Bank Technology Trends

Jim Stewart
Chief Information Security Officer
United Community Bank
Welcome to the Georgia Banking School!

Give **appreciation** and **feedback** to those that allowed you to attend.

Encourage others from your bank to attend in the future.
Comeback reflects Johnson's tenacity

Blame Smart's defense for blowing lead
Bank Trends + Technology Trends = Bank Technology Trends
Bank Trends
“Banking is necessary. Banks are not.”

Bill Gates
Microsoft Co-Founder
1994
It *might* happen to us.

According to research by Deloitte, only **12%** of Fortune 500 companies from 1955 are still in business.
Barriers that once protected banks are disintegrating, primarily due to 3 factors.
COST

Real estate, IT, enormous resource utilization

Since **2009**, more than **6,000** branches have closed. Wells Fargo is closing **400** branches over the next 2 years.
Traditionally protected banks from competition

“Too Big to Fail”
Banks are deeply trusted. Customers have strong and embedded loyalty.
2016 study found that 73% of millennials would prefer to obtain financial services from Apple, Google or Amazon...
In the not too distant future, once millennials and tech-oriented customers become the majority of our customer base, disruption will cease to be a threat. It will be a fact.
Growth in Aging Customer Base
Percentage of Population 60+ Years Old

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>2012</td>
<td>11%</td>
</tr>
<tr>
<td>2030</td>
<td>16%</td>
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<tr>
<td>2050</td>
<td>22%</td>
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The choice for the industry is clear.

We are either disruptors...

...or the disrupted.
The FDIC has approved a total of 5 *de novo* bank applications *since 2009*.

Compared to an *average* of 154 per year from 2001 through 2008.
Technology Trends
Personal Computers (PCs)

Apple II
1 MHz processor
48K memory
5 ¼” floppy drive
$1,195.00
1996 – Palm Pilot
1999 – Napster
2000 – DVDs
2005 – LED/Plasma Screen TVs
2007 – iPhone
2010 – iPad
2015 – Apple Watch
2003 – LinkedIn
2005 – YouTube
2006 – Facebook
2006 – Twitter
2011 – Charlie Sheen gets 1M followers in 25 hours and 17 minutes
2012 – Facebook has 1 billion active users
During 2008, the number of things connected to the Internet exceeded the number of people on earth.

By 2020 there will be 50 billion.

These things are not just smartphones and tablets.
BIG DATA
BIG DATA

“extremely large data sets that may be analyzed computationally to reveal patterns, trends and associations, especially relating to human behavior and interactions.”
BIG DATA

What can you tell about a customer by just casually looking at their checking account history?
BIG DATA

What is meant by data exhaust?

What are sources of this exhaust?
In the 21st century, we live a large part of our lives online. Almost everything we do is reduced to bits and sent through cables around the world at light speed. But just how much data are we generating? This is a look at just some of the massive amounts of information that human beings create every single day.
While data itself is valuable, equally if not more important is the capacity to act on that data...

...by having the right people, systems and strategy in place.
What’s going to be obsolete next?

“Ignorance”

So how do we use this data?
A recent J.D. Power survey of banking customers found that 49% of millennials used mobile banking services. That percentage was 31% for Gen X and 16% for Baby Boomers.
71% of all bank customers visited a branch an average of 14 times last year.

71% of millennials also use branches – averaging 11 visits per year.
Among millennials, overall satisfaction is 37 points higher for those that used the branch and mobile channels versus the mobile channel only.
What data is on the face of a check?
What data is on the face of a check...

...that is deposited with our banks?
FinTech
There is an **OCC** proposal to grant limited-purpose national bank charters to **FinTech** companies.

**Conference of State Bank Supervisors (CSBS)** which represents state banking regulators, is **suing the OCC** to stop issuing these charters.
Financial Technology – describes the evolving intersection of financial services and technology
FinTech

Incumbents

Large, well-established institutions such as Bank of America, Wells Fargo and Allstate.
FinTech

Big Tech Companies

Active in the financial services space but not exclusively so, such as Apple, Google, Facebook and Twitter.
FinTech

Infrastructure/Transactions

This broad group includes companies like MasterCard, Fiserv, First Data, NASDAQ.
FinTech Disruptors

Fast-moving companies, often startups, focused on a particular innovative technology or process – such as Stripe, Betterment, Prosper, Moven and Lemonade
“Banking is not defined as a static state. Such a view risks choking off growth and innovation. We must adapt to meet the evolving needs of consumers, businesses and communities.”

Thomas Curry, Comptroller of the Currency
“For example, a bank’s recent launch of cardless ATMs that allow customers to make cash withdrawals using their smartphone.”

Thomas Curry, Comptroller of the Currency
“However, it’s important to remember that **apps** are no substitute for a **brick and mortar** presence.”

*Thomas Curry, Comptroller of the Currency*
### THE FINTECH ECOSYSTEM

#### Payments & Transfers
- Dwolla
- Stripe
- PayPal
- Square
- Klarna
- Venmo
- Braintree
- iZettle
- ShopKeep
- Adyen
- Paydiant
- VISA Checkout
- Axios
- Express Checkout
- Samsung Pay
- Apple Pay
- Android Pay
- Samsung Pay
- Currents
- Credible
- Lending Club
- Prosper
- OnDeck
- Funding Circle
- RateSetter
- Orchard
- AssetAvenue
- Lufax
- Credibly
- Can Capital
- Nuveen
- Zillow
- CBRE
- FinTech

#### Lending & Financing
- Lending Club
- Prosper
- OnDeck
- Funding Circle
- RateSetter
- Orchard
- AssetAvenue
- Lufax
- Credibly
- Can Capital
- Nuveen
- Zillow
- CBRE
- FinTech

#### Retail Banking
- Simple
- Moven
- Ally
- Even
- Biz2Credit
- CommonBond
- Betterment
- Wealthfront
- Robinhood

#### Financial Management
- LendingRobot
- Credit Karma
- Betterment
- Motif Investing
- Nutmeg
- Robinhood
- BillGuard
- Mint
- Metromile
- Oscar
- friendsurance
- BitInsure
- MyDrive
- coinbase

#### Insurance
- Metromile
- Oscar
- friendsurance
- BitInsure
- MyDrive
- coinbase

#### Markets & Exchanges
- WeSwap
- Ripple
- Coinbase
- BitStamp
- Kraken
- Coinsetter

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FinTech Examples
Avoiding Overdrafts

FinTech startup, Dave, sells an app that forecasts short-term bank balances and sends users small-dollar advances (up to $250) when necessary.
Dave: Outsmart Overdrafts

By Dave, Inc

Open iTunes to buy and download apps.

Description

OUTSMART OVERDRAFTS
PREDICT: Simply connect any bank account and Dave will tell you how low your account balance will get in the next 7 days (“7 Day Low”).

Dave, Inc Web Site  Dave: Outsmart Overdrafts Support

What's New in Version 1.2.1

Dave now offers instant delivery. Get paid now, don’t wait until payday.

Free

Category: Finance
Updated: Apr 21, 2017
Version: 1.2.1
Size: 23.9 MB
Language: English
Seller: Dave, Inc
© 2017 Dave, Inc.
Rated 4+

Compatibility: Requires iOS 9.0 or later. Compatible with iPhone, iPad.
Mark Cuban
Dave Investor & Serial Entrepreneur

"I invested in Dave because I got crushed by overdraft fees in my 20s. For anyone who wants to be successful, I always advise to cut down on useless expenses and save money. Overdraft fees are the definition of useless."
Almost half of consumers say they could not afford a $400 emergency expense.

More than 25% of Americans have overdrafted in the past 12 months. And 10% have overdrafted more than 8 times.
Other apps or solutions predict what customers could save...

...like Digit.

Or what consumers can spend...

...like BBVA’s Simple.
Digit: Save Money Without Thinking About It

By Hello Digit, Inc

Open iTunes to buy and download apps.

Description

WELCOME TO DIGIT

Saving money used to be hard. Now it's easy! Digit is the effortless way to save money without thinking about it. Every day, Digit checks your spending habits and moves money from your checking account to your Digit account, if

[Links to Hello Digit, Inc Website and Support]

What's New in Version 1.4.3

Thanks for using Digit! We made some improvements and squashed some bugs to make the app even easier to use.

If you're enjoying using Digit, please consider taking a few minutes to rate our app.

Free

Category: Finance
Updated: Apr 12, 2017
Version: 1.4.3
Size: 68.5 MB
Apple Watch: Yes
Language: English
Seller: Hello Digit, Inc.
© 2016, Hello Digit, Inc.
Rated 4.5

Compatibility: Requires iOS 8.0 or later. Compatible with iPhone, iPad, and iPod touch.
Simple – Better Banking
By Simple Finance
Open iTunes to buy and download apps.

Description
Bank beautifully. Easily budget and save.

Simple is online banking with built in tools to easily budget and save. It’s the whole idea of banking, remade with

Simple Finance Web Site › Simple – Better Banking Support ›

What’s New in Version 2.20.0
This update is fresh and ready for a sunny day: it’s free of cobwebs, now sporting tweaks, fixes, and some super rad sunglasses. Take it out for a spin!

iPhone Screenshots
Save Easily, Bank Beautifully

Set Goals to save automatically

Customer Ratings
Current Version: 4.0 out of 5 stars
14 Ratings
Based on research by the Federal Reserve Bank, **21%** of small businesses sought financing from **online lenders**.
Kabbage – Small Business Loans
By Kabbage Inc.

Open iTunes to buy and download apps.

Description
Apply for a business line of credit of up to $100,000 by providing basic information through the Kabbage app. You choose when to take a business loan and how much to take, and you can withdraw funds right from your phone.

Kabbage Inc. Web Site » Kabbage – Small Business Loans Support »

What’s New in Version 2.6.0
- You can now search for your business, making the application process faster and easier than ever.
- We’ve added enhanced messaging throughout the app to provide a more seamless experience.

Screenshots

Small business loans for the real world
Apply securely in minutes
Get a loan today

Compatibility: Requires iOS 9.0 or later. Compatible with iPhone, iPad, and iPod touch.
VIDEO: How Kabbage Loans Work
Bank of America currently has 22.2 million active mobile users – a 13% increase from a year ago.

Mobile activity now accounts for 20% of their deposit transactions – equivalent to almost 1,000 of their “financial centers.”
Bank of America’s peer-to-peer payments platform handled over $8 billion in payments in Q1 2017 – a 25% increase from a year ago.
Send & receive money

Securely send money to anyone using their email address or mobile number – even if they're not a Bank of America customer. Each transaction is protected by our Online and Mobile Banking Security Guarantee.

- Easily add recipients from your contacts
- Divide expenses to easily split the bill
- Send friendly payment reminders from the Mobile Banking app

Get the Mobile Banking app
Apple Pay has been used by just 13% of iPhone users after launching 2 years ago.

The lower than expected adoption rate is reportedly due to ongoing security concerns, user unfamiliarity with contactless payments, and softer retailer acceptance rates.
Ever heard of Venmo?

I’ll guarantee you 36,000 UGA students have.
The global market opportunity for P2P payments is over $1 trillion.

clearXchange, also known as Zelle, is a payment service that works with 7,500 financial institutions and 25 million uses.
MAKE. DREAMS. HAPPEN.

SmartyPig is a free online piggy bank for people saving for financial goals like holiday gifts, vacations, and even retirement.

Start Saving

with rates up to 1.12% APY¹ to help you reach your savings goals faster.
Start accepting credit cards today.

Sign up and we'll mail you a free Square Card Reader.

Email address
Create password
Confirm password

Sign up for Square

2.75% per swipe for all major credit cards. No additional fees.
Technology Association of Georgia
2017 FinTech Innovation Award Finalists
Funding University
Monotto
Trust Stamp
UnBrokerage
STUDENT LENDING

LOANS FOR CAREER-DRIVEN UNDERGRADUATES

GET STARTED TODAY

NO CO-SIGNER REQUIRED
Smart Automated Transfers

Help your account holders continue to save money through all stages of their lives. Our platform analyzes the account holders’ spending habits and transactional history to determine how much money can be saved at any point in time. This algorithm will allow an account holder to continue to save the right amount of money no matter what is happening in their life. The money is then transferred into the account holder’s checking account and invested into a savings account. This way, the account holders save money efficiently, ultimately increasing their financial literacy and improving their financial standing.

Smart Goal Setting

Goal-oriented saving is one of the tenets of financial literacy and Monotto imparts that on your account holders by building a goal for them and keeping it plainly in sight so when they go to purchase their next car or take their next vacation, they understand the spending decisions that went into making that happen. Our algorithms can determine the amount of money needed in a savings account for a user to be prepared for the changes in life.

Banker’s Dashboard & Analytics

Every bank has a responsibility to their customers and to the government to promote financial literacy and the general welfare of their customers. Monotto’s easy to use bank-facing dashboard provides key analytics such as general location, amalgamated reports, and more that helps the bank visualize the success of their strategies as well as generate reports to pass those metrics on to their stakeholders.

Bank Product Cross Selling

Account holders within banking institutions are often overwhelmed by the wide range of products a bank offers, many times deciding to stick within the familiar territory of their checking account and refusing any other services. Monotto makes it simple to ease customers into the wider world of banking products by using predictive analytics to determine when a user qualifies for a product and then promoting that product to them through the app.
How Trust Stamp Works

Getting verified online in just three simple steps

1. Create your Account
   Account creation is fast, easy and secure. If only everything worked this way!

2. Connect your Social Networks
   The more accounts you connect, the higher your potential Trust Score! Your account information is not stored and your privacy is protected.

3. Share your Trust Stamp & Score
   Your Trust Stamp and Trust Score allow others to know that you are who you say you are, creating a basis for a trusting relationship.
The Easiest Way to Buy Business Insurance
Coverage In 48 Hours, 100% Online

FREE INSURANCE ASSESSMENT

- Company Type
- Projected Annual Revenue
- Employees
- ZIP Code

[SHOW RESULTS]
Traditional Branch Transformation
Bank of America is experimenting with self-service robo-branches that would have no employees. Plans to open 25 more across the country, utilizing ATMs and video conferencing to connect to off-site specialists.
Canadian bank, Laurentian Bank, is closing 33% of their branches, turning others into financial “clinics,” and shifting other branches to advice-only (with ATMs and no counter transactions) – because the traditional bank operating model is “becoming obsolete.”
Updates to Traditional Technologies
Cardless ATMs
Two Flavors

Customers wishing to use the service can get a **one-time-use 8 digit code** from the bank’s phone app. Customers then input the code and their PIN to access the ATM.
Two Flavors

“Tap and Pay” ATM access service that uses “near-field communication” (NFC). To use the service, owners log into mobile wallet apps and hold the phone near an NFC-enabled ATM.
Biometric Debit/Credit Cards
Forget Apple Pay. Mastercard's got a fingerprint reader

The payment company is developing a card that includes a built-in fingerprint sensor.

MasterCard Testing Biometric Credit Card Combining Chip, Fingerprint

Tech

by Ben Fox Rubin

Tech Industry

Credit card giant MasterCard is said to be testing a biometric credit card that combines only technology and fingerprints. USA Today reports the company has
VIDEO: MasterCard Biometric Card
Emerging Hard to Understand Technologies
Ever heard of **blockchain**?

“the **technology** most likely to change the next decade of business”
Blockchain Technology

Vast, global distributed ledger or database running on millions of devices and open to anyone, where not just information, but anything of value – money, titles, deeds, music, art, scientific discoveries, intellectual property, and even votes – can be moved and stored securely and privately.
Blockchain Technology

**Trust** is established, not by powerful intermediaries like bank, governments and technology companies, but through mass collaboration and clever code. Blockchains ensure integrity and trust between **strangers**.
Bitcoin

Relies on the **blockchain** network.

You install Bitcoin **wallet** on your PC or mobile device.

Generates a Bitcoin **address** that you share to make or receive payments.
Bitcoin

VIDEO: How Bitcoin Works...in under 3 minutes!
Questions & Open Discussion
Reminder: Course Evaluation
Bank Technology Trends

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