



The second of two reports on digital transformation in banking.

THE FUTURE IS DIGITAL: Voice Technology, Open Banking, and the Future of U.S. Financial Services

Our prior [SRM Academy report](#) explored how legacy systems and processes are impeding most bank and credit unions' ability to respond to the digital revolution being driven by their customers and members. The adoption of a variety of innovations designed to deliver convenience as well as continuous connectivity is moving consumers away from brick-and-mortar interactions in favor of digital engagement.

Our report also demonstrated why regional and community institutions can no longer take a "wait-and-see" approach given the significant investments being made by the large national and "digital-only" banks. Since the global economic collapse a decade ago, [\\$2.4 trillion has been deposited](#) in the top three banks in the United States — a warning indicator that should cause immediate concern for most other institutions.

Many of the technologies entering the mainstream in financial services can level the playing field for banks and credit unions competing with these giant institutions. While the largest institutions enjoy the benefit of immense scale, technology has now made it possible for regional and community institutions to economically deploy new, best of breed technologies to attract and retain customers and members who prefer to do their banking with less monolithic organizations.

This report will describe how voice recognition and authentication could revolutionize the customer experience in digital channels and how APIs (Application Programming Interfaces) are lowering costs and speeding time-to-market for these types of new digital features. In addition, the report considers how the role of FinTechs is changing and how these organizations can provide advantages to institutions that seek partnerships with them. Lastly, a view to how open banking – the emerging model being instituted by mandate in the European Union – is empowering consumers and institutions alike.

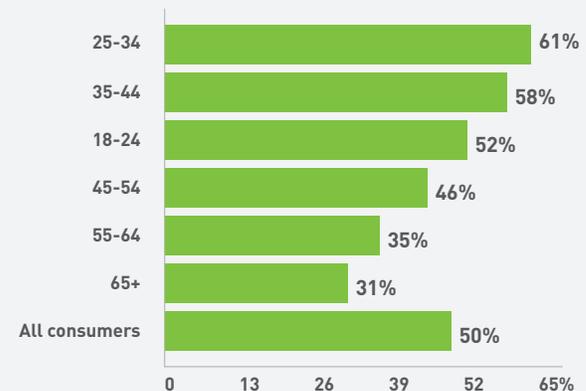
VOICE ACTIVATION – THE NEXT FRONTIER OF USER EXPERIENCE

The smartphone has transformed how people manage almost every aspect of their lives. Despite the convenience it provides, it has certain limitations that can create friction and hamper customer engagement. One of the more obvious examples of this is manual data entry, which often requires the use of a small keyboard with a touchscreen interface. Mistakes are inevitably made, information re-entered, and words not meant for the ears of children are uttered.

Despite some design advancements intended to reduce this friction (e.g., displaying balances and recent transactions without requiring login), a sober evaluation of even the most advanced mobile banking app will conclude that the UI/UX (User Interface and User Experience) is far from optimal when it comes to ease of use. Ten years after being "wowed" by the first iPhone, a significant number of consumers are looking for a better way of doing things.

Voice Vote

In a survey of consumers who have used mobile banking, more than half of the respondents said they would likely use voice control if it were available in those apps.

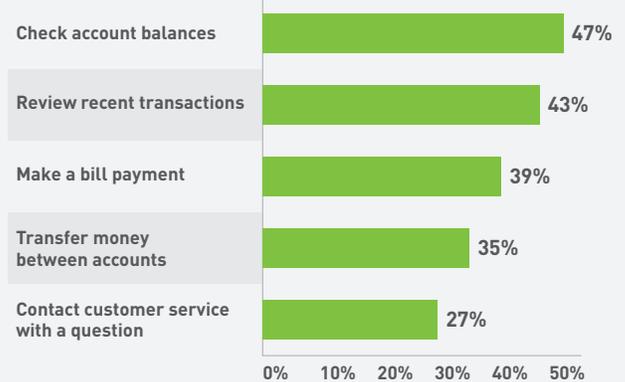


Source: Javelin Strategy & Research, 2017

The notion of a voice interface with a computer arose in the 1960s most notably in the sci-fi series “Star Trek” and the movie “2001: A Space Odyssey” featuring a murderous HAL 9000. As with many high-tech things first appearing in the genre of science fiction, this vision has become a reality in today’s world. Look no further than the explosive growth of Amazon Alexa and Google Home devices for evidence of the consumer’s desire for technology that addresses the current clunky requirement for digital data entry.

It seems that this interest extends into financial services. A recent Harris study revealed that over 30 percent of digital banking users surveyed want to see the introduction of voice-based services. Perhaps most interesting is that demand for this capability is not generationally-specific. Another Javelin report exploring interest in voice-activated mobile banking indicated that seniors over 65, typically not considered early tech adopters, also see the benefits of voice.

Consumers Most Likely to Use Alexa for Quick, Simple Requests



Source: Javelin Strategy & Research, 2018

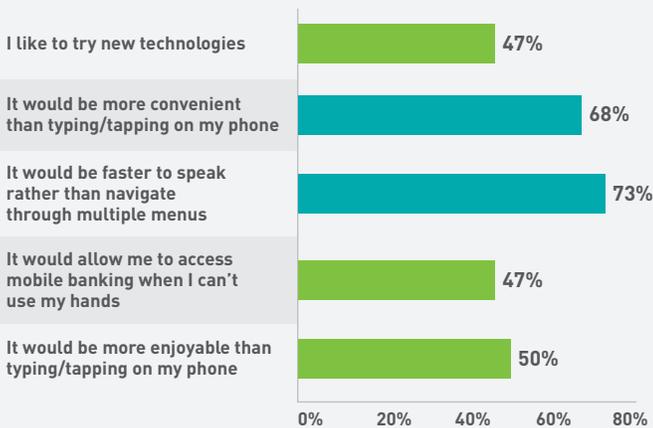
Beyond the convenience provided to consumers, voice technology could fundamentally impact the competitive landscape. Presently, UX and UI are the “Holy Grail” of digital banking. Across the industry, large investments are made each year toward ensuring that the apps and browsers through which customers and members do their banking are simple to use and replete with the latest features. The largest financial institutions have an advantage in this area given their resources, but if the UI/UX as it is today were to radically change (e.g., through the use of voice), that advantage could be diluted significantly.

The technology behind voice interfaces has already achieved mainstream status thanks to a variety of different players, not the least of which are the two large tech companies named above. In addition, voice recognition software continues to improve in terms of accuracy – in some cases topping 95 percent. Perhaps, most importantly, with voice, the end user controls the experience, which is not the case with banking apps at the moment.

Combine these benefits of voice with AI and institutions of any size can affordably deliver to consumers the type of service that fosters loyalty. For example, leveraging the mountains of data financial institutions have about their customers and members would no longer be out of reach for regional or community institutions. By using AI to properly analyze and apply the data held about their digital users, these institutions will be able to anticipate needs and personalize offers – all delivered via voice interfaces.

Interested Seniors See Voice Making Mobile Banking Faster and More Convenient

REASONS WHY YOU MIGHT USE VOICE CONTROL WITH MOBILE BANKING:



Source: Javelin Strategy & Research, 2016

People conditioned to say, “Alexa, play ‘Time of the Season’ by The Zombies,” are already familiar with how to use a voice interface, requiring no training in how to also direct Alexa to transfer \$200 from savings to checking. It hardly takes a visionary to see why that experience – compared with the time required to log into a bank or credit union mobile banking application then tap another few times to conduct the transfer – wins hands down (or really without the need of hands at all). Add artificial intelligence (AI) and consumers can be prompted by their virtual assistant verbally, by text or with a call to transfer funds to/from savings, pay upcoming bills, consider new investment alternatives, and more.

THE HIDDEN VALUE OF VOICE

Convenience and competitive parity are not the only benefits that voice-based digital banking can deliver. As a biometric, voice authentication is an option that can be much more effective in fighting fraud than many current measures. The shortcomings of alphanumeric passwords are well documented. Fingerprint authentication is a standard for many mobile banking and financial services apps though it also has non-trivial limitations. Facial recognition technology is rapidly gaining acceptance, but as an authentication standard on mobile devices, can be expensive to deploy and difficult for the consumer to use properly.

Voice authentication is a viable option with better security than a password or fingerprint, and its ease-of-use eclipses facial authentication. As with all security measures though, voice authentication is not 100 percent foolproof. However, by combining it with another authentication measure, preferably one that the end user need not directly provide (e.g., geolocation, behavior metrics, or similar), it creates a robust, dual-authentication methodology that compares favorably even to an in-person model relying on potentially forged IDs and notarized documents.

At Google I/O 2018, CEO Sundar Pichai proudly showed his company's newest AI initiative, Google Duplex, which allows the Google Assistant to make calls, book tables, set appointments and much more on your behalf. Apparently, Duplex is so good at sounding human that there is a good chance the people it communicates with on behalf of its user likely won't realize they are talking to a computer.

This "achievement" was considered more dubious than exceptional by many. Issues ranging from who is liable if Duplex is hacked and used to buy a non-refundable item to the possibility that it could make misinformation campaigns more effective were debated for weeks after the demo.

Could Duplex fool a voice auth system into believing it was a specific human? If not now, then more than likely in the future it will have this ability. However, to date, the potential downside of technology has not been enough to keep the genie in the bottle if there is a promise of more security, convenience, and/or choice. Voice technology likely will travel a similar path.

WHY A LITTLE TECH TALK IS A GOOD THING

[In our first report](#), a good deal of time is spent describing the obstacles to innovation that exist deep within financial institutions and their partners. Regardless of the potential benefits of a new technology, its interaction with – and integration into – IT environments largely composed of disparate legacy systems will need to be addressed.

For example, while voice interfaces offer the possibility of creating a better user experience in numerous ways, sooner or later one customer or member will reach a point where interaction with a person, rather than a machine, is needed. If that handoff is not seamless – and that may be the case if the new technology is operating in an environment that has a back office ripe with systems from four decades ago – then the value of the innovation to the customer or the institution is lost or severely compromised. The key to avoiding this likely lies in an institution's use of APIs.

An API (Application Program Interface) is a conduit allowing systems to more easily connect into an existing IT environment. They are a fundamental building block of most modern programming languages, fostering much greater modularization and flexibility. Many legacy bank systems lack the functionality and/or architecture to take advantage of APIs (a byproduct of relying on stable and thoroughly road-tested, but ultimately 1970s-era, technology), thus limiting financial institutions' reach into the market.

These constraints are costly to overcome and add complexity to the IT environment by requiring workarounds to accommodate the traditional interface models of the past. APIs



KNOWLEDGE-BASED AUTHENTICATION



49%

of users say that authentication is time-consuming



67%

of mobile users reset passwords at least once a month



85%

of users are frustrated with existing authentication



VOICE BIOMETRICS AUTHENTICATION



80%

faster authentication in 5 seconds



\$15m

average savings over a 3-year period



90%

prefer Voice Biometrics over the status quo

Source: Introduction to Voice Biometrics, Sabio, 2016

allow financial institutions to offer digital users the services they want in a more timely fashion within the existing customer experience while mitigating much of the “drag” created by legacy systems. The trick comes in modernizing those legacy systems enough to leverage APIs’ benefits. Given the role APIs are playing in “open banking” initiatives such as those in the EU, learning this trick may be a requirement for many financial institutions sooner rather than later.

FINTECHS: KEEP YOUR FRIENDS CLOSE, YOUR ENEMIES CLOSER

Much of the digital revolution has been predicated on the development of ecosystems fueled by data sharing. The financial services industry has been moving in this direction in subtle but meaningful ways for some time. The earliest examples of this linkage came from FinTech players offering consumers and small businesses financial services designed to capitalize on weaknesses within financial institutions’ legacy offerings. Personal financial management (PFM) was one of the first areas where this strategy was applied.

These early FinTechs saw an opportunity to draw upon numerous sources of financial data to provide a holistic view of an individual’s financial position within a construct of tools designed to foster better money management. Financial institutions responded by incorporating PFM capabilities into their offerings out of fear of having their relationships with clients disintermediated.

Financial institutions’ fear of disintermediation by FinTechs is understandable. FinTechs enjoy a number of advantages not available to banks and credit unions. For example, because FinTechs are start ups or early stage organizations, they typically are not strapped with overhead, do not have IT operations anchored by legacy systems, and have limited regulatory oversight compared to financial institutions. This allows FinTechs to introduce new products and services to the marketplace at a speed few if any banks or credit unions can match.

However, the fear of FinTechs usurping their space has receded at many financial institutions. Startups have become more realistic about their ability to distribute products and services to the level of critical mass required for profitability. At the same time, banks and credit unions have gradually realized they need outside assistance to deliver innovative offerings at the speed their customers and members want today.

Meanwhile, all across the banking industry, data has become a focus for many financial institutions and FinTechs. The interest in this case is not primarily about “big data,” but rather the “small data” banks and credit unions hold about their customers and members. Often this data is spread across multiple financial

institutions and even some FinTechs. As mentioned previously, the value in being able to analyze this data remains untapped at most organizations, but increasingly, there is movement to unlock that potential for the benefit of consumers and financial service providers alike. It is almost certain FinTechs will need to be part of that effort.

OPEN BANKING FLIPS THE SCRIPT IN FAVOR OF CONSUMERS

The concept of open banking emerged from the dynamic relationships among financial institutions, FinTechs, and data. Unlike the United States, the European Union (EU) has been aggressive in establishing regulatory mandates to foster and support the secure data sharing required to power financial services innovation. This is the goal of the open banking model: to provide access to consumer data for financial institutions and FinTechs to create an environment where co-opetition generates more value than can be realized in the more antagonistic approaches typical of competition.

For financial institutions in Europe, open banking is a declaration that business as usual is no longer a winning strategy. While a legislatively driven version of this EU open banking framework is unlikely to take hold in the United States, some variation of it will impact the U.S. financial services industry. When it does, some banks and credit unions may again experience unease they did during the earliest days of the FinTech revolution.

EU Open Banking Terminology

PSD2, or the Payment Services Directive, is the approach taken by the EU to create consistency in payments regulation and consumer protection across Europe as well as between banks and non-banks. A key component of the rule is the notion that account holders are the rightful owners of their transactional data and, as such, can authorize third-party access to this information.

The Open Banking Initiative (OBI), a close cousin to PSD2, is the United Kingdom’s effort to put many of the same principles into practice. In both cases, a stated goal is to spur innovation and competition by making it easier for non-banks to create new financial services and for consumers to switch banks.

GDPR, or [General Data Protection Regulation](#), extends to data well beyond banking. The GDPR seeks to create a data protection law across the EU and give citizens back the control of their data. The provision of GDPR getting the most attention is the “right to erasure,” requiring all personal data to be expunged from a business’ systems upon an individual’s request.

These institutions will need to work through their discomfort. Large banks are already striking data agreements with multiple FinTech firms. Some are even serving as investors and incubators for FinTech development. To compete, other financial institutions will be faced with doing the same or risk becoming irrelevant to their customers and members. Even if a watered-down version of the EU provisions are applied to the U.S. landscape, it will essentially serve to pave a road down which we are already headed, one that, if properly managed, can create opportunities that more than offset the risks.

TOP FIVE VENDOR QUESTIONS

1 - Completeness of Product/Solution

- a. Does your solution require partners to provide the services you describe?
- b. If so, describe the services these partners provide.

2 - Time to Market

- a. How often can we bring new releases to market?
- b. Does your solution utilize APIs?
- c. How easily can we add functions from other providers?

3 - Configurability

- a. How configurable is your solution?
- b. Can we change colors, logos, templates, entitlements, disclosure statements, etc. without your help?
- c. If not, how do we get such changes implemented? What is the cost?

4 - Data

- a. Can we easily access, control and perform analysis on all data associated with a consumer's digital banking transaction and activities?
- b. Does your solution provide functionality to do such analysis?

5 - Scalability

- a. What is your largest base of users?
- b. What is the largest number of concurrent sessions you have had?
- c. Describe the cause of your most recent outage.

A CALL TO ACTION

The issues discussed above are not going away; as one colleague quipped, "The internet is not going to be turned off, even on the weekends." The needs and expectations of consumers that are radically changing the banking and financial services as a whole will only become bigger and more pressing, as will the competitive threats from non-banks.

On the plus side, new approaches to software development, multi-tenant outsourcing architectures, and the power of "small data" provide an opportunity for smaller institutions to level the playing field with their larger scale brethren. In fact, in the current climate, digital transformation may be a goal community institutions can realize ahead of their larger competitors, though it is unclear whether many of these community players realize this.

Whatever the size of the institution, though, success will depend on the ability to control their own digital destiny. Being captive to vendors – or mindsets anchored in the past – are obstacles that reduce an institution's competitive advantage to near zero.

SRM provides a wide range of consulting service designed to facilitate digital transformation at community and regional financial institutions. Our firm has helped more than 700 financial institutions realize over \$2.2 billion in value by providing services that include current state assessment, strategy development, gap analysis, implementation road maps, RFP services, vendor evaluation, vendor selection, and contract negotiations. SRM specializes in customizing engagement plans to fit the needs of its clients. To learn more visit www.srmcorp.com or contact Michael Carter, EVP, Digital at mcartersrmcorp.com.



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