

# MONDAY SCHOOL: PAYMENTS PAST, PRESENT, FUTURE

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# PAST



# History

Gold Standard  
to Back US  
currency

Dinners Club  
opens up  
Credit at 20  
NYC  
Restaurants

Pizza Hut  
enables  
the first  
online  
order

1816  
Gold UK

1913  
Gold backs  
US dollar

1920  
Charge  
cards

1950  
Credit  
cards

1971  
Gold no longer  
backing US  
dollar

1994  
Online  
shopping

1997  
Mobile  
payments

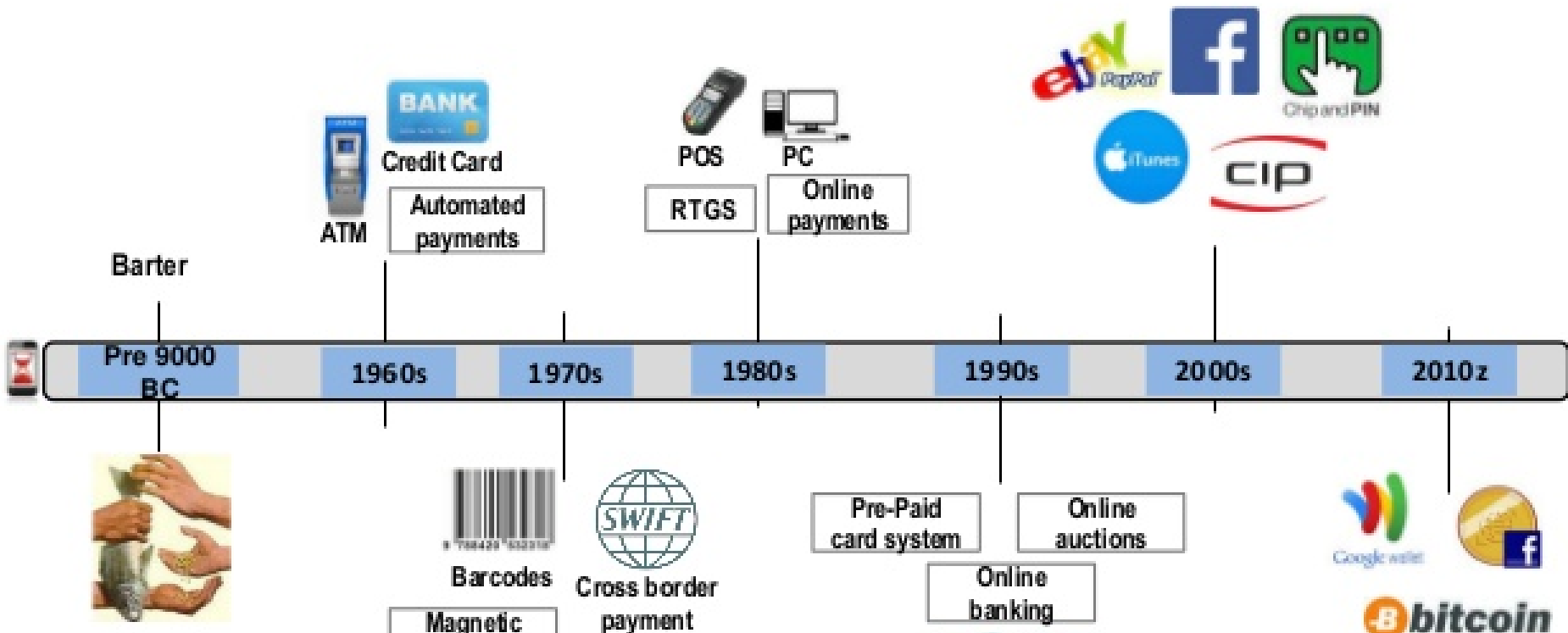
Gold officially  
the standard of  
Value in  
England

Department  
stores, Hotels  
and Gas  
Stations Pave  
the way with  
Charge cards

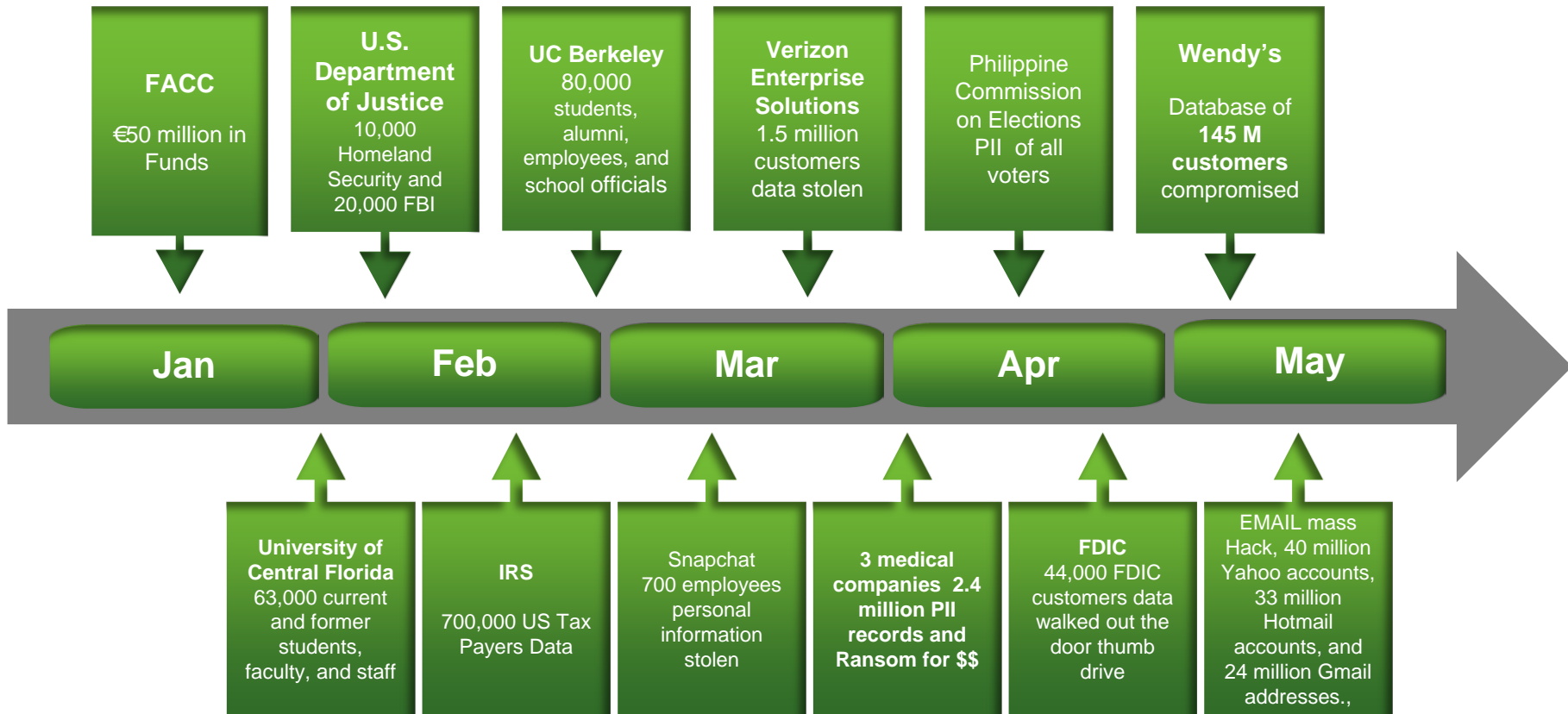
US  
determines  
Gold  
Standard  
outdated

Coke  
deploys  
Vending  
machines  
with mobile  
payment

# Payments Timeline



# Breach Happens: Notable Breaches 2016



# PRESENT





# Common Mobile Payment Types & Technologies



Near Field Communications



SMS



QR Codes



m-app wallet



mPOS



Location-based beacon tech





**0.2%**

The estimated percentage of in-store sales made with phones in 2015 in the United States, about \$8.7 billion



**15%**

The percentage of people who tried Apple Pay who said they used the service more than once a month



**66%**

Nearly two-thirds of Americans are now smartphone owners



# Consumer Preferences are Changing As Well



# The Mobile Wars

## Who wins device in hand

- Android grabbed 65.5 percent in the U.S, up 7.3 percent from the previous year.
- Major Chinese urban areas, Android phones had 77 percent market share, up 6 percent from a year ago
- In the top five European markets (U.K., France, Germany, Italy, and Spain), Android's market share increased to 75.6 percent, up 7.1 percent compared to the same period a year ago.



# Cost of a Data Breach

## Still on the rise



- US cost per capita \$217 **up 5%\***
- The average cost per record to resolve such an attack is **\$170**.
- Forecasted **average loss** for a breach is between **\$52,000-\$87,000** per 1,000 records
- Malicious attacks take an average of 256 days to identify

# Small Business Impact

- 90% OF BREACHES IMPACT SMALL BUSINESS
- **31%** OF CUSTOMERS TERMINATED THEIR RELATIONSHIP
- \$36k+ AVERAGE COST OF A DATA BREACH FOR SMALL BUSINESS



# The harsh reality of a Small Business data breach



## SMB Threat Reality:

- 69% of cyber attacks target retail and restaurants
- 96% of data breaches target payment card data
- **60%** of small businesses close within six months of experiencing a data breach

<sup>1</sup>[National Cyber Security Alliance](#)

<sup>2</sup>[PCI Data Security Standards Council - SMB](#)

# Phishing Still Main Point of Attack

1 of 10



23% open messages, and 11% click on attachments

50% open and click links <1 hour



# Malware is Unique

70% of malware is  
UNIQUE,  
**AVOIDING**  
anti virus detection



# Patch All Systems

Most

exploited vulnerabilities

99.9% are

> 1 year old



# Avoid Attacks

63% of confirmed data breaches involved weak, default or stolen passwords.

**1/4** of all attacks would be **AVOIDED** with **Two-factor authentication**



Something you know.



Something you have.

# EMV update

450 to 500  
Million Cards

58% of  
Merchants

## Where are we

- The number of chip cards in circulation sits somewhere between 450 million to 500 million, or more than two cards for every adult consumer in the US
- June 2016, it is estimated that EMV credit and debit cards will be accepted in 58% of U.S. merchant locations. EMV-readiness is not expected to reach a threshold of least 90 percent of merchant locations until 2017 – ([Estimates From The Strawhecker Group](#)).

# FUTURE



**54%**



Expect to use cash on a weekly basis by 2020 - a 12% decrease from today.

**18%**



Expect to use digital currencies on a weekly basis by 2020.

**40%**



Have used their phone as a mobile payment device.

**72%**



Prefer network providers as their mobile payment provider.

**79%**



Would increase usage of mobile payments if discounts or coupons were offered.

**52%**



Of millennials have used mobile payments & drive the adoption of emerging payments.

# Gift Cards

## Regulation on it's way

- Massive outage at Green Dot impacts the unbanked using Walmart prepaid customers. Senators investigate.
- New Gift Card rules would require card issuers to standardized their fee disclosures, limit customers' financial responsibility for fraudulent charges, and investigate errors and resolve them quickly. The consumer bureau has broad power to issues such rules, which do not require congressional approval. A final version of the regulations is expected within the next few months.



# Future Payments

## Ultrasonic Sound

### ■ Using Sound Waves

- All devices are enabled with Sound
- Reduces barriers created by phone manufactures
- A long way to go to develop security and Ultrasonic delivery and validation of payment.
- The human ear is incapable of capturing Ultrasonic “noise.” Ultrasound is the same type of technology is used to measure distances, detecting invisible flaws in structures, and creating ultrasounds for pregnant women. It is the first time this type of technology will be used to facilitate payments between users, though.



# Chip and PIN (New Study by Aite Group)

## 5 year cost vs benefits

- Implementing chip-and-PIN will cost \$7 billion but prevent only about \$850 million in lost-and-stolen card fraud over five years
- Issuers' expenses would total \$2.62 billion, prevent only \$852 million in lost-and-stolen fraud over five years, making the net issuer cost-benefit a negative \$1.77 billion,
- Merchants would incur 4.53 billion in cost, but get little in return through reduced lost-and-stolen fraud losses for which they would bear liability. The biggest expense, \$3.1 billion, would be for non-PIN-accepting merchants—about 37% of the card-accepting U.S. merchant base.

# Authentication

## Proximity

- Using the location-based capabilities of smartphones, PayPal and Square allow their mobile-wallet users to pay by checking in at merchant locations with an app that transmits their photo to the merchant for authentication.



# Superfecta Authentication



**Something I  
have**  
Device,  
Card, digital  
certificate,  
Token

**Something  
I Know**  
User ID,  
Password,  
PIN

**Where am I**  
Geo  
Location  
Beacon tech

**Who am I**  
Multimodal  
Biometrics

# Consumer Driven

