The Copernican Revolution in Banking

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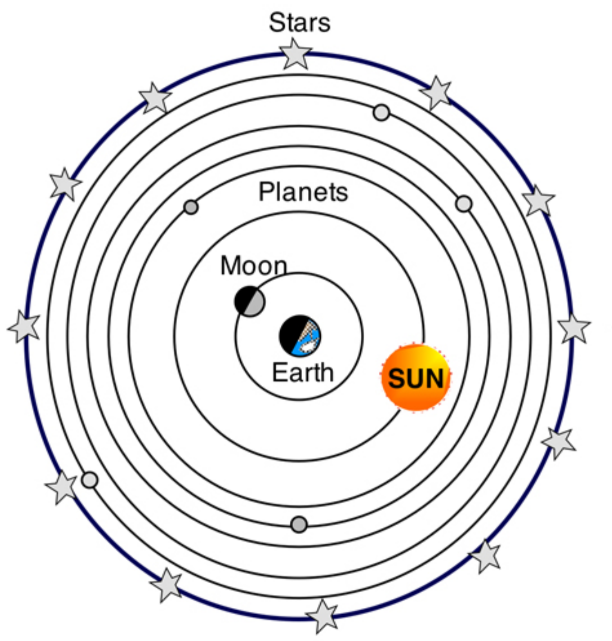
In the beginning, God created the heaven and the Earth…

Starting with Church origins, there was a long-held belief that the Earth must be at the center of the universe

The Church held the following core tenets:

1 God created man and **man is the center** of his creation

2 Thus, **Earth must be at the center** of the universe (the Geocentric Theory)



Geocentric Theory

Some of the smartest people in history justified the Geocentric Theory by finding evidence that supported their *a priori* beliefs

1. From the view of the Earth, **the sun appears to revolve around the Earth** once per day. The moon and planets have their own orbits, but they also revolve around the Earth once per day.

2. **The distribution of the stars in the sky:** Half the stars are above the horizon, and half are below the horizon at any given time

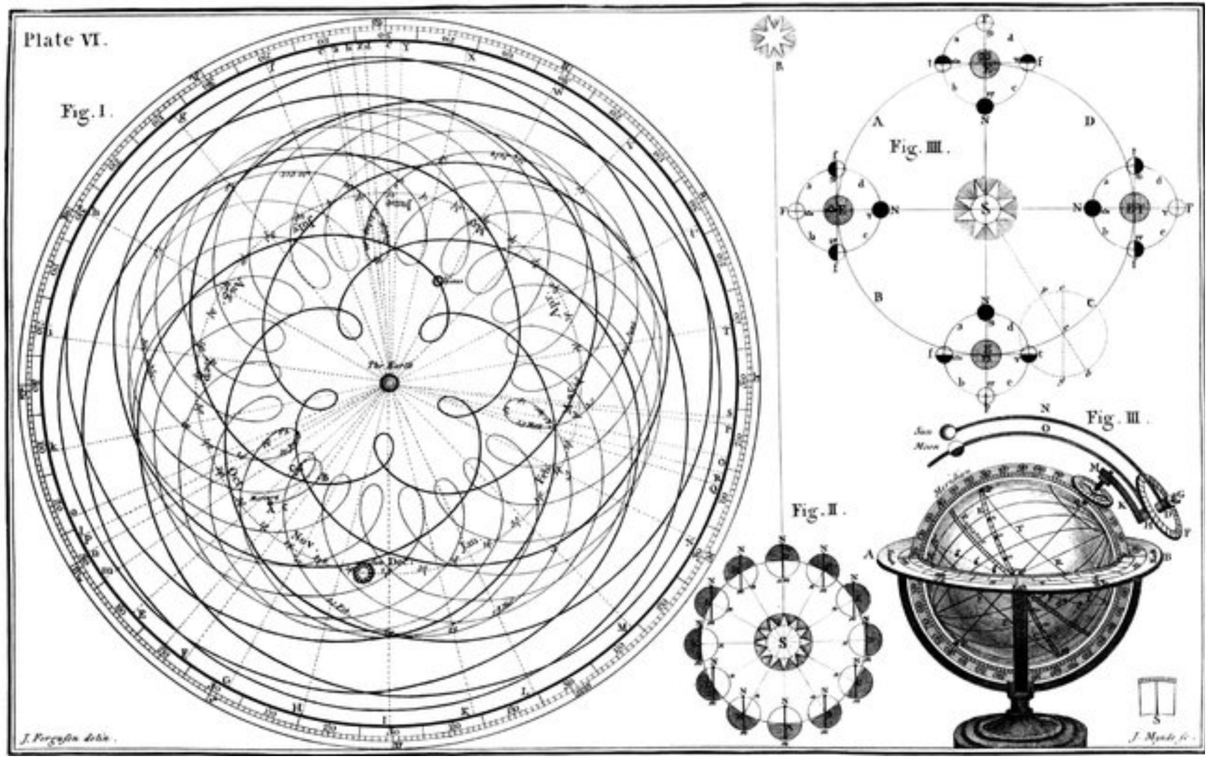
3. **The Earth does not seem to move** from the perspective of an Earth-bound observer

Plato

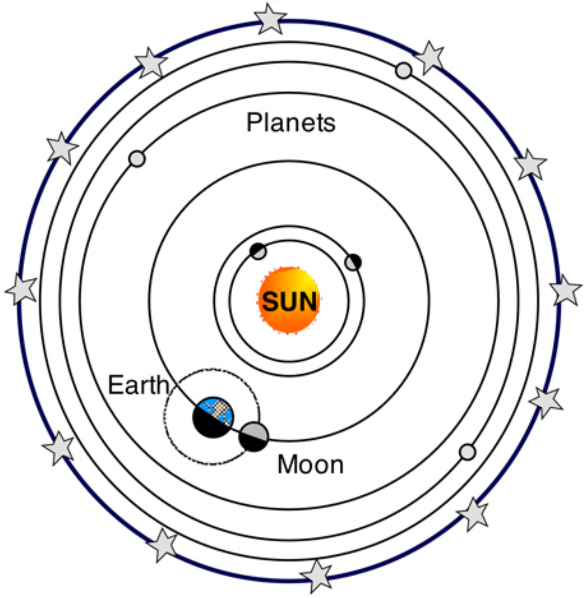
Aristotle

Ptolemy

Mental gymnastics were needed to rationalize observations

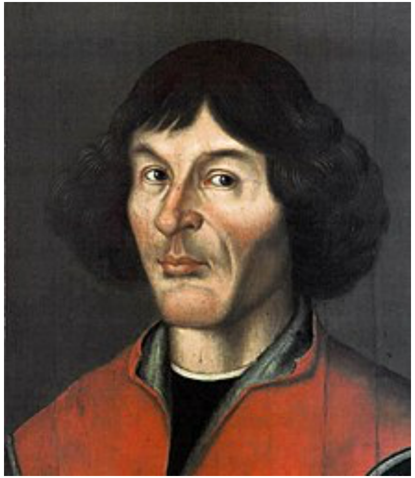


Copernicus was the first scientist to challenge the *a priori* notion that the Earth was at the center of the universe



Heliocentric Theory

The Heliocentric Theory **fit observed data** as well as the Geocentric model, but was **simpler and led to more accurate models** (e.g., elliptical orbits) that never would have emerged from the Geocentric model



1,500 years of belief was torn down and replaced by a superior world view in a few decades. It all started with an alternative to the *a priori* view that proved to be true.

Banking has its own *a priori* beliefs

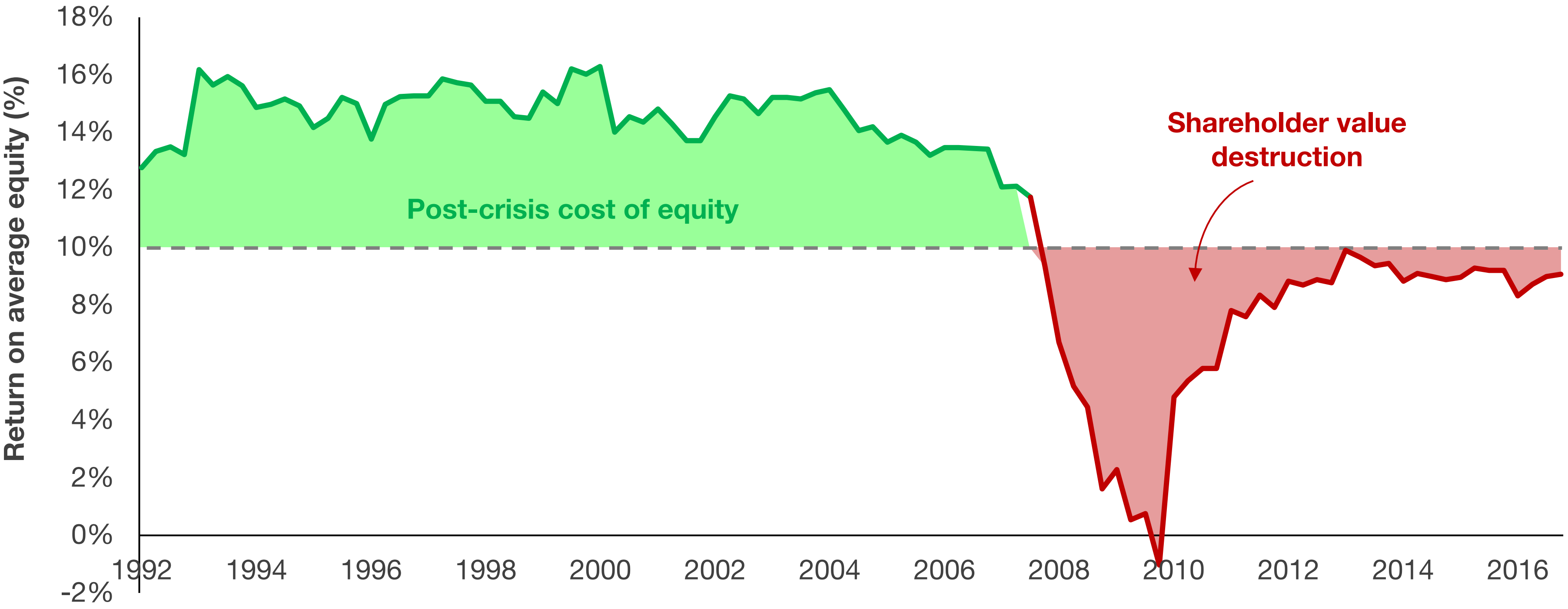
The "Geocentric Model" of Banking consists of the following principles:

1. Banks must manage a **complete suite of banking products** (core banking, lending, payments, wealth management, etc.)

2. Banks must serve **all clients** (consumer, SME, and corporate) through **all channels** (branch, online, telephone, mobile, etc.)

The Geocentric Model of Banking produced solid economic returns for many years, but this is no longer true

Banking return on average equity in the U.S.



Source: Federal Reserve Economic Data. Return on average equity for all U.S. Banks, percent, quarterly, not seasonally adjusted. Shareholder value shading assumes constant cost of equity.

It's easy to blame all of the Banking ecosystem's problems on increased regulatory scrutiny and capital requirements, but there is a profound shift occurring that can't be ignored

That which can be destroyed by the truth, should be.

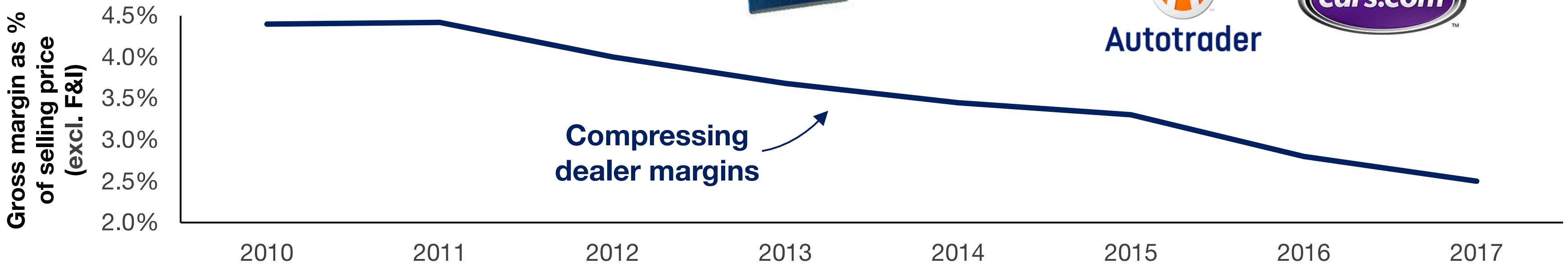
– Carl Sagan

Armed with more information, consumers increasingly shop…

Cars

20 years ago	10 years ago	Today
• Consumers had limited information on car price and needed to haggle for a better price • Dealers had pricing power and made healthy margins	• More pricing data became available online, especially in the used car market (e.g., Blue Book)	• New services provide consumers with complete pricing transparency for new and used cars • Near-perfect price transparency has led to a giant reduction in dealer margins

TRUECar CarGurus Autotrader cars.com



Source: NADA

…and Banking products are no exception

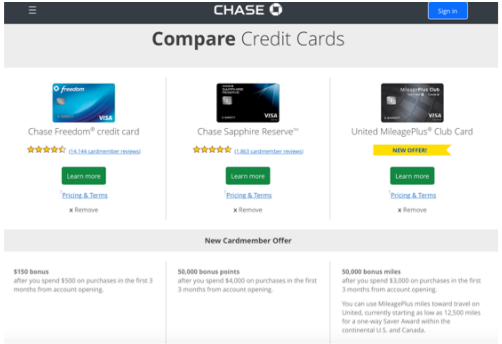
Credit cards

20 years ago

- Almost all credit card offers came to consumers in the mail or could be found at Bank branches
- Consumers struggled to compare offers and understand their choices

10 years ago

- Banks began offering products online, allowing consumers to shop from home
- All of a Bank's credit card products could be seen in one place and compared



Today

- New aggregation and price comparison services enable consumers to shop bank by bank online
- Consumers now have complete information about all available products, pricing and approval odds in a single location

credit karma

CreditCards.com

lendingtree

nerdwallet

Full transparency enables rational decision-making by consumers

Certificates of deposit price comparison

Bank/Institution	APY	Term	Minimum Deposit	
Capital One 360 MEMBER FDIC Offer Details	2.65% As of: Thu Mar 1	5 yrs	$0	NEXT
Goldman Sachs Bank USA MEMBER FDIC	2.60% As of: Thu Mar 1	5 yrs	$500	NEXT
Synchrony Bank MEMBER FDIC Offer Details	2.50% As of: Thu Mar 1	5 yrs	$2,000	NEXT 877-309-6611 Toll-free, no obligation
Ally Bank MEMBER FDIC Offer Details	2.50% As of: Thu Mar 1	5 yrs	$25,000	NEXT

The top position routinely attracts **90%+** of all clicks!

Source: Bankrate website. Note: Click rate estimated based on conversations with industry insiders.

Thus, the big question every business needs to ask itself:

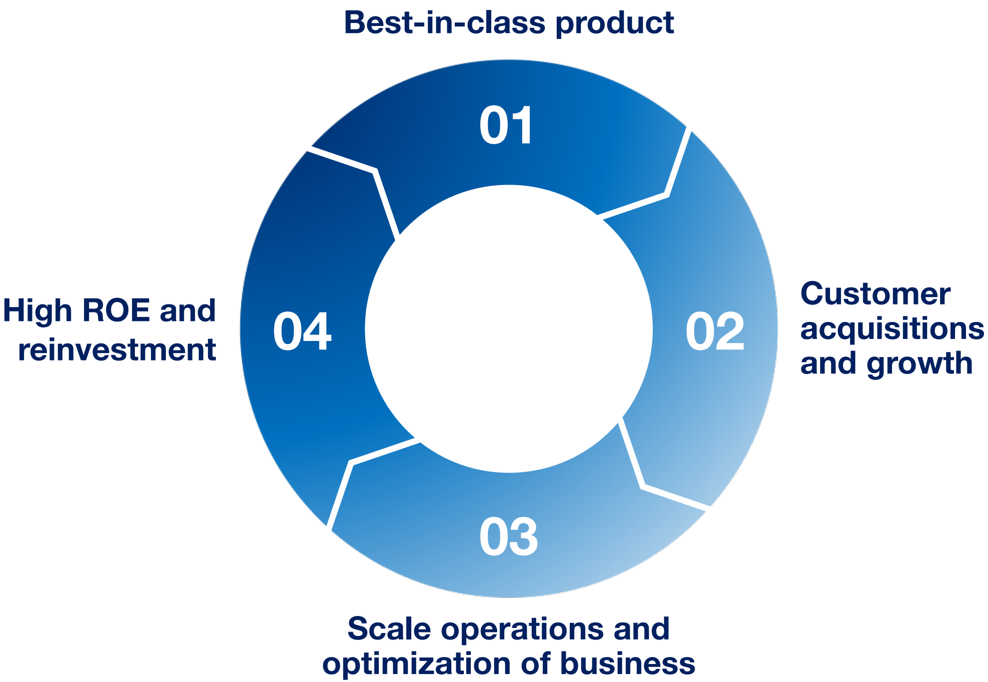
If a rational consumer were armed with perfect information, would they choose my product?

Offering best-in-class products spurs a growth flywheel that yields attractive economics

2nd-tier value propositions struggle

- **01** — 2nd-tier value proposition
- **02** — Limited growth
- **03** — Subscale operations
- **04** — Low ROE

Best-in-class products spur a growth flywheel



It's impossible to believe that all Banks are adequately resourced to deliver a complete suite of best-in-class products

Bank product offering

Deposits
- Savings accounts
- Checking accounts
- Debit cards
- Prepaid cards
- Certificates of deposit

Credit
- Credit cards
- Mortgages
- Home equity loans
- Auto loans
- Lines of credit
- Equipment leasing

Treasury Management
- Receivables (cash services, lockboxes)
- Payables (checks, wires)
- Merchant services
- Payroll services
- Liquidity sweeps
- Foreign currency

Capital Markets
- Financial risk management
- Investment banking
- Debt capital markets
- Equity capital markets
- Institutional brokerage

Investment
- Estate settlement
- Guardianship
- Investment management services
- Individual retirement accounts
- Custody accounts
- Trusts
- Tax services
- Securities
- Short-term investments
- Portfolio management products

Insurance
- Life insurance
- Disability insurance
- Employee benefits plans (dental, medical, etc.)
- Long-term insurance
- Property & casualty
- Reinsurance
- ID theft protection

300+ products across segments
(consumer, SME, and corporate)

Share will increasingly become concentrated in the hands of best-in-class product providers as channel barriers fall and information becomes more abundant

The time is right for Banks to take a “Copernican Leap”

The “Copernican Leap” in Banking:

1. Be willing to **offer your best products and capabilities** to other institutions’ customers

2. Be willing to **replace non-core products and capabilities** with best-in-class offerings from third parties

In this new world, four types of players will emerge

		Manufacturer	Distributor
1	TRANSACTIONAL BANKS	**YES** for core product(s)	**NO**
2	GENPOP BANKS	**MAYBE** for core product(s)	**YES** to general population
3	VERTICAL BANKS		**YES** to specific segments
4	NON-BANK PLAYERS	**NO**	**YES** to existing customers

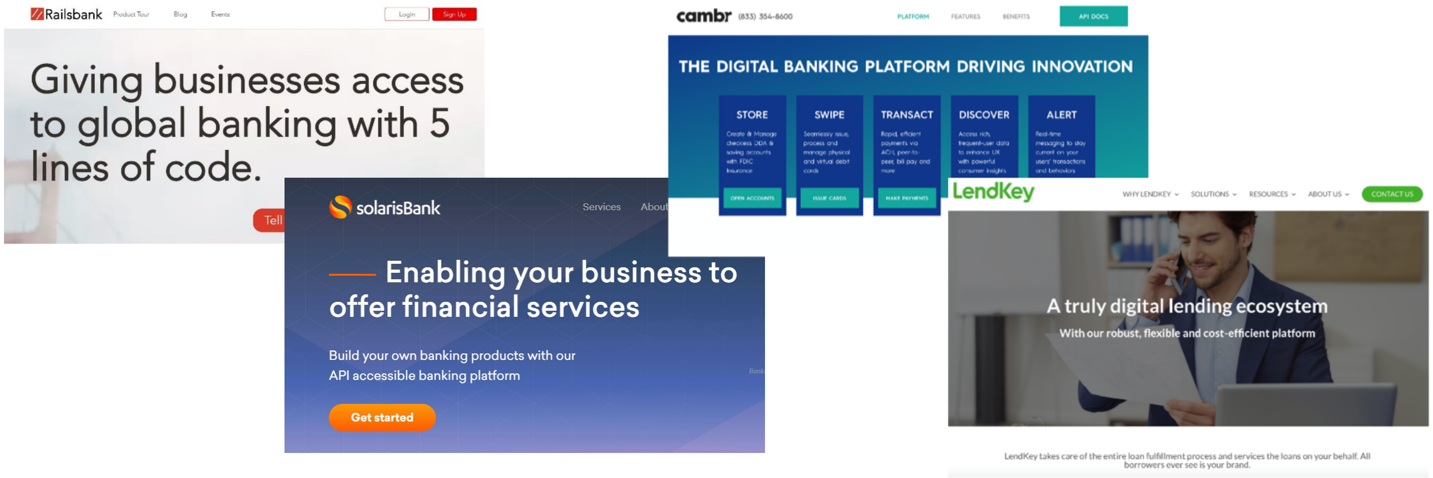
Transactional Banks **manufacture white-label versions** of specific products and services

Key characteristics: Legal right and skills to manufacture best-in-class products, paired with efficient and scalable operations

AWS is a good analogy for how Transactional Banks that specialize in specific service layers and core functionality could emerge

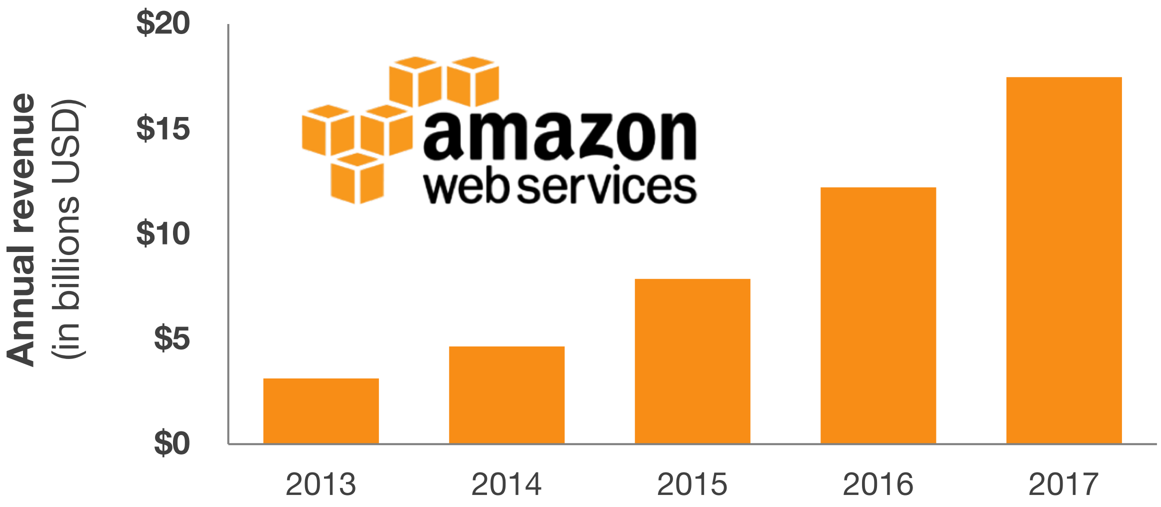
amazon web services of

Lending	Deposits	Payments	Investments



AWS also serves as a great proof point that well-managed back-end functionality can generate a giant profit pool

AWS annual revenue (launched 2006)



BEFORE 2010

Owning rackspace / computing seen as strategic

TODAY

Foolish to own and manage servers – **1MM+ customers** active each month in 2016

AWS reduces the cost of cloud management – on average in 2014, AWS reduced the cost of computing by 30%, storage by 51% and relational databases by 28%

Source: Amazon company reporting

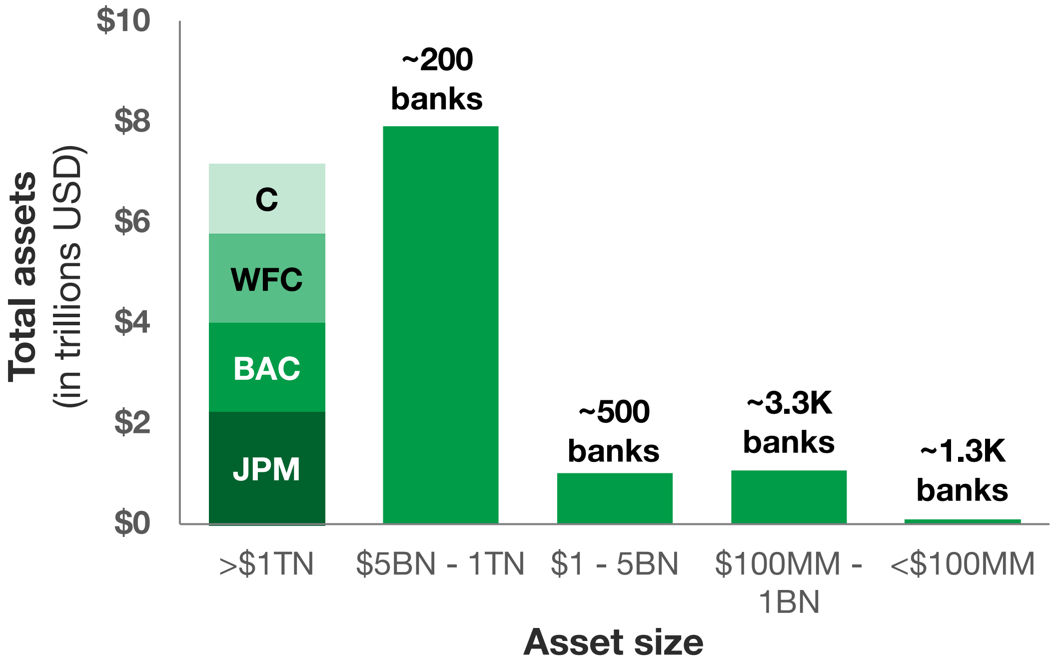
AWS has centralized 1MM+ cost centers into one giant profit center. Transactional Banks can do the same in the Banking world!

Genpop Banks serve the general population with a broad suite of products

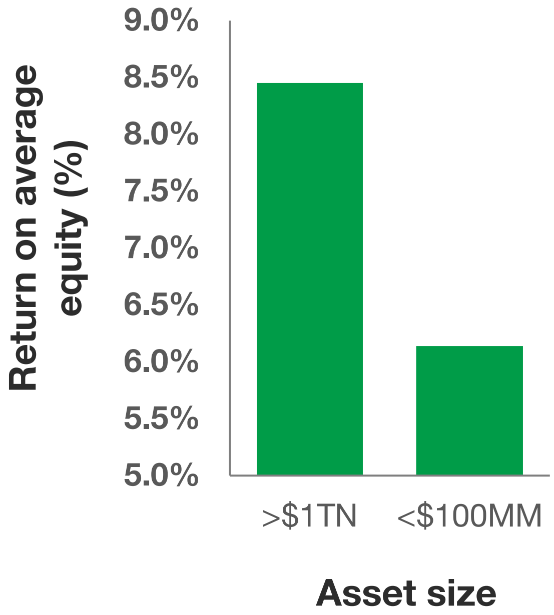
Key characteristics: Complete suite of products (own and third party) that cater to the general population

There are many full-service Banks and Credit Unions today, most of which are too small to deliver a suite of products profitably

Landscape of U.S. Banking industry



Banking return on average equity in the U.S. in 2017



Source: BankRegData website

What if the 5,000+ Banking Institutions substituted their current offerings with third-party best-in-class products and infrastructure?

Vertical Banks serve specific segments vs. the general population

Key characteristics: Curated offering of products (own and third party) that are tailored to the segment's needs

Relationship management
is not dead…if you go vertical

Focus on a single segment allows for the curation of a best-in-class suite of products and tailored customer experience

Landlord Bank	Agriculture Bank	Small Business Bank
• Tenant screening services	• Farm equipment leasing	• SMB loans
• Escrow accounts	• Agriculture real estate loans	• Accounts receivables factoring
• SFR loans	• Livestock loans	• Accounting/tax services
• Tenant/landlord payments	• Cash flow insight tools	• Merchant accounts

Vertical Banks will be very disruptive to the Banking ecosystem. They will dominate a segment by offering a small number of world-class products that are hyper-focused on the segment's needs.

Non-Bank players will be able to **distribute Banking products** manufactured by the Transactional Banks

Key characteristics: Massive base of engaged customers

Non-Banks have massive bases of engaged customers…

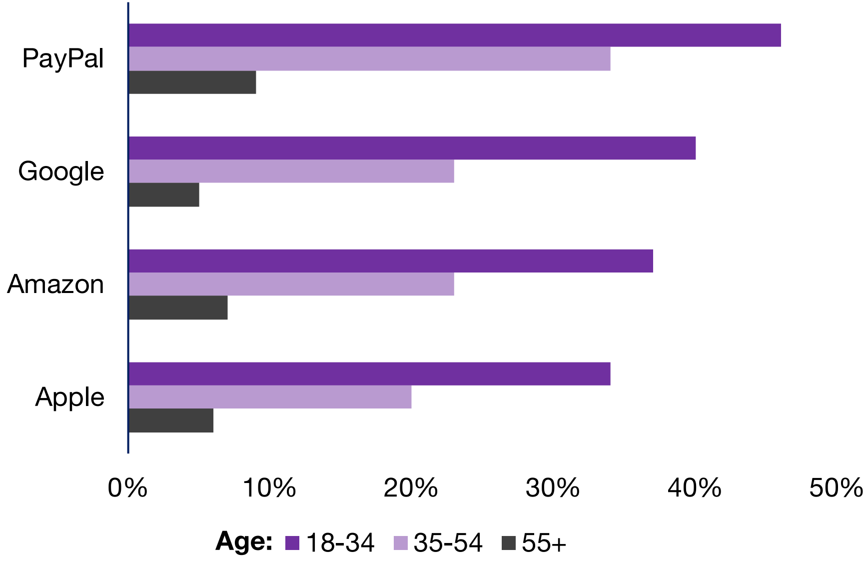
Google	Apple	Facebook	Amazon
87%	**>215MM**	**1.9BN**	**90MM**
share of search	iPhones sold in 2017	active monthly users	Amazon Prime members
Content and advertising	Entertainment and software	Social and distribution	Commerce and fulfilment

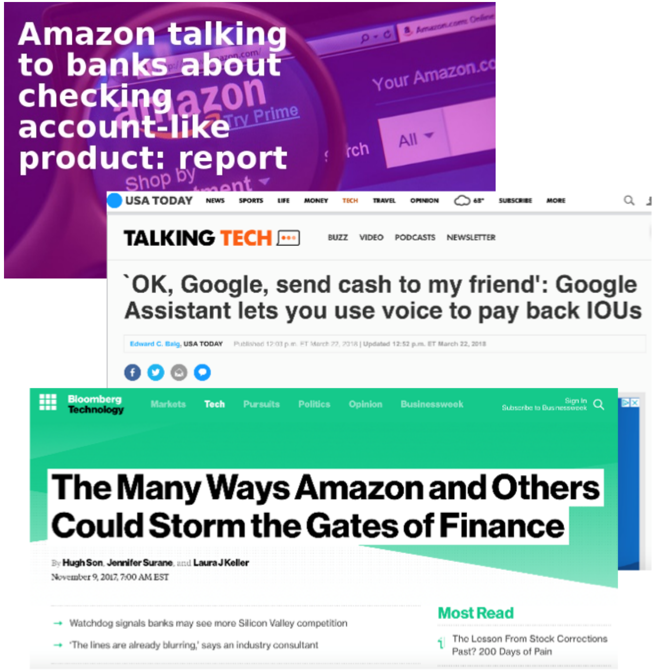
Source: Statistica website

…to whom they can offer select Banking products via partnerships with transactional banks

If these companies offered Banking services, how likely would you be to bank with them?

Likely or very likely





Source: Accenture survey

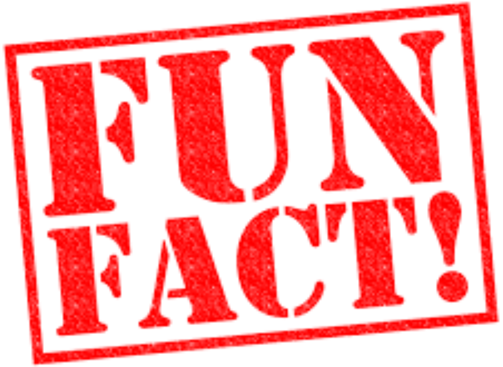
The “Copernican Banking” framework will allow today’s Banking ecosystem to evolve and become more rational

2019	2020	2021	2022	2023	2024	2025	2026	2027

NEXT 1–3 YEARS	NEXT 3–6 YEARS	NEXT 6–10 YEARS
Large banks partner with non-banks, setting themselves up to offer Transactional Banking services	Transactional Banks gain scale as they serve smaller banks in addition to non-banks Banks choose to offer best-in-class products (own and third party) or watch market share and profitability erode	Several Transactional Banks are powering the Banking ecosystem, capturing half of all economics Battle for the customer intensifies – market share consolidates to best-in-class product manufacturers and distributors

The big takeaway:

Transactional banks are coming. Become one, use one, or watch your market share and profitability continue to erode.



A 2006 survey revealed that 20% of the U.S. population still believes that the sun revolves around the Earth

Thank you!

Frank Rotman is a founding partner of QED Investors.
His investments are focused on financial services and financial technology companies that are credit oriented or have data analytics foundations at their core. His portfolio of 20+ investments includes many of the emerging next-generation companies in the financial services eco-system, including Credit Karma, Prosper, Avant, SoFi, GreenSky, LendUp and AvidXchange. Frank was named to the 2018 Midas List in recognition of his accomplishments as an investor over the past decade.

QED Investors actively supports high-growth businesses that use information to compete – and win. The firm provides a combination of capital and capability and enjoys working closely with founders who share the conviction that information plays a decisive role in success.

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