

# Innovating a seamless customer experience

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**Abstract** The pace of innovation presents multiple challenges for companies, but perhaps the most critical is how to meet and exceed customers' ever-increasing user experience expectations. However, wherever there is a challenge, there is also an opportunity; innovating faster and better than your competitors can increase market share. In this article, we examine four innovations – Internet of Everything (IoE), Artificial Intelligence, Biometrics, and Mixed Reality – and discuss how they can deliver frictionless transactions to improve the user experience for our customers.

**Keywords:** Financial Services · Financial Technology · Innovations · Artificial Intelligence · Biometrics · Mixed Reality · User Experience

## 1 Introduction

Innovation is constant. New consumer tech products and services have elevated customer expectations when it comes to the way products are designed and more importantly, how they are experienced. In many cases, a technology's transition – smartphones, for example – from shiny new thing to status quo has become not just astonishingly quick, but normal. There are constant demands to continuously improve and integrate across platforms. On top of building a rewarding experience, in the case of the finance industry, building a secure experience is of utmost importance.

For large organizations, keeping up with innovation and delivering new products and services at the necessary pace is an opportunity. Fall behind the fast moving curve of customer expectations and you can lose business.

Any innovation for new and emerging platforms must have two key principles at their core: security and user experience. Innovation around any new platform must have strong security technology incorporated from the outset. Equally, the objective of an innovation must be to enhance the experience of the customer or client. Innovation for the sake of innovation detracts from your ability to focus on delivering the seamless user experience we have all come to expect and demand.

As we are confronted by so many shiny objects, we apply our overarching principles to some of the areas we anticipate having the greatest impact for our

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customers. These include the Internet of Everything, Artificial Intelligence, Biometrics, and Mixed Reality.

## **2 Internet of everything**

### **2.1 Connecting data in one ecosystem**

According to Analytics Week [1], by the year 2020, there will be about 1.7 megabytes of new information created every second for every human being on the planet. Part of what will drive the seemingly ever-increasing explosion of data is the Internet of Everything.

The Internet of Everything enables networking and data-sharing with any connected device, and the number of connected devices is only going to grow: from iPhones and wearables to refrigerators and cars. IoE, and the smart networks that support and analyze all the data these objects generate, will mean people will be able to interact with devices in a way that has not been possible before.

For example, a smart fridge could alert you when you need milk. By saying “yes” when prompted by your smartphone, you will trigger approval for the refrigerator to place an order for more milk, which could then be delivered by your local grocery store.

Another example could be streaming the latest Hollywood or Bollywood movie to your smart TV. The fee for the film could depend on the number of people watching in your living room, which could be calculated by a smart LED lightbulb detecting the presence of people in its vicinity.

With both of these examples, people are doing ordinary things – buying milk and watching movies – but in a radically different way. And what is that radical difference? A financial transaction that is frictionless within the overall user experience.

### **2.2 Endless applications**

Other use cases are already proving themselves. For example, applications such as auto insurance telematics that capture driver performance, or commercial real estate building-management systems that use built-in sensors to manage energy usage, environmental comfort, and security, are already becoming prevalent.

Within finance, examples include IoE-sensitive lease pricing, which uses data collected from connected devices to better understand collateral values for leasing deals, or using IoE data to assess creditworthiness. As devices and data become more connected, banks also have the opportunity to begin functioning as platforms for micropayments.

The financial applications of IoE are endless, and will become integrated into the facets of daily life. After all, there is a financial component to almost everything we do.

## **2.3 Overcoming fraud and avoiding risk**

Of course, smart technology never comes risk-free. The ability to clone IoE devices or take control of them could lead to disastrous effects for our connected world. Enacting encryption, privacy policies and compliance programs is therefore critical. While financial institutions are building applications with security in mind, customers should review what types of authentication controls are available within their connected devices. Technology owners must continuously review their applications for vulnerabilities. As we see an increased number of connected devices being built, it's more important than ever for vendors to build in strong authentication controls during the development stage.

## **3 Artificial intelligence**

### **3.1 Existing data, new experiences**

Artificial Intelligence (AI) enables us to use data in a whole new way. We are exploring ways to use AI to deliver insightful and personalized experiences for customers and team members. In a basic example, using a virtual personal assistant, customers could ask, "What is my checking account balance?"

But if a virtual assistant can also unlock your account after a fraud alert, or answer questions about fees and schedule upcoming payments, what else can it do? As AI evolves, expect to see increased enhancements to automated investment portfolios beyond traditional "robo-advisors." These computer-generated experts will evolve beyond simple rules-based models to understand complex financial issues and can help you set and achieve personalized short and long-term goals.

### **3.2 Facebook Messenger AI Assistant**

We piloted an AI assistant within the Facebook Messenger platform with 5,000 customers and team members. AI can help augment the customer experience by bringing a "best of both worlds" approach: high-performance AI technology enhancing the personal touch of a human banker. Our chatbot [2] for Messenger pilot has provided an excellent opportunity to innovate on platforms customers use on a daily basis giving them options on when, where and how they want to be served.

Customers who are looking for information can direct message to the virtual banking assistant and engage in an interactive chat. The assistant can aid with queries related to account balances and most recent transactions, or even more intricate information, like how much the customer spent on food last week or the location of the nearest ATM. With every interaction, the chatbot will become more conversational and ultimately transition more intricate conversations to a banker for a seamless customer experience.

In the future, how a bank interacts with its customers will depend on where and when the customer demands and expects. Fail to make yourself available on the customer's platform of choice? He or she will find a bank that will.

### **3.3 Overcoming concerns**

Sceptics usually have some reservations around AI. One is that the advancement of AI – particularly in the form of process automation – will replace people in their jobs. In reality, AI will primarily eliminate the tasks that are monotonous and don't require a human touch. In this way, it's actually more likely AI will improve the workforce, helping people to be more efficient and freeing them up to deliver higher value work.

AI technology has the potential to become “creepy,” acting like Big Brother and peering in on our lives. To quell these concerns, it's key that institutions use AI to address customer experience pain points, offering solutions that are timely, useful, and relevant.

But most important of all, for AI to deliver on its promise, customers must opt in to the service, knowing that there is a tradeoff between providing personal details and a seamless experience. If AI experiences are delivered to the customer without their buy-in, that is when the creepiness factor can negate the whole objective.

### **3.4 There will always be risks**

These concerns aside, AI does pose risks that need to be addressed by the industry. Like any technology, AI is sure to meet unforeseen security vulnerabilities. It's crucial that policy and rules around customer interaction, data usage and privacy are in place, as well as a plan to mitigate reputation and regulatory risk.

Even with these safeguards, it remains to be seen how people will interact with AI. As with any technology, generations will take to advancement in varying degrees. The type of product and its applications will also likely determine the consistency of adoption, depending on how natural it feels for customers to integrate the new service into their lives. Financial services firms hoping to integrate AI should focus not just on making AI work, but making it work in a way that's meaningful and comfortable for customers.

## **4 Biometrics**

### **4.1 What you know, what you have, what you are**

The death of the password is almost upon us. As major companies have experienced breach after breach, they are looking to secure their systems by ensuring people can gain access not by what they know (passwords) but what they have (cell phones or tokens) and increasingly, what they are (fingerprints or eye scans).

Biometric authentication aims to make a user's body the new password, and it is already becoming a common part of our lives, from airports to smartphones. Some companies are ahead of the curve and have already implemented biometrics in financial services applications. A common example of this is Apple Pay, where a customer is required to use his or her fingerprint, or more recently, face recognition, to complete a transaction.

In the very near future, we are likely to see more types of biometric solutions in the market. These include voice authentication, either as a standalone verification method or in conjunction with another method such as voice and face recognition at the same time. Other methods could include using your heartbeat – a unique personal identifier – to provide access to your financial accounts. Or, in the category of “what you are” behavioral authentication, the gait of your walk or how you normally handle your phone. It's too soon to say when these new technologies may permanently replace the password.

## **4.2 Biometric challenges**

What if you're in a loud room attempting to use voice authentication? Not an unlikely scenario. To be entirely fool-proof, technologists should offer multiple forms of authentication for situational use, and account for environmental settings like lighting and noise. These and other challenges in biometric adoption will be common, but while there are challenges, and they may slow down adoption for some people, the potential of biometrics makes it inevitable that everyone will use “what they are” to login one day very soon.

As with IoE and AI, data must be encrypted to protect customers. Privacy and compliance programs involving biometrics should be thorough and will need to work securely with existing applications. People need to feel comfortable that everything is secure before offering biometric information as a form of authentication, because it's not something that can be changed like a password.

## **4.3 Better security, better experience**

These challenges aside, no matter what particular kind of authentication method a company uses, biometrics breaks the security trend of the past 10 to 20 years – that increasing security results in a worse user experience. First, there were passwords, next, there were more complicated passwords, and then, there were tokens. Each step increased security but decreased convenience. Biometrics means, we can deliver on two key goals – increase security for our customers and deliver a more seamless and convenient user experience.

## 5 Mixed reality

### 5.1 The future might not be right now, but it's coming soon

Banks are paying attention to advances in technologies and customer experiences across emerging platforms. Over the past decade, the banking industry has made significant strides in making the day-to-day experience compatible with mobile.

Hardware supporting mixed reality is still limited, and existing applications mostly support gaming and entertainment. For financial institutions, what is useful is, to think about the experience their organization would want to create on that platform, and experiment by building prototypes and proofs of concept. By doing so, companies will be prepared to react and deliver their services as new platforms gain traction.

### 5.2 Understanding the *why* of successful innovation

But the user experience is always about more than just the technology – it is how people use it. We bring our customers into the process, through pilots and interviews, to identify what they are looking for and explore concepts collectively. We also learn from popular experiences (in this case often gaming and entertainment) to understand why are they successful, and where can we emulate their strengths.

The hardware and devices for this technology will help determine the timing of adoption, as will the experiences created by organizations across industries. Mixed reality platforms will not only serve as a new medium to introduce financial information, but will almost assuredly incorporate the principles of IoE, AI and biometrics, creating new sources of data, and new ways to authenticate.

## 6 Conclusion

Customers gravitate toward products and services that reduce hassle and save time. Investment in innovation is therefore pivotal to improving the end user experience. We of course cannot predict what the future will hold, but we're working tirelessly to create a framework that can deliver a seamless, frictionless experience for every financial transaction, regardless of what platforms emerge in the future.

We must look beyond our own organization to ensure we are exposed to the latest innovations and trends that will impact our business.

## References

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