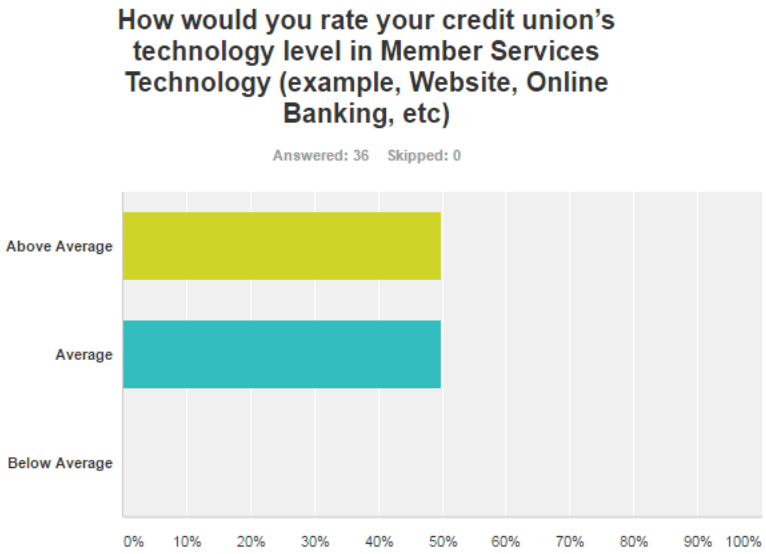
To better understand how credit unions of all sizes throughout the US operate when it comes to technology decisions, we conducted a survey in early 2017 towards those most likely to adopt new technology: the CUNA technology council members. The results show that credit unions ranging from 100 million to 10 billion in assets, and averaging at 1.5 billion, are closely aligned with driving force behind their decisions: the member. With little surprise, respondents provided feedback indicating member demand, expectations or experience were the biggest areas of impact on the decision to implement new technologies. Coupled with staying up to date with competition and remaining relevant for the member, we found that almost 75% of the credit unions surveyed were hyper-focused on staying true to the members they serve.



Source: CUNA Technology Council Member 2017 Survey

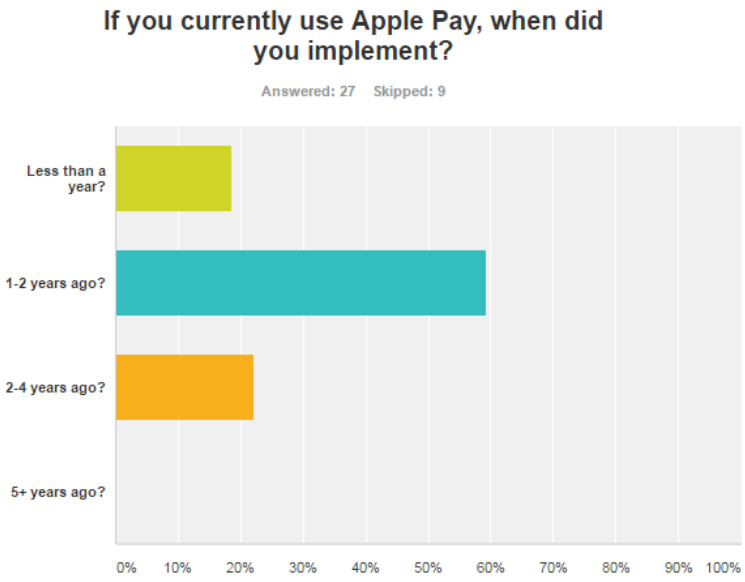
The strategic technology plans and structured processes should always align with your member needs and business models in the most proactive way possible. This, however, does not always correlate to larger size equating to better structure and processes, or even member needs. There will be good reasons to not adopt technologies simply because they are available in the marketplace. In our survey of these credit unions, two of the largest respondents of $4 billion and $10 billion in assets had yet to adopt Apple Pay. The largest credit union in our survey, at $10 billion, had also adopted Remote Deposit Capture within the past 24 months leaving them in the late adopter stage. While there may be sound reasoning for these decisions, the $10 billion credit union did provide a self-rating of only average for their member facing technology.

Overall, the respondents indicated that they are not seeing an overwhelming success in their own credit unions based on the decisions that have been made to date. There was a split level of self-satisfaction towards their own member facing technologies. Are these numbers good enough for our current, or potential members? Apple – and certainly Apple customers – likely wouldn't be satisfied with this average, so why should you or your members? While the survey didn't delve to the depths necessary for answering those questions, it does continue along to focus on operational efficiencies among these credit unions.



Source: CUNA Technology Council Member 2017 Survey

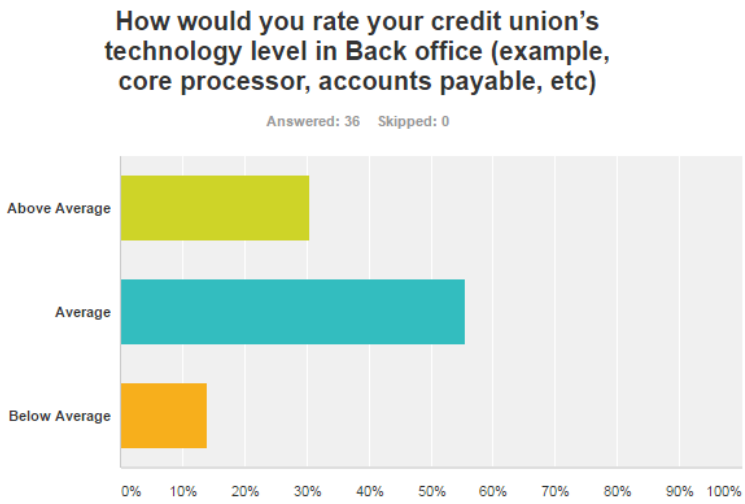
With half of the responses indicating no room to grow through their member facing technologies, only 30% of respondents believe that their own back office technology solutions are above average. Any process that may exists likely has the best of intentions but should continually be revisited, updated, and possibly written or re-written entirely to operate effectively in the digital era. Member facing technologies and back office technologies should be intimately tied together in order to provide the business efficiencies and technology scalability needed for today's face-paced market.



Source: CUNA Technology Council Member 2017 Survey

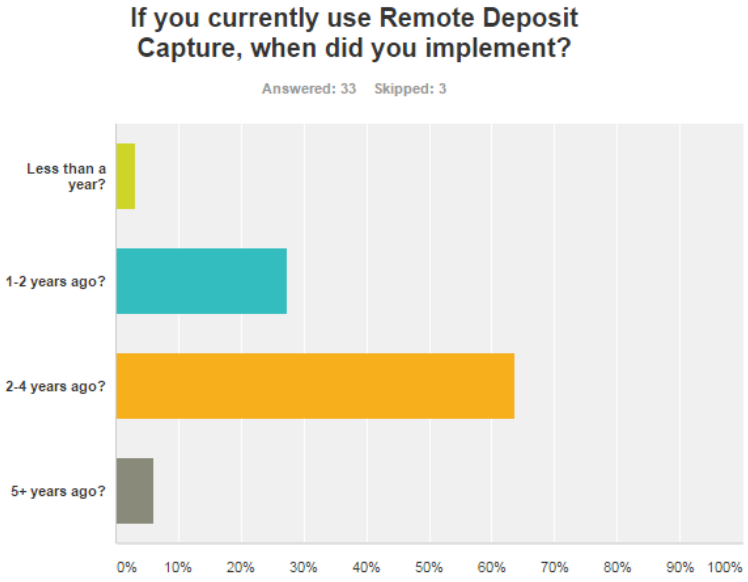
The speed at which these credit unions execute on their strategic technology plans and structured processes was not a direct measure obtained by the survey. We did, however, focus on the same two technologies discussed throughout our research towards early and late adoption.

Apple has yet to generate the same digital disruption in the mobile payments world as they found in some of their previous ventures. Despite that, our survey results show that the majority of credit unions were early adopters of this technology with over 80% providing the service in the first two years of availability. Does this reflect a strong strategic technology plan, a reactive process to a potential member complaint, or fear of a competitive market force? Very few credit unions would disagree that Apple Pay is an option their members deserve, but did the structured process to implement include understanding the decrease in interchange income or the increase in regulatory reporting?



Source: CUNA Technology Council Member 2017 Survey

The data analyzed in our survey also shows that most credit unions were, or still are, late adopters with remote deposit capture. The majority of those surveyed had not implemented these solutions until over five years after the technology was available. Unfortunately, a solution that has proven to provide large cost savings, reduced fraud, and increased member satisfaction was likely part of an analog world's technology plan.



Source: CUNA Technology Council Member 2017 Survey

Being an early or late adopter of new digital solutions is not a direct correlation to providing better member experiences in every case. These are concepts a sound strategic technology plan must account for. With a strong plan, quick fails or lackluster adoptions can be turned into big successes in the long run. Credit unions heavily focused on member experiences are in a great position to understand their members and what digital products and services they want or need through conversations. As conversations occur less and transactions become self-serving, strategic technology plans will rely heavily upon digital analytics to confirm member's needs, behaviors, and acceptance.

Recommendations and Solutions

Reasons to implement a structured process and strategic technology plan

Improve Member Experience –

To remain competitive in the marketplace and ensure that your members have as good, or hopefully better, of an experience as they get from the next financial institution, credit unions must stay up-to-date with the latest technologies available. From our CUNA survey, we confirm that credit unions are still "all about the member". In the digital era, speed to market of new technologies is more critical than ever to maintain the highest levels of member satisfaction and appease demand. As the credit union membership's needs and expectations shift, digital products and analytics become crucial to servicing newer members of all generations in our SEGs and communities.

In order to become proactive and remain competitive, credit unions should first consider determining where they are on the digital adoption scale, or find some measure of their technology adoption to better understand where their biggest "bang for the buck" can begin. A study by magnifymoney.com was performed in 2016 analyzing data from the December, 2015 5300 call reports. Through the study, they calculated a digital adoption score by assigning equal weights to all standard industry services offered and determined how many of these services were provided digitally by the credit unions.

As one may expect, the results concluded that larger institutions adopted the most advanced digital technology services. While the size of the credit union doesn't always show a relationship to the digital adoption score, the size of the credit union also doesn't always necessitate that they are the early adopters of technologies.

Asset Class	Average Digital Adoption Score
<=$250MM	42
$250MM-$500MM	75
$500MM-$1B	78
$1B-$2B	81
>$2B	83
Grand Total	46

Source: MagnifyMoney. "Bank and Credit Studies Data." M*agnifyMoney.com*. N.p., n.d. Web. 2 May. 2016.

Surprisingly, the credit union found most digitally savvy with the magnifymoney.com study was United Catholics, with just over $31 million in assets. This data goes to show that implementing a sound strategic technology plan and structured digital transformation processes can have immense impact, regardless of the size of the institution, when executed at the right time for the right member experience.

The Most Digitally Savvy Credit Unions

Top 5 Credit Unions

CU Name	State	Number of current members	Total Assets	Digital Adoption Score
United Catholics	CA	3,684	$31,170,316	100
Suncoast	FL	687,585	$6,920,280,851	100
Boeing Employees	WA	940,654	$14,471,060,884	100
Stanford	CA	55,221	$1,894,471,716	96
Service	NH	223,925	$2,778,692,094	96

Source: MagnifyMoney. "Bank and Credit Studies Data." M*agnifyMoney.com*. N.p., n.d. Web. 2 May. 2016.

The magnifymoney.com study goes on to clarify the reasoning for a strong focus on adopting new technologies and embracing change, by analyzing the membership and asset growth, compared to the digital adoption score. Adopting a new technology solution or introducing a new digital product at the right time for your members or staff is a consistently difficult decisioning process. When done correctly, though, it can have vast returns.

DAS Band	Membership Growth (6 months)
0-25	-0.24%
25-50	-1.37%
50-75	0.72%
75-100	2.63%
Grand Total	1.96%

DAS Band	Asset Growth (6 months)
0-25	-1.12%
25-50	0.23%
50-75	2.26%
75-100	3.85%
Grand Total	3.36%

Source: MagnifyMoney. "Bank and Credit Studies Data." M*agnifyMoney.com*. N.p., n.d. Web. 2 May. 2016.

Regardless to where your credit union lies in terms of adoption to new technologies, members will continue to expect them to be available and at least as efficient as your competitors. A decision will need to be made by your organization on whether to be an innovator, an early adopter, or part of the late majority. In the end, change will occur and technology is one of the keys to ensure your credit union comes out ahead and doesn't fall in one of the undesired sections of Rogers's bell curve.

While knowing your credit union's digital adoption score, and working to improve upon it is a good goal for the upcoming year, longer term visions must be applied across the enterprise to ensure that technologies are working securely, effectively, and efficiently for all your member-facing channels, as well as your staff operations. While some credit unions may seek technology as a tool to help advance their foothold on becoming their member's primary financial institution, others may simply wish to improve efficiencies in their operational expenses.

Reduce Operating Expenses –

Cutting costs, or "doing more with less", is a common theme amongst many credit unions today. Our CUNA survey research confirms this, showing over 70% of credit unions surveyed believe they have room for large gains in these back office technologies. Most organizations have sustained healthy growth over the past few years, and at times may have outpaced the processes and technologies they use to perform their day-to-day operations. Not only can new technologies provide better member experiences with alternate channels, but often times these newer digital channels conduct transactions at fractions of the cost of those performed manually by staff engaging with a member face-to-face. For those additional operations that take place behind the scenes, away from the members perspective, additional cost savings are likely possible with the automation of many manual tasks that are recurring in nature.

While there is buzz around artificial intelligence and the potential to offset many of the current financial processes, most credit unions can gain big efficiencies from identifying all the procedures their staff engage upon day after day, and focusing on those with repetition. Better utilization of existing technologies should always be a focal point in a good strategic technology plan and structured digital transformation processes, with recurring fine-tuning to match up with the changes in business processes.

Improve Security Posture –

Another big focus for all credit unions surrounds risk, and more specifically those risk from the area of cybersecurity. Newer technologies may be required to ensure compliance with the latest security demands for safeguarding your member's critical account or personally identifiable information, or your credit union's sensitive documents, such as the strategic

technology plan. As our survey results from the CUNA technology council members indicate, over 20% of technology decision are driven by compliance and security. In any instance, understanding the ins and outs of the security posture of new technologies is a trying process with many intricate, and often moving, parts. To tackle these challenges of the fast-paced digital age, a structured process must be implemented to help shorten the decision window.

Ransomware, DDoS, and Phishing are likely all topics being discussed at credit union executive or board meetings this year. While assurance that new technologies facing members and staff are secure, a strong strategic technology plan with structured processes will also envelope solutions that focus on inner workings that were once considered more "stand alone" security technologies. More and more operational resources are being required to focus on security postures for credit unions. Organizations can help curb resource hours and costs as they shift from the traditional information security positions of prevention towards more cybersecurity views of detection and incident response.

These types of digital transformations at a cultural level within an organization can greatly improve the structured processes and time to market of new innovations or adoptions. Many credit unions looking to shift the resource dollars on how security technologies are implemented or utilized, can find significant cost savings (Beuhring, Salous). Based on a 2014 study based on Cyberdefense, the cost spent recovering from a security incident can quickly add up making new strategic preventative technologies very attractive to be included in a well thought out plan (Beuhring, Salous).

Table 1. Whitelisting's annual cost for an organization with 800 users.

Cost type	No whitelisting	Whitelisting
No. of reimages vs. no. of rules	1 to 2 infections per week requiring reimaging of the computer	2 to 3 new applications per week requiring research and new rules
Cost per incident	US$50 to reimage a computer	System administrator's rate of $25 for 30 minutes
Lost productivity	$50 of user time waiting for delivery of a loaner computer	$25 of user time waiting for the engineer to whitelist an application
Annual cost	$5,200 to $10,400 plus greater risk of a major breach	$5,200 to $6,800

Source: Beuhring, Aaron, and Kyle Salous. "Beyond Blacklisting: Cyberdefense in the Era of Advanced Persistent Threats." *IEEE Security & Privacy* Sept.-Oct. 2014: 90-93. Print.

Develop and implement a structured process for adopting technology changes

Far too often, organizations make decisions on new technologies for the wrong reasons due to lacking structured, relevant, and efficient processes. With the large investments in capital, potential to increase efficiencies, or simply improve members and staff experiences, the lure of new technologies is habitually hard to decipher what is right for your organization and, more importantly, when is the right time to adopt these solutions. Staff in positions to make purchasing decisions may not be fully abreast of your credit union's strategic technology plan, if one even exists. This situation where a structured process doesn't exist can lead to decisions being poorly managed in various ways:

- "Wing it" – Partially informed decisions push new technology adoption
- "Fire drill" – Data breach forces update of outdated security
- "Siloes" – Right timing, but lack of communication, preparation and buy-in

Organizational leaders should focus on understanding their business needs for members and staff, evaluating their digital adoption aptitude or score, and spending time on developing and communicating a strategic technology plan for rolling time frames – all keys to a strong process. "The world has changed and the method of delivering financial products and services has eclipsed the business of banking," says Michigan First Credit Union President/CEO, Michael Poulos. "Over the years, most consumers have gotten the basics of the banking business, and there has been little innovation in that space. Where innovation is required is in the technical delivery of those products and services. Failure to understand those new methods and channels will lead to failure" (Cooke).

Business Unit leaders are faced with a difficult challenge – they can remain experts in their area of the business and all the potential technologies for that area, along with their interoperability with the rest of the organization. Alternatively, Business Unit leaders can focus on their business area and partner with others in their credit union – or within the credit union industry – to deliver technology solutions and digital channels necessary to provide the best member experience, with the most effective operating costs for the organization as a whole. This concept shifts ownership and trust towards procedures led by teams that can focus solely on the best solution for members and staff, and keeping up to date with market trends and solutions with constant research, evaluation, and measurement of the tools used.

Smaller credit unions may not have this luxury internally, and would need to partner with other credit unions or solution providers. Whoever sits on your strategic technology team or guides the process, the members should be innovative thinkers with time and resources to focus exclusively on a plan.

Almost every vendor has devised an attractive presentation to demonstrate what their technologies can provide to your credit union and why they outperform the competition.

A developed strategic technology plan will help outline a structured and repeatable process for selecting and implementing new technologies and digital channels. Continuous research of new technological opportunities, backed by sound analytics, should play a focal part in the plan. While far more solutions will exist than will ever find a need to be implemented at your credit union, understanding the options and how they can affect your members and business units is critical to moving forward with adoption.

Making time, resources, and funding available to evaluate solutions prior to implementation is a highly recommended step in the process. More times than not, vendors are more than willing to provide a proof-of-concept or pilot solution to allow real world interaction of the technology. Without knowing if the member and business unit needs are being fulfilled, a decision on procurement of new technologies is falling back on the "wing it" approach. Once conclusions can be drawn that a new technology meets or exceeds a member or business need, the technology team must ensure that the solution is secure and can integrate to the existing technologies – or those on the upcoming strategic technology plan. Without a process for viewing solutions from an enterprise view, we fall back on the siloed decisions where the full use of the solution never pans out.

Once a member or business unit need has been determined and solutions have been found to meet those needs, proper purchasing and implementation planning must ensue. Without the financial funding to back a change in technologies, many things can go wrong. With a strategic technology plan in place, credit unions can more easily see current expenses, current assets, and depreciations schedules, along with upcoming purchases, plans, and projects. All of these elements are essential steps in the process to help determine the most opportune time for a credit union to invest in changes in technology.

After determining the best timing to spend member dollars on new technology solutions or digital channels, the ability to implement those solutions necessitates critical decision making. While all solutions should be accompanied with layers of well-designed communication, changes to members and other business operations may require regulatory communications. Communicating to members and staff why the change is occurring, how it will affect them, and when their interactions will change, are all examples of some content to include in the communications phase of a structured process.

With any large scale implementation, ensuring the technologies are secured and operating efficiently should be conducted prior to presenting to any internal, or external, testers or trainers. Afterwards, training should be highly engaged by all potential participants to make certain every aspect of the new technology is working efficiently. Feedback should be encouraged and swiftly acted upon, if possible.

Part of the feedback cycle should incorporate additional rounds of evaluation and measurements of success to properly align, or confirm, proposed launch dates. Having a project plan, and sticking to it, can mean tough decisions are required to either introduce the

technology change as planned at the targeted time, or on budget. A more mature strategic technology plan with structured processes will help reduce these potentials, along with other scope creep that may otherwise arise. It is also critical that the process itself be reviewed and revamped in a similar cycle.

While there may be additional goals of a strategic technology plan, some of the key benefits of a structured technology change process – or digital transformation process – should hone in on these areas:

- Cost Savings
- Member Satisfaction
- Employee buy-in
- Competitive Advantage
- Continual Improvement
- Shortening decision windows

In a digital world of every changing technology, it has become both harder and easier to remain connected to the members we serve and provide the financial services they deserve. Determining which solutions will best enhance our member and staff experiences, unravelling business insights from a digital world of data, and securing information across an ever growing number of connected devices is a large undertaking on any timeline or budget. Despite that, deciphering the best time to tackle each is a focus all credit unions must become intimately engaged with to ensure future success.

The most successful credit unions start with a strategic focus on people – both members and staff. We cannot forget the criticality of the human connection that energizes our business as we strive to stay relevant with newer technologies. Members and staff will need to be positioned to adopt newer technologies, and cannot be left begging for them to come.

A well-organized strategic technology team and plan with properly structured processes, will help to ensure that your business, member and staff needs are more often met, and rarely over or under sold. The team should be made up of multiple representatives from throughout the organization, most commonly having roles such as: strategy, innovation, marketing, product development, member impact, operations, and technology. A credit union is more likely to succeed by diversifying this team among various ranks and roles throughout their organization.

When your credit union makes the decision to invest member dollars into new endeavors, having a process to rely upon is a necessity that all organization should possess. The questions of when to adopt new technologies will become more evident, and the measurements to warrant the correct decisions were made will flow with more ease. Your credit union will be faced with the decision of when to implement less often, as the needs versus opportunities will become more engrained in the day-to-day culture as technologist and business unit leaders partner together on new ventures.

Summary and Conclusions

Summary

We must continue to serve the member through traditional channels, while also integrating a seamless digital platform where the member receives personalized service through the Omni-channel approach – preventing repeat marketing, sales pitches, or just plain missing of opportune point in time services that the member needs. Members crave the personalization and levels of service that the credit union industry hangs its hat on. With the pace of change and swarm of channels and products that exist today, it is nearly impossible for staff to maintain that level of personalized engagement with each and every member.

Technology is only a tool, but one in which each credit union should heavily invest under the guidance of a structured process and a strategic technology plan. There is not a secret technology adoption recipe that can be copied; there is only your credit union's recipe that does or doesn't exist.

If a plan and structured processes exist within your organization, it may need tweaking to ensure relevance for the digital era. The outdated culture of forming "tiger teams" for year-long investigations of a single product or technology can place your credit union at great dangers of being a late adopter and making untimely decisions. A strategic technology plan and a process for your digital transition should always look to ensure security, efficiency and reliability of new solutions.

Application of your structured processes should always focus on the members and your core values. A good recipe can take pieces from others and incorporate twists to produce something spectacular and unique. Finding flexibility and speed in the digital era are critical components that processes should be built upon. A high performing process must also account for failures, and ways to engage quick iterations of failures to reduce long term, costly investments.

If a process doesn't exist within your credit union, you are at risk of becoming an early adopter towards unnecessary or poor technology changes. You may have the rationalization to understand that a digital transformation of your technologies is needed to keep pace, but without structured processes your culture and business operations may remain stuck in the analog world where "quick fails" are not tolerated or absorbed easily.

We are at a unique point in time for all financial institutions where capital is still king; however, risk and relevance are quickly being more highly rewarded. Credit unions must leverage their innovative and disruptive spirits to combat with the uprising of FinTech's and the resources of mega-banks. Members deserve personalized, meaningful service. Credit unions exist to provide that need and must seek structured processes to rise through the digital transformation at the right time. The concept of "people-helping-people" is still extremely relevant in today's world; now, more than ever, it relies heavily on a tool called technology.

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