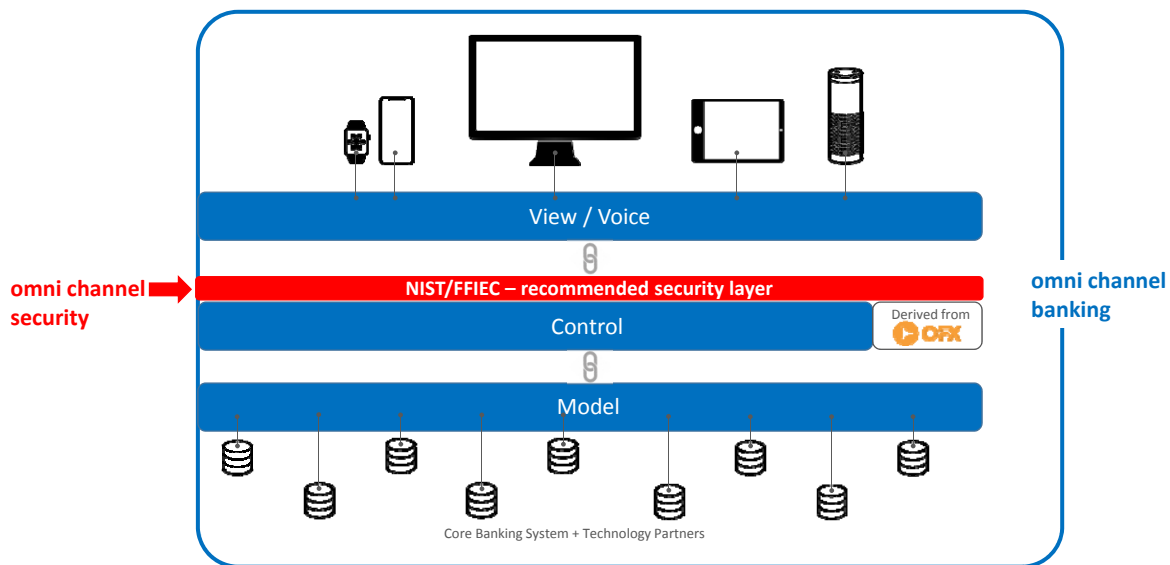


# Omnichannel Banking – what does it really mean?

Siva G. Narendra Ph.D – CEO  
Josh DeTar – Sales Manager  
Tyfone, inc.

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## 01 Opening Introductions



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## 02 Tyfone Company Overview

### History / Structure

#### Employees: 80

Hardware, software & services capabilities

**Corp. Headquarters:** Portland

**APAC Headquarters:** Bangalore

**Manufacturing:** Taiwan

**Founded:** 2004

#### Patents:

128 issued patents

1697 issued invention claims

8 pending patents

#### Investors:

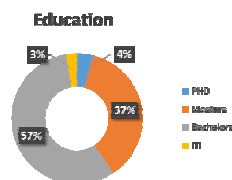
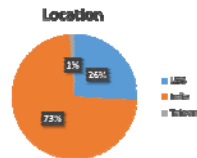
RPX, In-Q-Tel, Ojas Ventures, HDFC

Gen. Petraeus

Steve Pawlowski

Bruce Willison

### Employee Distribution



### Brand Experience + Brand Reputation Omnichannel Banking + Security



**375,000+**  
Users on Omnichannel  
Banking Secure Digital  
Banking Suite



**\$350+ Million**  
Average Money  
Transferred Every  
Month via the Platform



**\$100+ Million**  
Average Value of Checks  
Deposited Every Month  
via the Platform



**12.5 Million**  
Average Monthly  
Transactions  
(Omnichannel Banking &  
u4ia)

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## 02 Tyfone Company Overview

### Culture

**“True team spirit where the whole is greater than the sum of its parts”**

“Scale responsibly, having a few very  
happy customers is far better than lots  
of unhappy customers”

“Project teams are empowered to  
do the right thing for the customer”

**“People helping people”**

“Innovative environment- learning is encouraged”

“Collaborative teams – no nonsense  
culture that does not rely on hierarchy”

**“Employees are viewed as shareholders  
in the business, and have a voice”**

**“Respect is paramount”**

“Product roadmaps are developed in  
conjunction with our customers’ strategies”

“Communication is key, phone calls and emails are returned  
promptly and escalation paths are clear”

**“We are not just another vendor to our customers, we are a partner”**

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## 02 Tyfone Company Overview

### Tyfone's Approach

# Tyfone's Motto:

Be the **innovative** partner Banks need,  
to follow fast the trends shaping customer expectations,  
for digital experience.

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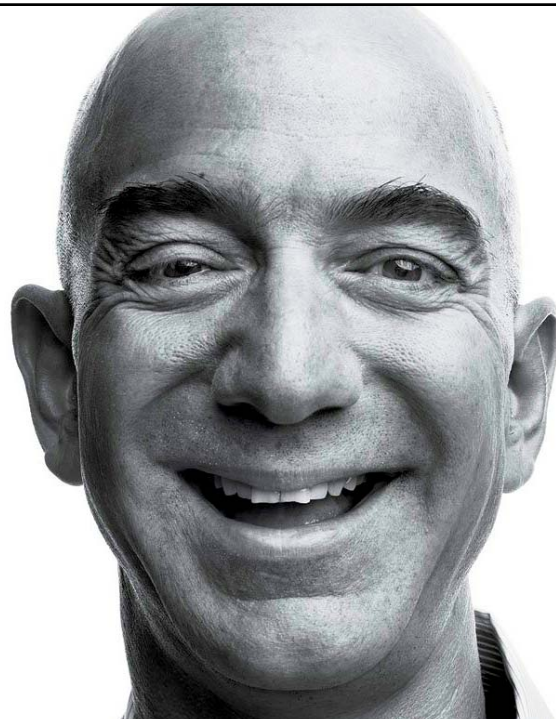
5

## 03 Digital Banking Demo

### Innovation

“...there is no  
bad time to  
**INNOVATE**”

Jeff Bezos



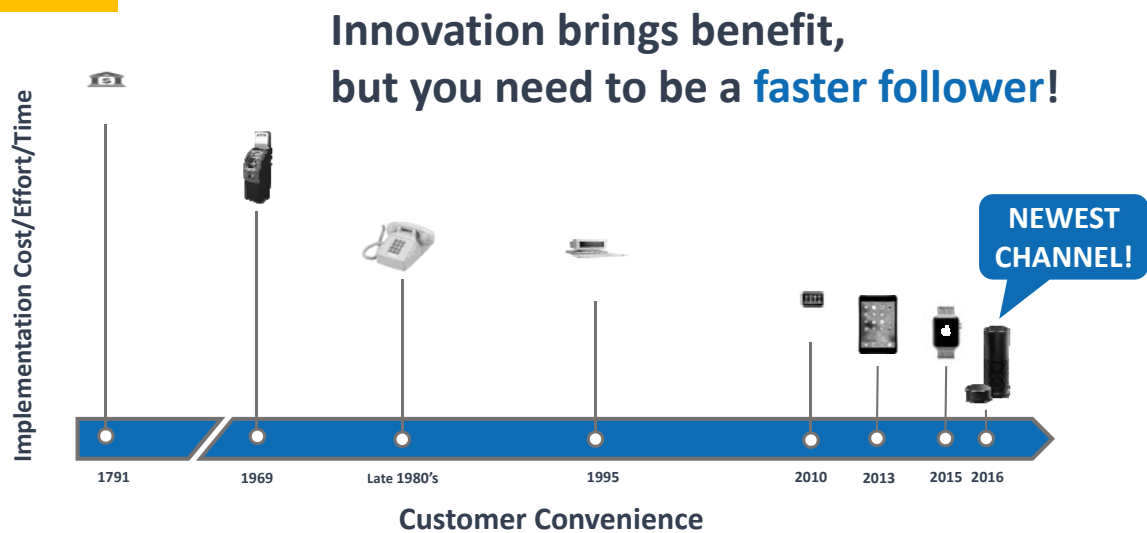
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## 03 Digital Banking Demo

## Innovation



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## 03 Digital Banking Demo

## Innovation

# Consumer expectations

for convenience, ease of use, and consistent user experience are on the rise.

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## 03 Digital Banking Demo

## Innovation

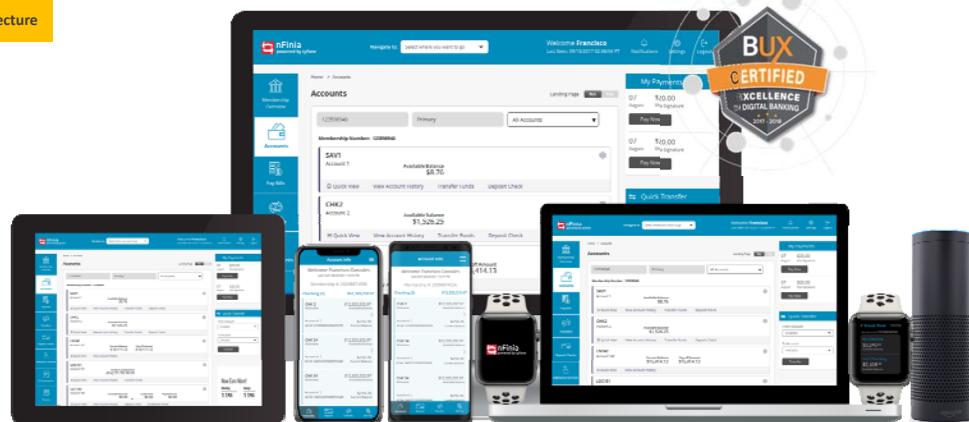
**Banking  
is not just a place,  
it is an experience!**

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9

## 03 Digital Banking Demo

## Overview / Architecture



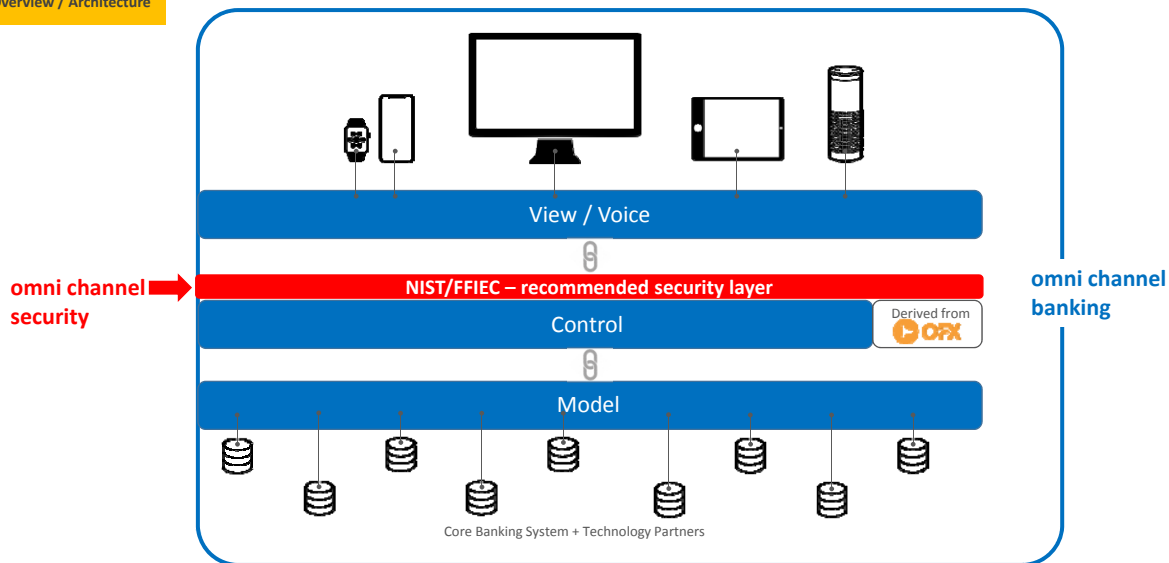
- Omnichannel banking from smart watch to smart speaker
- Model, view, control software architecture
- Responsive HTML5 based UI design for all screen sizes
- Familiar UI elements and workflows on all device types

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## 03 Digital Banking Demo

## Overview / Architecture



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## 03 Digital Banking Demo

## UI / UX

*"83% of users say a seamless experience across all devices is somewhat or very important"*

*"Almost 40% of users will stop engaging if they find the content or layout of a website shabby..."*

*"By 2020 customer experience will overtake price and product as the key brand differentiator"*

*"95% of users agree good user-experience just makes sense"*

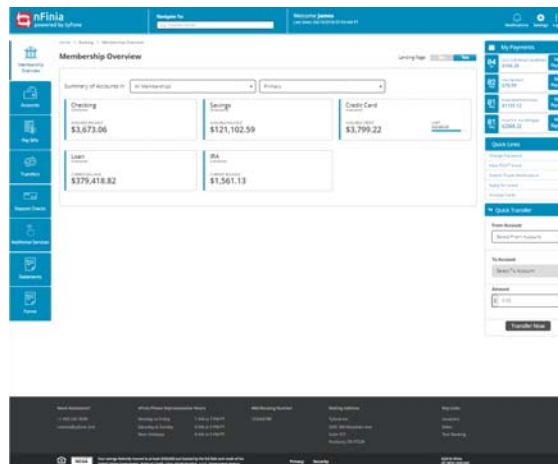
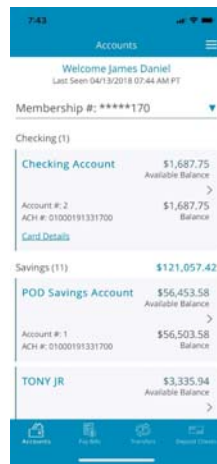
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12

## 03 Digital Banking Demo

UI / UX

## Adaptive Design



- Modern design theme with controls tailored leveraging the latest trends.
- Intuitive interaction patterns that users can easily get used to.

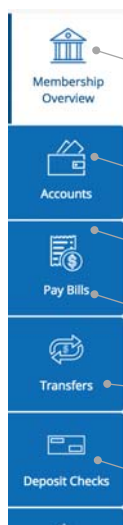
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## 03 Digital Banking Demo

UI / UX

## Side Navigation



Clear distinction between selected and active buttons that are indicated through large state changes to aid accessibility.

Icons follow a universal style and standard semiotics to provide familiarity.

Large buttons and text that aid easy navigation.

WCAG 2.0 compliant AAA color contrast ratios to enable accessibility.

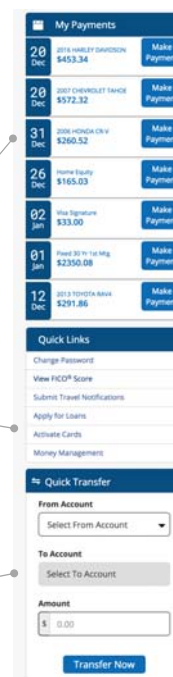
Customizable labels and button names to ensure a language that is consistent with your brand.

Persistent Navigation bar that displays both icons and text.

Contextual widgets that ensure what users use the most are easily available.

Quick links that provide shortcuts to additional navigation options that are always available.

Complete simple tasks quickly and on the same page.



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## 03 Digital Banking Demo

UI / UX

## Page Body

Breadcrumbs to aid navigating back to the place from where the user reached the page.

Clear distinct tabs that demarcate what is selected from what are active as clickable tab regions.

Neutral grey backgrounds make the design more crisp and clean. Fonts, in terms of family and sizes are consistent and standardized as per WCAG 2.0 guidance.

Clear and precise workflows that transition step-by-step and are intuitive for the users to follow along.

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## 03 Digital Banking Demo

UI / UX

## ADA Compliance - UI/UX

- **ADA compliance is going to become mandatory for Banks.**
  - Though compliance is currently needed only on the public facing website for now — apps and online banking interfaces will also need to become compliant soon.
- **Tyfone's Omnichannel Banking becomes WCAG 2.0 AA compliant out-of-the-box, this quarter, across online and mobile channels.**
- **Some of the ADA compliant features that we enable are:**
  - Large buttons to enable easy access for seniors and others with disabilities.
  - Alt-texts for screen readers.
  - Distinct AA color contrast ratios, with actionable items being AAA, for those with color disabilities.
  - Labeled workflow steps to help cognitive flow through the process.
  - Helper texts for fields to aid visual disabilities.
  - Clear navigation controls including jump-to and breadcrumbs to aid cognition.
  - Metadata that enables additional helpers for screen navigation.
- **All evaluated by certified external 3<sup>rd</sup> party accessibility experts.**

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**03** Digital Banking Demo

Online

Mobile

Tablet

# Demo of platform

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**03** Digital Banking Demo

Smart watch



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03 Digital Banking Demo

Smart speaker

Put your bank's  
branch right in your  
customers' **HOME**

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03 Digital Banking Demo

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## 03 Digital Banking Demo



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## 03 Digital Banking Demo

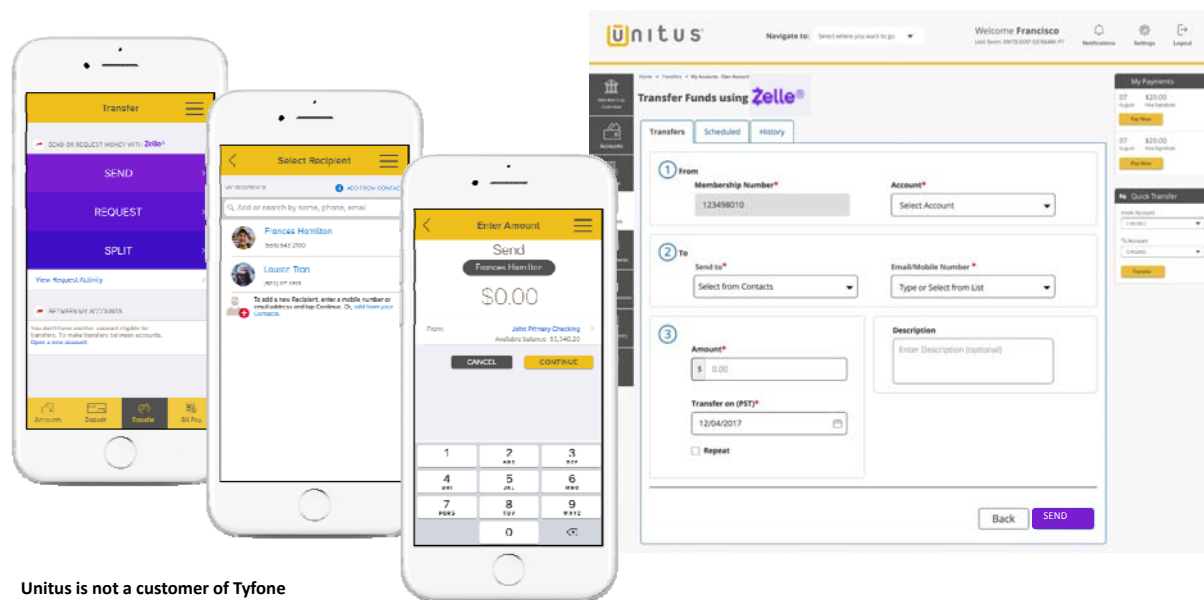


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## 03 Digital Banking Demo



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## 03 Digital Banking Demo



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## 03 Digital Banking Demo

## Best Practices

## Product Development Methodology

## Customer and customer feedback



- Bank Market Trends
- Competitive Research
- Technology Trends
- UX Trends
- Regulatory Changes



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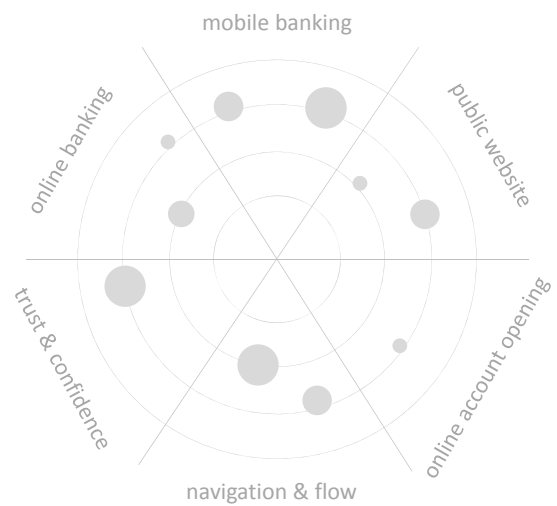
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## 03 Digital Banking Demo

## Best Practices



Making digital banking  
easier to use, more  
trustworthy, and used by all.



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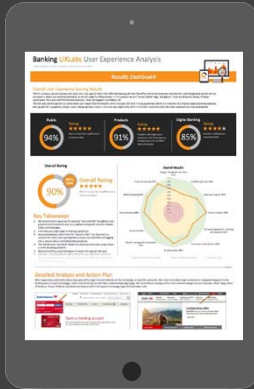


### 03 Digital Banking Demo

#### Best Practices

#### Advisory Services

BUX offers a variety of services to help financial institutions take digital customer experience to the next level.



#### Full Digital Banking Audit

BUX reviews both the form and the function of all your digital channels including your public website, mobile app, online banking and new account applications.

#### Process:

- Each channel is compared and scored against our proprietary customer experience framework including more than 400+ individual best-in-class guidelines
- Each sub-section is given a score for overall effectiveness
- Strengths and weaknesses are identified to help address experience gaps and missing features
- Areas for improvement are highlighted and prioritized

#### Deliverables:

- Detailed custom action plan on how to optimize customer experience
- Custom design makeovers (screenshots) of key areas for improvement
- Best-in-class examples from other financial institutions

27

### 03 Digital Banking Demo

#### Best Practices

## Our Approach

**The pace of innovation is too fast for a 5 year development roadmap**

- Did you see RDC coming 5 years in advance?
- Did you see the need to issue EMV card 5 years in advance?
- Omnichannel = All screens + Voice + Security

**A roadmap without customer feedback leads to dissatisfied Banks**

- You get daily feedback from your customers

**Banks provide their feedback in the following ways**

- Regular calls with their Sales/Account Manager
- As needed, calls can be coordinated with Product Managers
- Regular on-site visits from Account Manager and other invited guests

28

**04 Discussion and Survey**

## Discussion and survey

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**05 Omnichannel Security**

**Brand experience**  
is directly linked to  
**convenience**



**Brand reputation**  
is directly linked to  
**trusted relationship**

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## 05 Omnichannel Security

## The Equifax Problem

# The Problem

Cybercrime is on the rise.  
Stealing digital money has become easier and cheaper.

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## 05 Omnichannel Security

Risk Based Step Up  
Authentication

## Risk Based Authentication & Enrollment

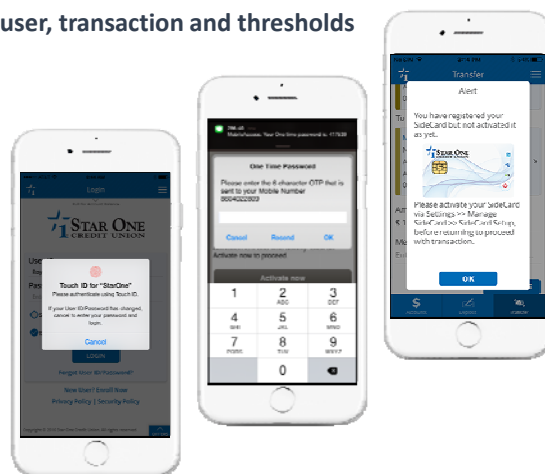
Configurable based on account type, user, transaction and thresholds

**View quick balance**  
Zero authentication required

**View transaction history**  
Username + Password / Biometric

**Transfer under specified amount**  
One time password

**Transfer with Zelle® over specified amount**  
**Password selection/change**  
**Physical address change**  
SideCard™ hardware authentication



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## 05 Omnichannel Security

Tyfone SideCard™  
Hardware Solution



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## 05 Omnichannel Security

Tyfone SideCard™  
Hardware Solution

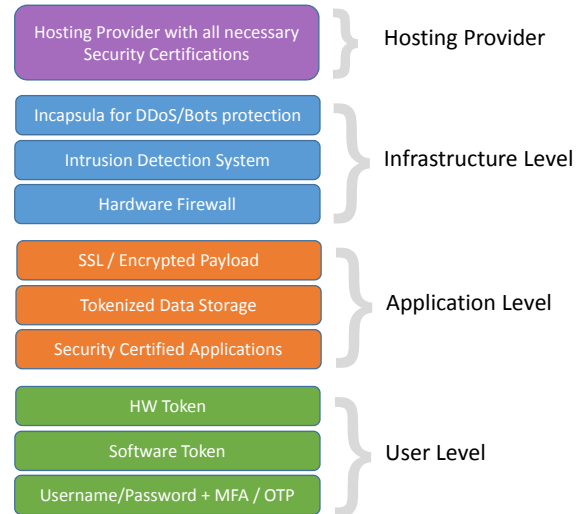
# SideCard™ Demo

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34

## 06 Architecture / Implementation

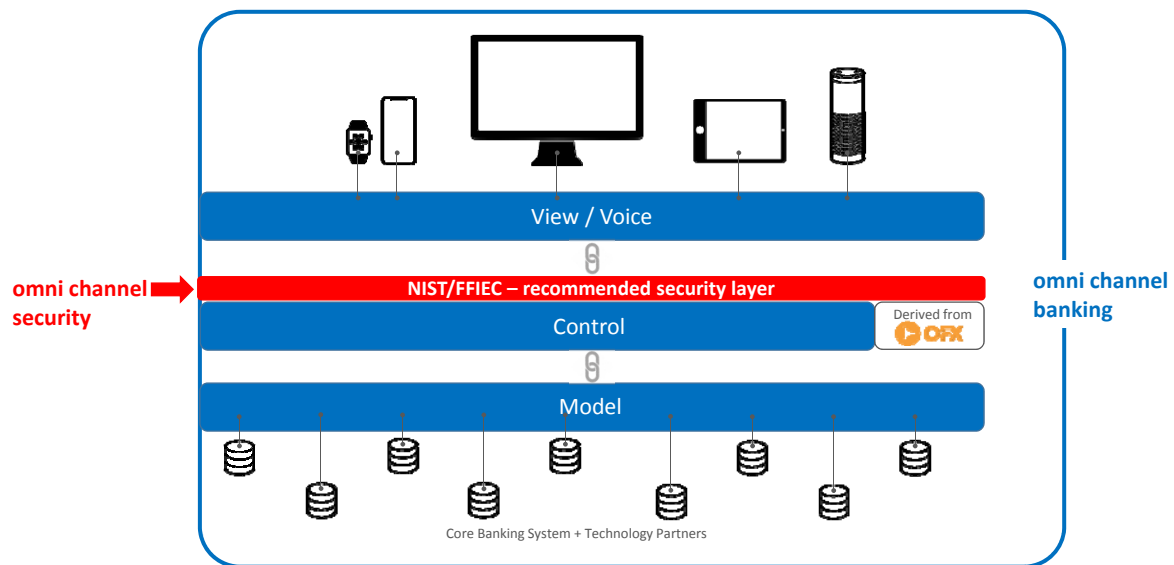
## Layered Security



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## 06 Architecture / Implementation



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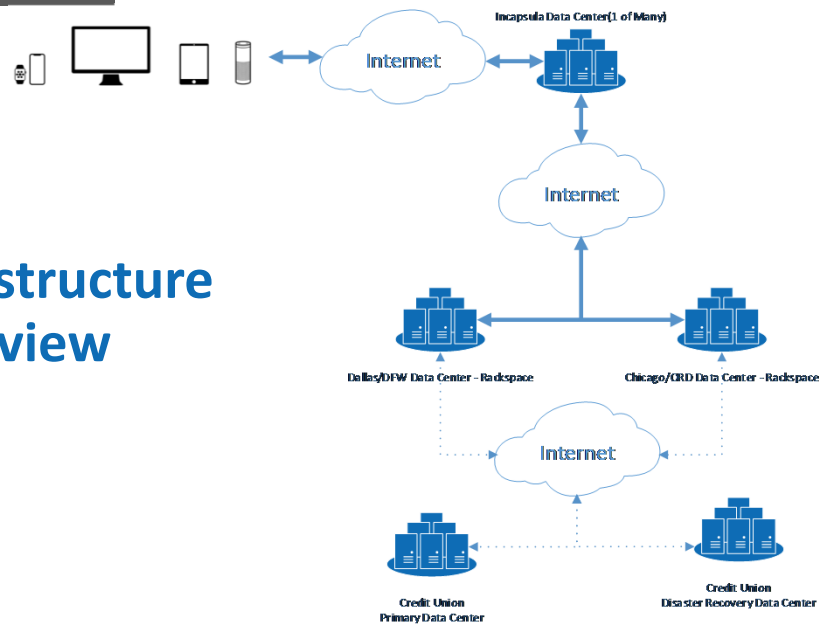
36



## 06 Architecture / Implementation

Live – Live Data Centers

## Infrastructure Overview



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## 06 Architecture / Implementation

Live – Live Data Centers

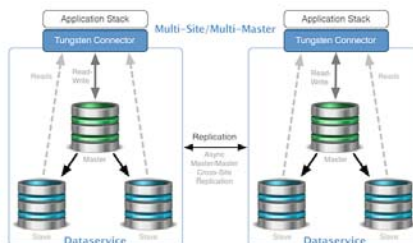
## Infrastructure Vendors



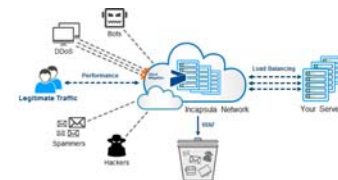
- Industry-Leading SLA w/ 24 x 7 x 365 Support
- All Necessary Compliance
  - SOC1 (SSAE18) / SOC2 / SOC3
  - Various ISO
  - PCI-DSS



- Supports Live-Live Infrastructure
- Enterprise SLA w/ 24 x 7 x 365 Support
- Multi-Site Multi-Master MySQL
- Zero Downtime Maintenance
- Tungsten Replication / Clustering



- Cloud Based Web Application Firewall (WAF)
- Enterprise SLA (99.999%) with 24 x 7 x 365 Support
- 38 Data Centers
- DDOS / Botnet / Exploit Protection
- Geo Location Blocking
- Content Delivery Network
- Load Balancing and Failover
- PCI, SOC Compliant (and more)

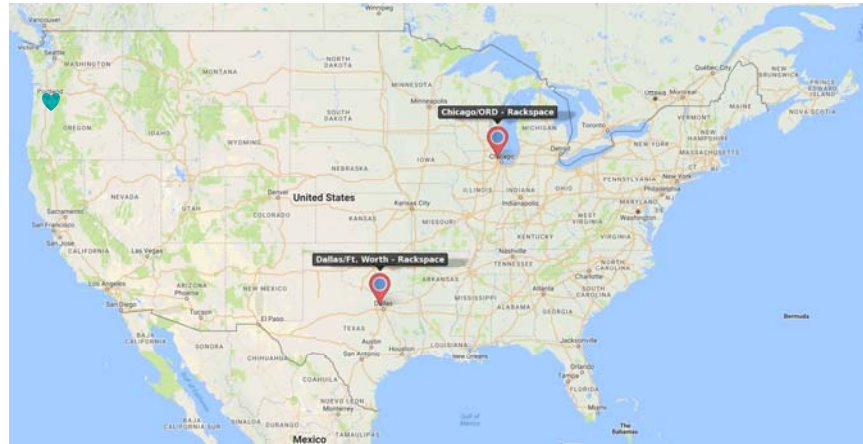


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38

## 06 Architecture / Implementation

### Live – Live Data Centers

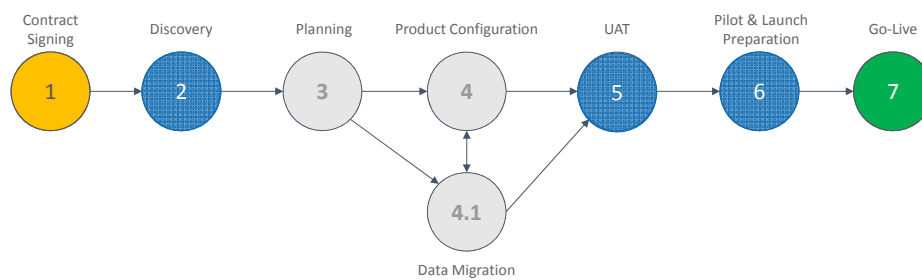


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## 06 Architecture / Implementation

### Implementation / Project Management



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## 06 Architecture / Implementation

Implementation /  
Project Management

## What we have learned

## Requirement Gathering Phase

- Do a deep dive while gathering the requirements!
- Don't assume anything!

## System data/information

- What are the different type of accounts and the associated business rules?
- What are the different ownership models?
- How does the SRTs work, what are the failure scenarios?
- Best approach to integrate with external systems (APIs vs. SSO)?

## Past History at the Bank

- Is there anything that we need to know that was done in the past, but may have an impact on the current functioning?

## Record/Analyze/Confirm

- All information that we gather from the customer for a project should get recorded (notes).
- Our analysis / conclusion / understanding should be cross-checked with the customer.
- Get a sign-off from customer, wherever needed.

This will make sure that there are no grey areas and all the expectations are set correctly from the beginning.

## External System Integration

- Understand the capabilities of the systems before integrating with them.
- Work with customer to test the integration thoroughly to avoid any post-integration issues.

## Data Verification

- Verify the data that needs to be migrated.
- Identify the issues and get those addressed before final migration.

## Pilot Period &amp; Testing

- Make the pilot period testing as close to production as possible.
- Work with customer to make sure all the use cases for all possible type of users are tested.
- Load the actual data or same amount of data on the pilot system.
- Performance test the pilot system to simulate real-life scenario.

## Go live

- Anticipate huge traffic and prepare the infrastructure and support process.
- Keep backup systems ready.
- Work on a plan with customer to support end users.

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41

## 06 Architecture / Implementation

3<sup>rd</sup> Party Integrations  
Bill Pay / RDC / etc.

## The integration friendly digital banking provider

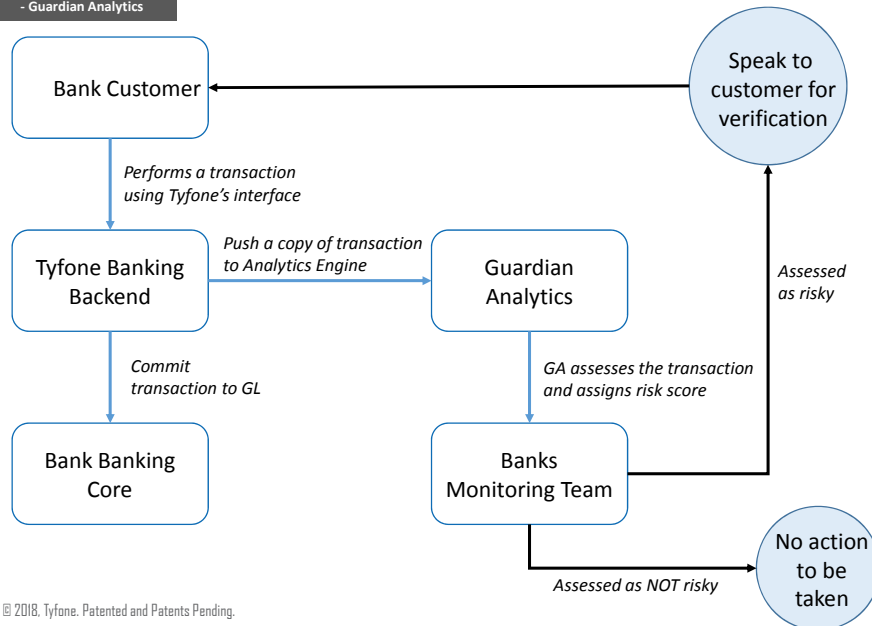


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## 06 Architecture / Implementation

3<sup>rd</sup> Party Integrations  
- Guardian Analytics



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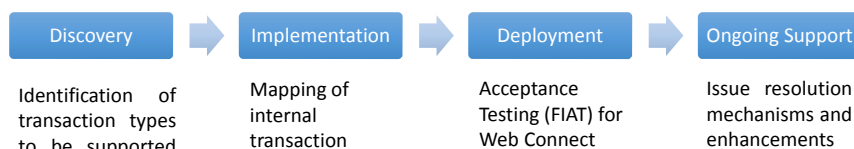
43

### Guardian Analytics

- ✓ Risk score is assigned to every transaction and user profile based on:
  - ✓ Geo-location
  - ✓ Transaction type
  - ✓ Transaction amount
  - ✓ Timestamp
  - ✓ Customer activity pattern
- ✓ Customer Service can assess risk based on factors like:
  - ✓ Risk score
  - ✓ User history
  - ✓ Internal business rules
  - ✓ Travel notification

## 06 Architecture / Implementation

3<sup>rd</sup> Party Integrations  
- Intuit

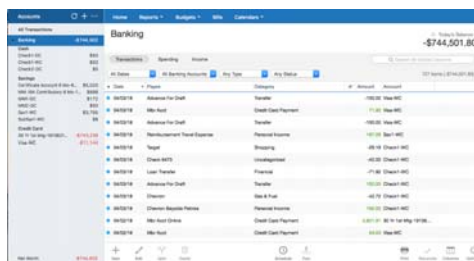


Discovery  
Identification of transaction types to be supported and infrastructure required

Implementation  
Mapping of internal transaction schema to OFX standards

Deployment  
Acceptance Testing (FIAT) for Web Connect Direct Connect Windows & Mac

Ongoing Support  
Issue resolution mechanisms and enhancements



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### Products supported

- ✓ Intuit Quicken
- ✓ Intuit Quickbooks
- ✓ Mint.com
- ✓ MS Money (OFX)

### Customer benefits

- ✓ Personal Finance Manager
- ✓ Account aggregation
- ✓ Tax Filing

### Integration modes

- ✓ Direct Connect
- ✓ Quicken Connect
- ✓ Web Connect/Downloads
  - ✓ QFX
  - ✓ QBO
- ✓ Open formats
  - ✓ OFX
  - ✓ CSV





## 06 Architecture / Implementation

### Roadmap

#### Q1 2018

- Voice Banking
  - Informational services
  - Funds transfer
- Smart watch banking v1.1
- Enhanced transaction search
- Enhanced customer management

#### Q3 2018

- Mobile banking 10.0 – UX
- Enhanced Admin dashboard
- Card control
- Risk-score driven step-up authentication

#### Q2 2018

- Zelle® (P2P)
- In-App rating
- Voice Banking
  - Funds transfer
  - Marketing
- Integrated targeted marketing
- Enhanced software token based MFA (NIST AAL-2 standards)
- ADA accessibility – WCAG 2.0 compliance
- Approval workflows for Admin Console

#### Q4 2018

- Goal-driven banking

### Backlog

- Business banking
- Targeted marketing (mobile)
- Bill management
- Banking bots
- External account aggregation
- Multi-language support

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47

## 06 Architecture / Implementation

### Tyfone Support

#### Support Infrastructure

With a global presence, Tyfone offers 24 / 7 support via its 2 locations:

- US: Portland, Oregon
- India: Bangalore

#### Support Channels

- Phone
- Partner site (Ticketing system)
- Email

#### Issue Classification

Priority	Status	Impact
Severity 1	Mission Critical	Cannot access from public Internet or mobile application.
Severity 2	Extremely Urgent	Server error that affects either a portion of the end users or substantial part of the service.
Severity 3	Urgent	A sub-system not functioning correctly or impact to a limited subset of end users.
Severity 4	Low Priority	Minor error not affecting functionality or occasional impact to a small group of end users.

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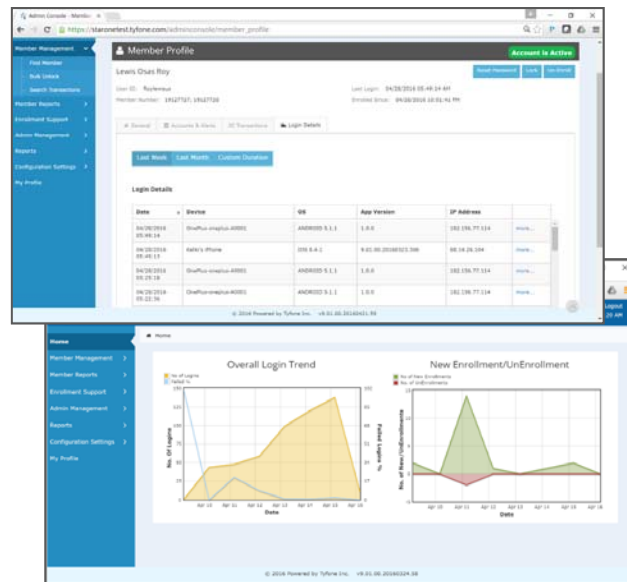
48

**07 Admin Console Demo****Reports / Workflows****Administration console with Role-Based Access Control (RBAC)**

- Default roles and permissions, fully configurable

**Easy to use customer support modules**

- Customer management
- Enrollment support
- Event notifications and alerts
- Search
- Administrative users management
- Trends and Reports
- Customer and transaction reports
- Rules and policy settings for different users and types of transactions



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**07 Admin Console Demo****Reports / Workflows**

# Admin Console Demo

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## 08 Marketing / Analytics



+



Partnering with best in class for marketing

1. Create user segments that will be targeted
2. Identify zones where campaigns will be targeted
3. Create campaigns targeting a segment and zone where to display ad
4. Measure the efficacy of the campaign

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51

## 08 Marketing / Analytics

## Targeted Marketing Activities

### Tyfone

#### Ad Delivery

- Identify pages
- Identify zones on pages

### MX

#### Campaign Creation

- Choose the ad to be displayed
- Point the ad destination
- Choose campaign parameters

#### Campaign Targeting

- Specify Segment
  - User demographics
  - Transaction patterns
  - Discovered accounts
  - User session patterns
  - User account characteristics
- Choose a page and zone to display the ad

#### Campaign Measurement

- Number of users targeted
- Number of users viewed
- Number of users who clicked on the ad

### Customer benefits

- ✓ Personal Finance Manager
- ✓ Account aggregation
- ✓ Spend categories
- ✓ Budgeting
- ✓ Cash flow

### Bank benefits

- ✓ Rich user profiles
- ✓ Discovered accounts
- ✓ Targeted Marketing

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52

## 08 Marketing / Analytics

## Segmentation

Segmentation can be done using one of the following two ways:

Custom segmentation provided by the Banks by uploading a list of users (as a .csv file)

Smart segmentation using segmentation engine that uses data fed by PFM system

The following segment types and filter types are available:

### Accounts

- Account types and subtypes
- Balance thresholds in these accounts
- Interest rate applicable to the account
- Minimum payment

### Analytics Sessions (based on user's sessions)

- Age
- Gender
- Accessed between a date range
- Operating systems used (hence devices used)
- Users using a particular widget or mini-widget (mini widgets are individuals tabs from master widget. A mini widget is dedicated to a specific function like budgets, expense categorization, cashflow etc.)

### Users who performed a certain transaction

- Transaction type (Mortgage payment, Bills & Utilities, Federal Tax)
- Involving a certain account type
- During a certain date range

### Users

- Active during the last 30/60/90 days?
- Who are older/younger than x years
- Who have an account of certain type (either with the Bank or with an external FI aggregated/discovered by the system)
- Who has a verified email address or phone number
- Who belongs to a cohort that joined the Bank during a certain date range

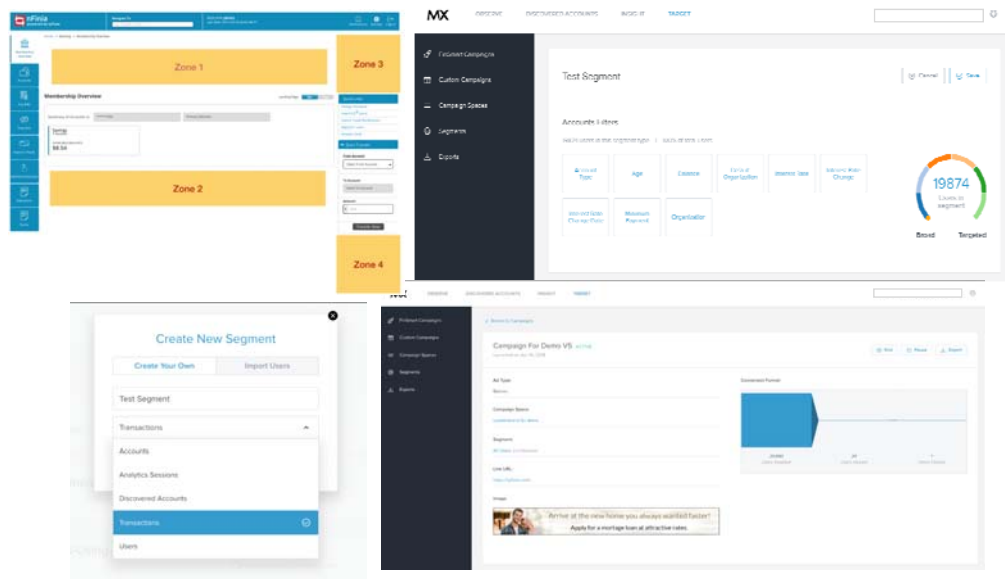
### Discovered accounts (Discovered accounts are accounts discovered through transactions in PFM)

- Particular type of account
- Belonging to a certain FI

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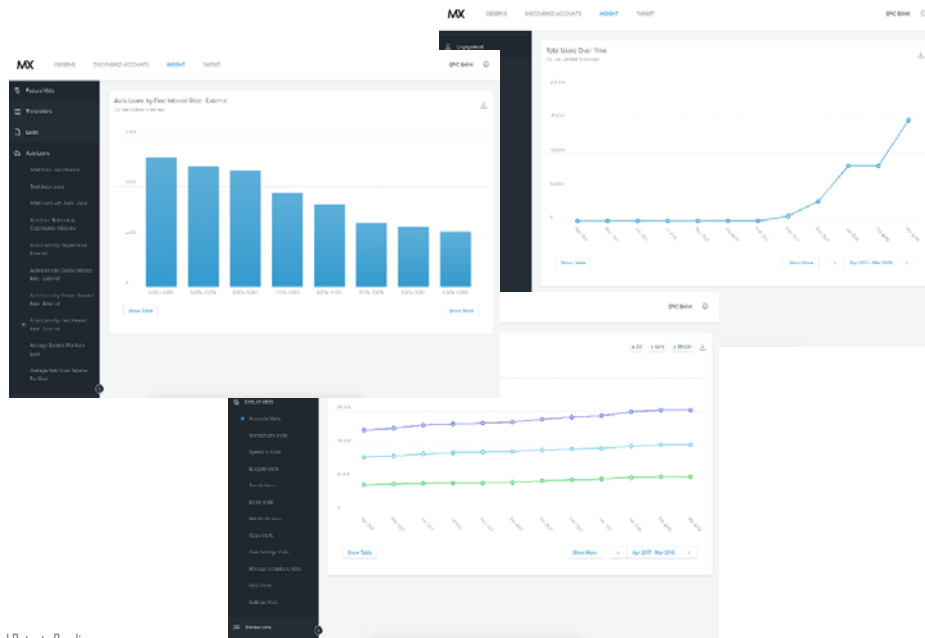
## 08 Marketing / Analytics



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## 08 Marketing / Analytics



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## 08 Marketing / Analytics

# Voice Banking Marketing

"Your mortgage is now paid"

"Thank you, Alexa!"

"You are welcome! Did you know **Bank** is currently offering a great low rate of 0.89% on a home equity line of credit? Would you like someone from **Bank** to call you to discuss?"

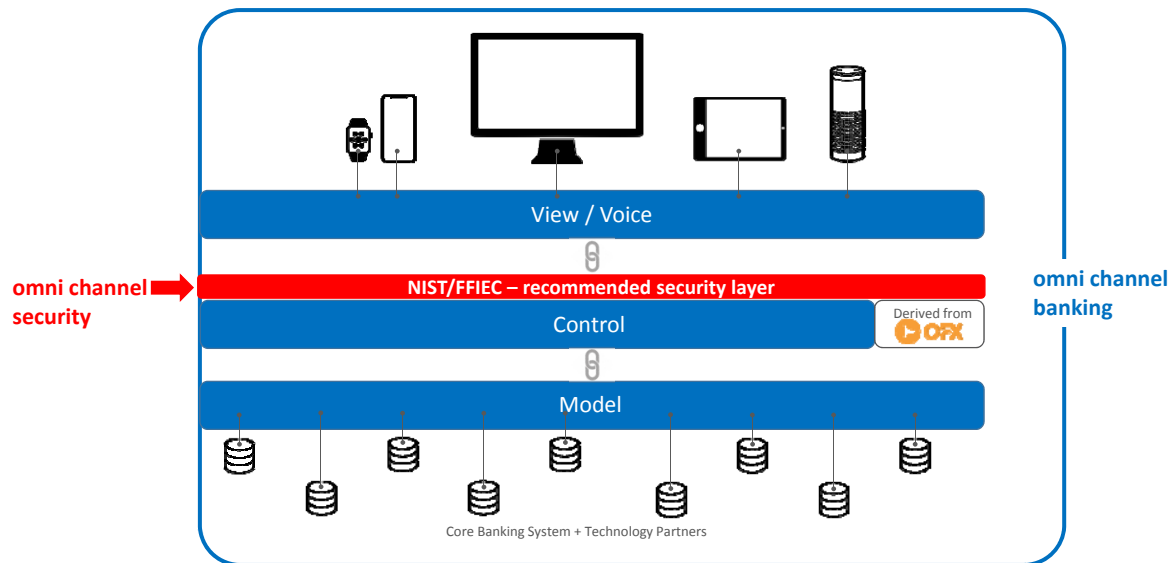


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56



## 09 Closing Remark



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57

> comments!  
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