



**Did you wear your bank today?**

Wearable banking

August 2016







When was the last time you visited a retail branch for the bank you choose to do business with? Based on recent statistics, our estimate is that it has been a while.<sup>1</sup> Let's face it—we are living in an era where the world is becoming increasingly digitized and interconnected across apps, devices and platforms. This digital transformation is having a significant impact on the way consumers complete their everyday tasks and is paving the way for yet another global revolution—one where tasks can be done remotely instead of visiting a bank branch to take care of business. And wearables may be building on this further! While the world is still embracing mobile innovation and determining additional use cases for adoption, wearable technology is building upon this foundation to directly embed the power of the smartphone on a person. Despite the various form factors that wearables can have—from smartwatches to augmented-reality glasses to clothing—they provide a less distracting layer that gives a user constant intelligence about the world around them before they may even know they need it. It can also help businesses engage with customers, perhaps better than ever before.

Imagine if your bank utilized the 'wearable revolution' to re-engage with you, foster a stronger relationship and provide personalized products outside of physical branches. How different could the car purchasing process be? A wearable device could trigger an alert to a bank when a potential consumer walks into a car dealership. The most affordable financing option could automatically be selected based on data already possessed by the bank and pushed to a user's smartphone via a push notification. How much less distressing would home buying be if appraisers could complete the inspection and submit the report on-site and in real-time to the underwriters? While these may seem like fictional hypotheticals, new technology has made them viable possibilities today. Our article will take a closer look at similar potential use cases to help banks navigate this wave of transformation while maintaining their strategic interests and dominance.



# Wearables and the information value loop

Being able to pay with just a gesture, instead of with cash, credit card or smartphone, requires more than just a gadget on a wrist—it also requires a shocking amount of data. Not only does the device need to store payment information or authenticate a user, but it also may benefit from coupling location data and prior spending habits to further minimize the likelihood for a fraudulent transaction. This is an example of wearables requiring “information everywhere”, which is made possible through the suite of technologies—sensors, communication devices, servers, analytics engines and decision-making aids—known as the Internet of Things (IoT). These devices collect data about the world and have the ability to communicate, aggregate and analyze it before enabling informed actions to be taken. This process can be modeled with the information value loop (shown in Figure 1).

The true value of IoT lies within these actions, which can be driven via data rather than assumptions. With information from other solutions within this framework, wearables can help the banking industry

deliver a differentiated “customer centric” experience for their customers. Data-driven insights encourage consumers and financial institutions to make smarter and more informed decisions. No longer will a consumer be judged by their demographics alone, but also by behavioral trends that were not able to be analyzed previously. By having up-to-date information on spending habits, employment or prior bank interactions, institutions will be able to better align the services they provide with a consumer’s actual needs. The ability for a bank to provide customized services based on metrics collected will help drive the continued success and relevance of that organization.

However, the flow of information within the value loop can yield bottlenecks that inhibit value creation for customers and companies they choose to transact with. If properly addressed, these bottlenecks will not only allow banks to maximize IoT-generated value, but also gain a strategic advantage over competitors, such as financial technology (fintech) companies that are looking to capitalize on the same opportunity.

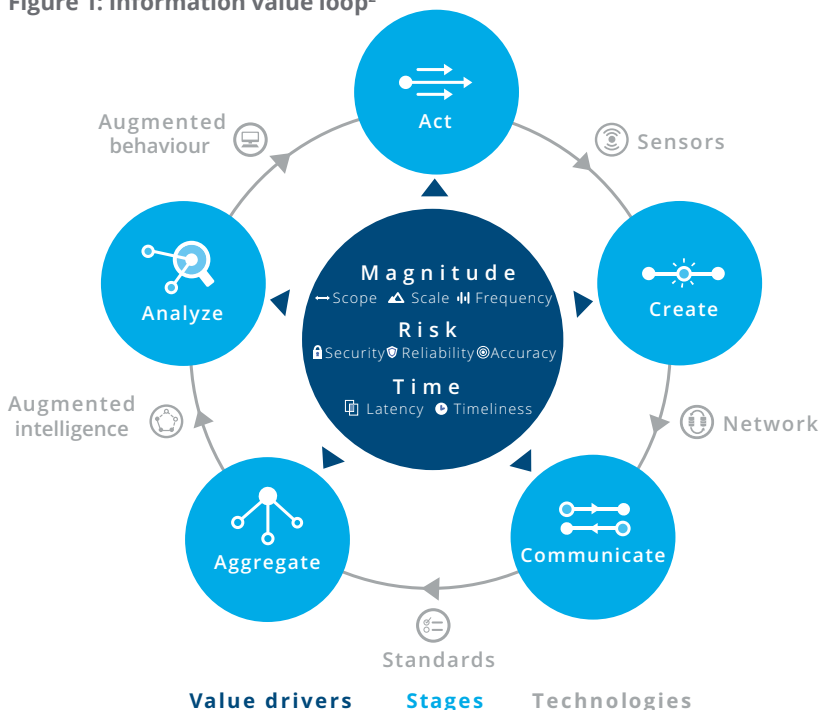
## Use case: Streamlined operations

The Vuzix M100 Smart Glasses are commercially available wearables that are geared specifically towards enterprise use. Coupling a wearable computer with wireless connectivity, camera and GPS, this wearable has the ability to utilize an employee’s surroundings without requiring any additional effort. While this technology is currently being tested in industrial settings, a device similar to this can be utilized by a bank to automatically identify and tag objects in real-time. This could have a profound impact for a banking advisor or teller that needs to manually determine if a check is fake today.

### Step-by-step

1. A customer walks into a bank and presents a check to the Bank Teller for deposit.
2. The Bank Teller looks at the check and then starts searching for the customer’s account on their computer. The smart glasses understand that the Bank Teller is looking at a check and processes through the beneficiary, amount and Magnetic Ink Character Recognition (MICR) line.
3. While the Bank Teller is inputting the transaction details into their computer, the smart glasses determine that the check is fake by comparing the routing number against the Federal Reserve Bank Services database.
4. The smart glasses present the Bank Teller with a notification that the check should not be accepted. The Bank Teller speaks with the consumer while the smart glasses automatically documents the incident to their account.

Figure 1: Information value loop<sup>2</sup>



## Owning the entire value loop vs. stage(s)

While it may appear that financial institutions can benefit most from owning the entire loop starting with custom-built sensors to analytical capabilities, unique challenges inherent to each stage renders this option impractical. Let's use the sensors that create data as an example. Not only do banks lack the technical expertise needed to create these devices, but these sensors are already incorporated into wearable devices developed by other players. With numerous companies already invested in creating and marketing these devices, most banks will find it more efficient to leave these products to companies with more experience and, instead, focus on the stages of the value loop that play to their strengths.

Rather than own an entire value loop from start to finish, financial institutions will likely find it more effective to own a stage or series of stages across multiple loops. In order to do so, banks will need to focus on near-term barriers and concentrate on taking advantage of infrastructure already adopted as a result of supporting prior mobile deployments. With a constantly

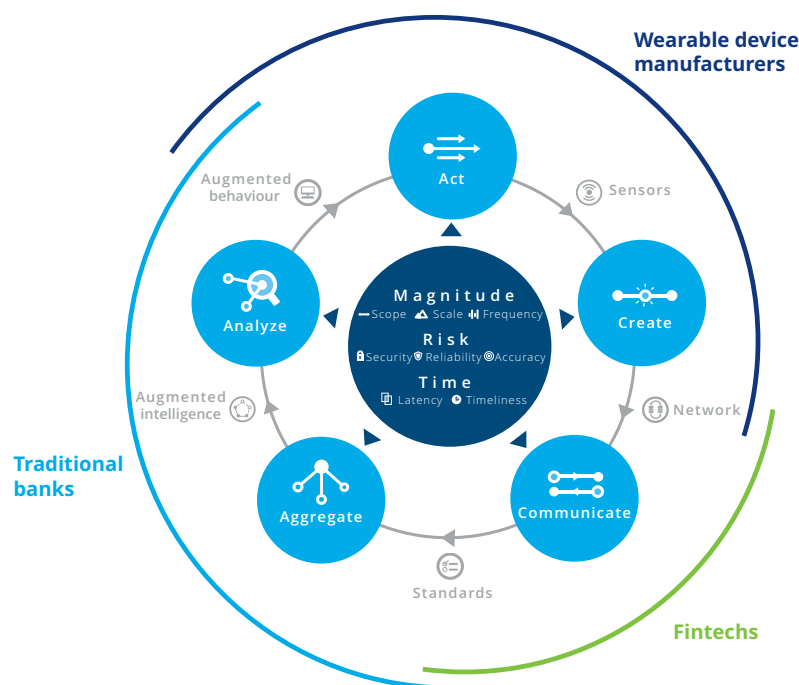
increasing number of wearables on the market and numerous communication protocol options to choose from, the limiting factor for improving customer relationships is handling the data itself. This implies that the Aggregate and Analyze stages of the information value loop are of the utmost importance to banks. Since financial institutions already have deep experience handling and parsing big data, they represent prime opportunities for these organizations.

Depending on organizational and infrastructure maturity, banks may choose not to own these stages by themselves. In order to capitalize on the vast amount of data readily available to banks, it needs to be connected, which requires technical knowledge of mobile architectures and APIs that may exist elsewhere. As a result, banks can either build a robust, iterative predictive analytics platform internally or collaborate with existing fintechs that have already made great strides developing similar solutions. Given the complexity and speed of change affecting the market today, a majority of

banks may find it more advantageous to pursue this type of 'outside-in' approach. Instead of developing costly, in-house capabilities, banks can look to help fill these gaps and augment current digital capabilities through partnerships. This strategy positions banks for the success required to serve the rapidly growing number of clients with the sophisticated demands for digital functionality and cost efficiency. For example, fintechs such as Moven and Prism have developed money management services for the Apple Watch® wrist wearable device. However, since they lack the large datasets and customer reach of traditional banks, they are open to partnerships to help banks take their innovative products and services to market.

Owning the Aggregate and Analyze stages of the information value loop will provide banks with the customer insights needed to gain a competitive advantage. Partnering with wearable manufacturers and fintechs will enable them to achieve these gains quicker and with less overall risk.

**Figure 2: Sample ecosystem for wearables in banking**



# Challenges of wearable banking

## Use case: Wearable ATM withdrawals

The Nymi Band is a wearable wristband that can track a user's unique electrocardiogram (ECG) to deliver continuous authentication experiences. In August 2015, Nymi, TD and MasterCard announced that the first biometrically authenticated wearable payment took place using a user's heartbeat.<sup>3</sup> Thinking ahead, similar technology can be used to accurately identify a customer and streamline the authentication process when they withdraw money from an ATM.

### Step-by-step

1. A customer wearing a device that can track their unique ECG walks up to their local ATM machine to withdraw money.
2. The customer inserts their debit card to withdraw money. However, because the customer has opted-in to securer payments, they must tap their wearable device against a special sensor on the ATM machine.
3. The ATM machine confirms that the unique ECG belongs to the owner of the inserted debit card and prompts the customer with the various services available.
4. The customer selects 'Withdrawal', enters the amount they would like to withdraw and picks up the cash. The transaction is completed as soon as the money is removed from the machine.

Implementing a wearable banking strategy should not be a race to follow a trend as they may have with 'mobile-first'. Instead, the decision should be made based on a business objective to provide services to customers in a way that was not imaginable with other, more mature platforms.

In order to predict, recognize and act on it in real-time poses numerous challenges. Below are the most notable ones organized by each stage within the value loop.

### Create stage: Extension of mobile vs. wearable-centric experiences

Since technologies within wearable devices can appear to be a natural progression from those within other mobile devices, the method of interaction differs significantly. For example, there are capabilities unique to wearables, such as the collection of location-based data, which other mobile devices do not possess. On the flip side, there are several limitations to wearables as well. With very small displays (or none at all), wearables may be limited in how data is displayed. In addition, wearables are designed for seconds of interaction at a time. As a result, simply porting an existing app to a wearable device may not be just a missed opportunity to do something truly revolutionary, but a strategy that is ineffective.

It is imperative to determine the type of experience a bank would like for their consumers to have via their wearable devices. For example, banks should likely focus on personalization centered on the essence of such a device being 'a part of' their customers. A smart, jacket, in partnership between Lyle & Scott and Barclays contains a payment chip embedded in the cuff of a sleeve, which allows the user to complete transactions in stores without the need for carrying a wallet.

### Communicate stage: Data security and fraud prevention

In order for wearables to support desired bank objectives, these devices must store a certain level of sensitive financial information. In addition, depending on the specific wearable device, streams of data may be constantly collected and transmitted over-the-air. This could potentially pose a security threat, which would require banks to ensure the safeguard of the types of information being shared. For example, fraudsters could seek to intercept sensitive information to steal a customer's identity or, even worse, manipulate markets. Banks should make security a key consideration while determining the wearables to support and developing a wearable banking strategy.

### Aggregate and analyze stages: Fintech competition

While banks can partner with fintechs to accelerate their advances into wearables, they may pose an increasing threat as their capabilities also begin to advance. This is in addition to the growing challenge they are receiving from non-bank entities to aggressively push digital innovations to take on traditional banking functions. Amazon, for example, is now offering loans to its merchants to fund inventory requirements. Alibaba, which started off as an online merchant for volume-based items, is now the world's largest payment provider.<sup>3</sup>

However, if banks do not form partnerships with fintechs, these lean organizations could continue to grow into functions traditionally held by banks, potentially cutting out financial institutions out of the market. While regulatory pressures may make this unlikely in the short-term, banks will need to take immediate action to quickly innovate, prioritize and support new platforms without ceding control to other players in the IoT ecosystem. Moreover, banks should assess the feasibility of partnering with organizations that do not pose a threat to their core business, but supply sufficient resources to expedite the innovation and go-to-market timeline.

### Aggregate stage: Data integration and analytical complexity

Legacy core banking systems are typically comprised of multiple data warehouses and various transactional systems that yield high total cost of ownership. In addition, as banks look to offer new services and integrate with different devices, these systems require a constant need for integration and interoperability. Additionally, regulatory and compliance pressures require that financial transactions and customer data be tracked on an unprecedented scale.<sup>4</sup> Banks will need to focus on implementing solutions that communicate with legacy systems as an interim solution, while actively engage in the development of an operating model and nimble infrastructure for more effective data access, management and delivery in the long-term.

### Act stage: Unified view of data

While consumer intelligence will lead to new opportunities, banks must offer their customers with an integrated and seamless banking experience. Specifically, customers expect that when one Line of Business (LOB) captures data, it is shared throughout the organization so that it does not need to be provided multiple times. As a result, banks should focus on creating process flows that keeps a customer's digital journey in mind, while tracking how the organization will deliver value at every interaction point. Creating a seamless experience to deliver a superior customer experience will be crucial for the long-term success of the financial institution.

### Use case: Proactive event monitoring

Lark is a personal fitness coach that enables users to record their fitness and food intake through a one-on-one chat. Instead of manually logging workouts, Lark utilizes sensors and conversations to motivate users to live a healthy life. Utilizing a similar concept, could banks provide a 24x7 financial concierge to their customers that is familiar with their whereabouts and can attend to all trivial tasks?

#### Step-by-step

1. A customer lands in Paris for their vacation without informing their bank that they will be abroad for the next few weeks.
2. The customer's wearable device realizes that the customer is leaving the airport and pushes the following message to them: "How was your flight to Paris? How long do you plan to stay in Paris?"
3. The customer responds, "It was great. I'm leaving on 9/9." The wearable displays a message stating that a travel notification is set up on the customer's account and wishes them a safe and fun trip.
4. Upon arriving at a boutique designer store, the wearable asks, "Would you like me to increase your spending allowance on general merchandise?"
5. The customer realizes that they may go over the current limit and responds, "Yes, please increase my daily limit to \$3,000."
6. As the customer boards their flight back home, the wearable device displays a message stating the travel notification is removed and the spending allowance has been reset to the original limit. The wearable then wishes the customer a safe flight home!



## Call to action

Financial institutions that strive and succeed to maintain the pace with IoT trends will be at an information advantage, creating effective, timely and cost-efficient downstream opportunities. Although a typical customer and bank interaction ends after leaving a branch or logging out of an online account page, the flow of information persists to create value. While

a single point-of-sale transaction may not lead to much insight about a customer, a series of transactions and their associated information could lead to a significant amount of customer intelligence. Banks need to position themselves to leverage this intelligence so they can capitalize on this opportunity by providing personalized and targeted services to their customers.







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