Augmented Reality in Financial Services –
Moving from science fiction to commercial opportunities

- Anandasubramanian Codangudi Pranatharthy, Abhinav Kishore Jaipuria, Nagamadhavi Chintalapudi
Who would believe that Steven Spielberg’s high-tech futuristic shopping mall concept in the movie Minority Report, where Tom Cruise’s character is confronted with digital signs that call out his name when he passes them, would one day be brought to the real world by NEC and IBM, who are separately developing facial recognition advertising billboards? Recently, Google’s Project Glass, which is developing an augmented reality head-mounted device (HMD), has made the tech world sit up and take notice. The retail industry has seen a spurt of development around augmented reality with Tesco being at the forefront. The real estate and the advertising industries have been quick to embrace augmented reality applications to improve sales and customer outreach. In the financial services, augmented reality has not been able to make much headway but the time is ripe for companies to leverage augmented reality technologies to deliver cutting-edge solutions to customers.

Augmented reality, in simple terms, is the use of diverse technology to enhance and improve our view of the real world. Augmented reality (AR) is a direct or indirect representation of physical, real-world surroundings whose components are enlarged by system-generated sound, video, graphics, etc. For example, telecasting a cricket match with live scores, images etc. on the screen. This is actually considered to be the opposite of virtual reality, wherein people involve themselves to an extent that they exceed the boundaries of physical reality and have got nothing to do with real world events. The basic scheme of augmented reality is to overlay graphics, audio and other sense enhancements over a real-world environment in real-time.

What benefits can financial institutions derive from adopting augmented reality?

Augmented reality can benefit financial services which are embracing the mobile and social media revolution. Financial transactions are increasingly being executed through mobile devices. There is an ever-growing user base for location-based services and presents a huge opportunity for financial institutions. With mobiles becoming advanced, sensors through AR applications, financial firms can generate direct benefits for consumers, businesses as well as workers.
Technology used in augmented reality

Augmented reality technology with smartphones is drawing a lot of attention these days. By using specialized software, users can turn their iPhone, Android or other smartphones into a virtual heads up display.

All a user has to do is point his phone’s camera at any point/location/building and the relevant information is displayed on the phone’s screen as graphics. Most of the developers of mobile AR applications are expecting AR to become the next “Big Thing” in the market.

AR apps, like World Surfer (for smartphones like the iPhone and high-end Android-based devices) provided by GeoVector and Mobilizy’s Wikitude World Browse, provide users with a better way to interact with different places in their surroundings.

How does an AR app work?
1. AR app reads the GPS data on the phone to find the current location
2. The app then governs the phone’s positioning from its electronic compass to decide the direction it is pointing at
3. The app then looks into its database for text, hyperlinks, pictures, etc. that have been tagged to that location in the compass direction from the current location
4. If it finds anything relevant then it positions them over the image of the object on the phone’s screen. For example, if it is a restaurant, the app displays it’s operating time, menu, directions, etc.
5. The AR app usually first displays the required nearest place towards the pointed, followed by other places that are at a distance

For all this to happen, a high-end phone with good battery backup is required because the graphics and GPS technology used in these phones consume lots of battery charge.

This technology can be applied in any situation where the user needs to locate a place in his surroundings. Users trying to locate banking channels can benefit a lot by using augmented reality applications. Banks are now looking forward to use this technology to enhance their experience with the users and to pull in more customers to their door step. This technology can be best utilized by banks in their consumer, commercial banking and Capital Markets businesses.
Strategy to implement augmented reality applications

**Anticipate** - Instead of responding to customer needs, financial firms need to anticipate them. Firms need to understand the customer’s behavior and complexity and understand if the AR strategy is aligned with business goals.

**Build** - Build the product with a team of developers and business managers. Augmented reality ideas can make good business sense if a proper analysis is done.

**Launch pilot** - The AR application should be launched on a pilot-basis initially for testing purposes.

**Get feedback** - Get feedback from customers as well as the sales force. Do a cost-benefit analysis.

**Broader deployment** - Go for a broad deployment with a marketing push. Customers need to be made aware of how to use the application.

Application of augmented reality in financial institutions

Customers using web and mobile applications expect a compelling user experience that is usable, useful and attractive. Augmented reality applications can be leveraged to improve the existing business scenario and even create new business cases.

The various scenarios where augmented reality can be applied in the financial services Industry are

### Business users
1. Relationship Manager using AR to track customers in an area
2. Relationship Manager using AR in exceptional conditions, like during a flood and hurricane.

### Consumers
3. ATM locator
4. Book an appointment at a bank branch
5. Customer acquisition, loyalty and marketing
6. Location-based merchant offers
7. Property search – AR for home loans
8. Auto Insurance
As described below.

**Scenario 1: Relationship Manager using AR to track customers in an area**

- RM has to prioritize visiting multiple SME accounts in a particular area.
  
- RM can launch the iPhone app which lays out the overview map along with pointers towards each customer, along with their business.

- The SME statistics are color-coded as Red (Defaulting customer), Green (good customer needing credit), and Blue (good customer BAU).

- As the RM starts moving towards customer premises, the nearer the RM is, the more the app provides real-time statistics about the customer, including people to meet, etc.

- The app immediately identifies the current location of the user, and overlays it with the camera. It also loads up the local area SME/customers to visit along with distances to them.

- RM visits the general area and opens the app.

- The RM sees a news item that states floods have occurred in areas his customers operate in.

- The RM can enter in the area name/code in the augmented reality application.

- AR app provides a 3-D overlaid map giving the area and RM’s customers in that area. It also provides a distance meter indicating the distance in meters/kms from the RM’s location along with camera images overlaid with visual directions.

- RM can visit the customer’s premises to assess damage and take a photo of the place.

- RM uses authenticated telepresence video call with his manager at the branch to extend a loan to the customer after due verifications.

- RM uploads the GPS-encoded photo into banking system and sees it compared against history for damage assessment.

**Scenario 2: Relationship Manager using AR in exceptional conditions**

- RM visits the general area and opens the app.

- The RM sees a news item that states floods have occurred in areas his customers operate in.

- The RM can enter in the area name/code in the augmented reality application.

- AR app provides a 3-D overlaid map giving the area and RM’s customers in that area. It also provides a distance meter indicating the distance in meters/kms from the RM’s location along with camera images overlaid with visual directions.

- RM can visit the customer’s premises to assess damage and take a photo of the place.

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Scenario 3: ATM Locator

I need an ATM

Point the phone at any particular direction

ATMs in that direction are displayed

Choose an ATM: User is then visually guided to the ATM

Use the ATM

Scenario 4: Book an appointment at a bank branch

I need to book a meeting with a branch executive

Point the phone at any particular direction

Branches in that direction are displayed

Select a branch. Check for the queue length and take a token number online

Book a meeting and meet the manager
Scenario 5: Customer acquisition, loyalty and marketing

I need to check an interesting offer that I saw on a brochure/billboard

- Point the phone at the brochure/billboard
- Take a snapshot
- Image is automatically sent to the server by the AR app
- The server relays back the information via pictures and interactive media
- Choose or reject the offer or service

Scenario 6: Location-based merchant offers

I am a potential home buyer looking for property

- Point the phone to a particular direction
- List of properties in that direction are displayed
- Choose the property and view more info
- Contact a lending manager to apply for a home loan
- Check home loan rates and repayment terms using built-in calculator
Scenario 7: Property search – Augmented reality for home loans

I am a potential home buyer looking for property

Point the phone to a particular direction

List of properties in that direction are displayed

Choose the property and view more info

Check home loan rates and repayment terms using built-in calculator

Contact a lending manager to apply for a home loan

Choose the property and view more info

Check home loan rates and repayment terms using built-in calculator

Contact a lending manager to apply for a home loan

Choose the property and view more info

Check home loan rates and repayment terms using built-in calculator

Scenario 8: Auto insurance

User goes to a car dealership to buy a car

Takes a snapshot of the actual car or the digital watermark code on the loan brochure available at the car dealership

AR application sends the data to the central server

Server relays the insurance details to the user

If user is buying the car and is satisfied with the insurance terms, he/she contacts insurer by clicking on ‘contact us’
How can AR benefit your financial institution?

1. Better cross-sales opportunities:
   Ability to identify and blend real-world into cyberspace can help your bank cross-sell various credit products in a highly targeted fashion. For example, a customer waiting at an airport to check-in for a flight can quickly point his phone at the nearest image of his bank to buy a travel insurance policy.

2. Reduced customer support costs:
   With augmented reality, customers can easily locate and self-serve traditional low-value transactions or non-transactions without calling customer support. For example, locating the nearest branch or ATM, determining the working hours of a bank, etc.

3. Personalized service:
   At a time when banking services are considered exchangeable/replaceable, augmented reality can help a bank significantly personalize a customer’s experience, like showing the nearest suppliers to an business partner, etc.

4. Increased retention and potential for lead generation:
   Augmented reality offers a highly effective way to capture the customer's attention, resulting in greater dwell time at one place.
## AR initiatives by the major financial institutions

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<tr>
<th>Financial Institution</th>
<th>Application</th>
<th>Details</th>
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<td>Halifax, a division of Lloyds</td>
<td>Home finder mobile app</td>
<td>- Allows people to view and pull data on houses for sale as they pass them on the street</td>
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| Commonwealth Bank of Australia (CBA)          | Property search              | - For property search decisions, CBA launched an iPhone AR application  
- The technology is supported by realestate.com.au, Australia’s leading property portal, information and analytics company  
- The core functionality of the application utilizes augmented reality wherein data like current property listings, past sales, etc., is mapped to a real world view through the iPhone’s camera |
| Standard Chartered (China)                    | Location-based coupons       | - The Breeze team of Standard Chartered in China launched Breeze Living, an iPhone application that provides location-based services displayed through three views—AR, Map, and List, which is searchable through category, hot deal or daily deal  
- The application provides information about all the deals available to Standard Chartered customers, which they can leverage via location-based coupons |
| ING (Italy)                                   | ATM locator                  | - Launched by Dutch bank ING; the ING Wegweijzer application for the T-Mobile G1 (Google phone) helps users find the closest ATM  
- Moreover, the application also provides users with directions and the optimal route to reach the required ATM  
- The application uses GPS and a digital compass to provide directions. It is capable to overlay directions onto real-time views of the surrounding area. |
| St. George Bank (Australia)                   | Property search              | - Australian startup Insqribe partnered with St. George Bank to release the first Australian real-time AR property app for iPhones  
- The free application gives potential tenants and home purchasers access to actual real-time property information through the camera of their iPhone |
| Bankinter (Spain)                             | Branch locator               | - Bankinter launched an augmented reality service giving its customers the facility to point their mobile phone camera at a specific area and receive information about the nearest branches, the telephone number, instructions on how to get there from their current location, journey time, branch type, accessible ATM, etc. |
| Santander Bank (Spain)                        | Augmented reality stations    | - Santander bank hired YDreams, a Portuguese company to create an exclusive entry point to their compound outside of Madrid known as El Faro  
- “El Faro”, the lighthouse, is an interactive visitor’s center that features robots, big palpable interface walls, and flowing LED lights. El Faro welcomes the bank’s visitors with a technology that transforms the surroundings into an interactive physical and digital world. Visitors can seek information about their point of interest inside the complex through AR-enabled monitors. |
Augmented reality is a technology ready to explode and banks and insurance companies need to adopt it early. Financial institutions need to have a strong creative angle to apply augmented reality concepts to customer-centric applications. Prototypes should be tested in select markets before a wider launch. Mobile banking and social media had their critics but they did not take long to become a part of most people’s lives. Augmented reality is not very different and needs to be prioritized and brought in-sync with the business and technology strategy of financial institutions. With smartphones acting as a catalyst, it presents an opportunity like never before.

Conclusion
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