



AI and Data Analytics in Banking 4.0

Industry 4.0 Summit

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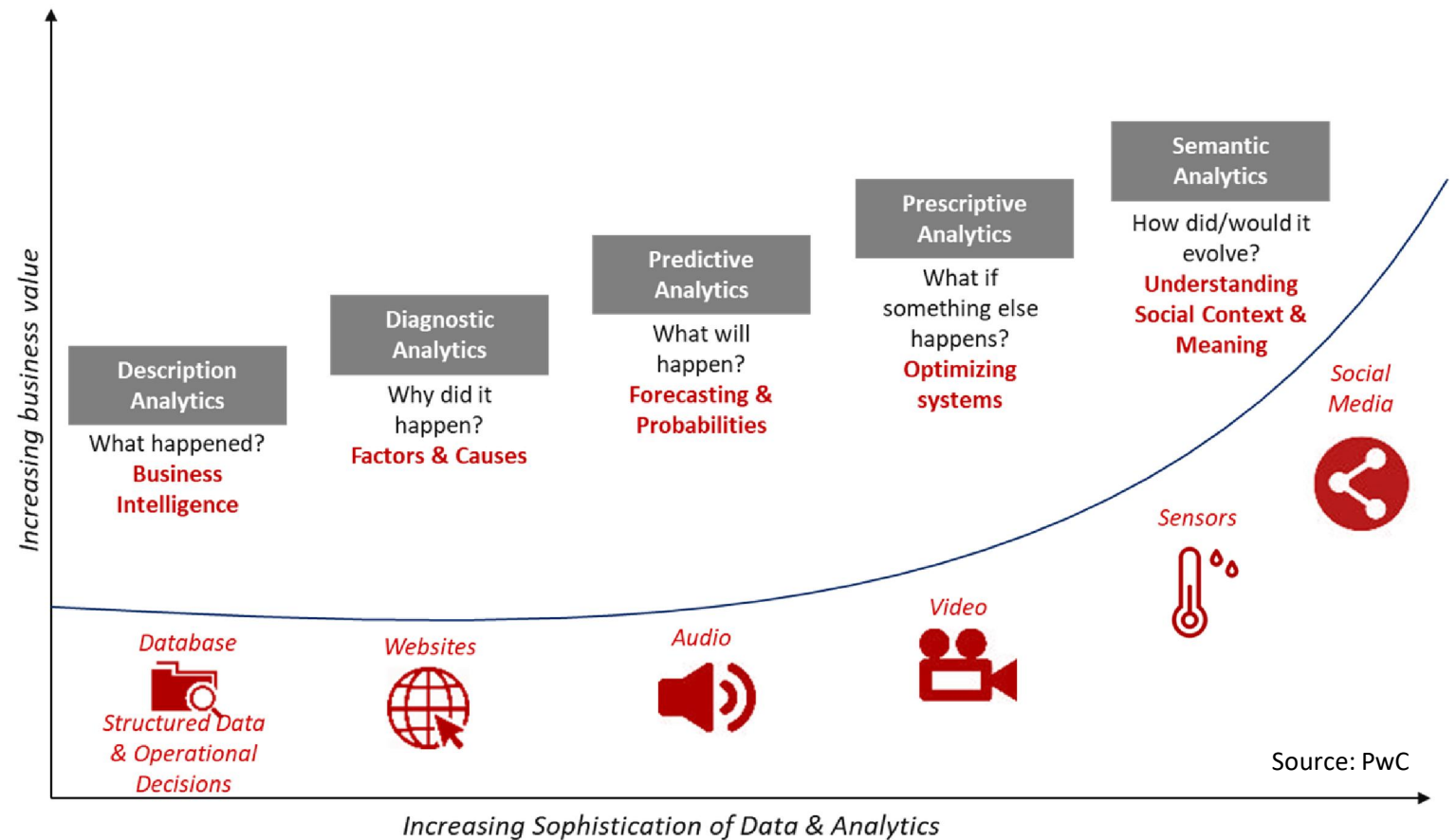
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Past performance is not a guarantee of future returns.

“Artificial intelligence will reach human levels by around 2029. Follow that out further to, say, 2045, we will have multiplied the intelligence, the human biological machine intelligence of our civilization a billion-fold.”

- Ray Kurzweil



- **Artificial intelligence (AI)** is a branch of computer science. It involves developing computer programs to complete tasks, which would otherwise require human. AI algorithms, involving big and very big data, together can tackle learning, perception, problem-solving, language-understanding and/or logical reasoning.

Banking 1.0 (1866-1967)

- ✓ Offline Branches
- ✓ First transatlantic cable (1866)
- ✓ **Telephone/ telex (1966) -> Telephone Banking**



Banking 2.0 (1967 – 2008)

- ✓ First ATM (Barclays), handheld calculator (Texas Instruments) (1967)
- ✓ NASDAQ (1971)
- ✓ **SWIFT (1973)**
- ✓ Bloomberg (1981)
- ✓ **Mobile phone (1983)**
- ✓ Program trading (1987)
- ✓ Online banking (NBS, WF) (1983-1985)
- ✓ Internet / Dot.Com Bubble (1999)
- ✓ 8 banks in the US have 1m+ online banking customers (2001)
- ✓ Global Financial Crisis (2008)

Core Banking Activities

- Take Deposit
- Lend/Invest
- Make Profit



Banking 3.0 (2008 – Present)

- ✓ Launch of iPhone (2007)
- ✓ **Wealthfront is founded and provides automated investment services (2008)**
- ✓ Blockchain Technology.
- ✓ **Square: First mobile payment (2009)**
- ✓ Kickstarter: crowdfunding platform (2009)
- ✓ **P2P money transfer service Transferwise (2011)**
- ✓ **WeChatPay and AliPay hit 1bn users marks**
- ✓ **First Digital Bank licences: MyBank, WeBank, Kakao Bank etc**

SPEED

**“Banking is essential.
Banks are not”**

Bill Gates





“According to a study from Accenture, 35 percent of the market share for North American banks is at stake by 2020. As much as 15 percent of bank revenue could shift to online-only banking. The other 20 percent could go to retailers...”

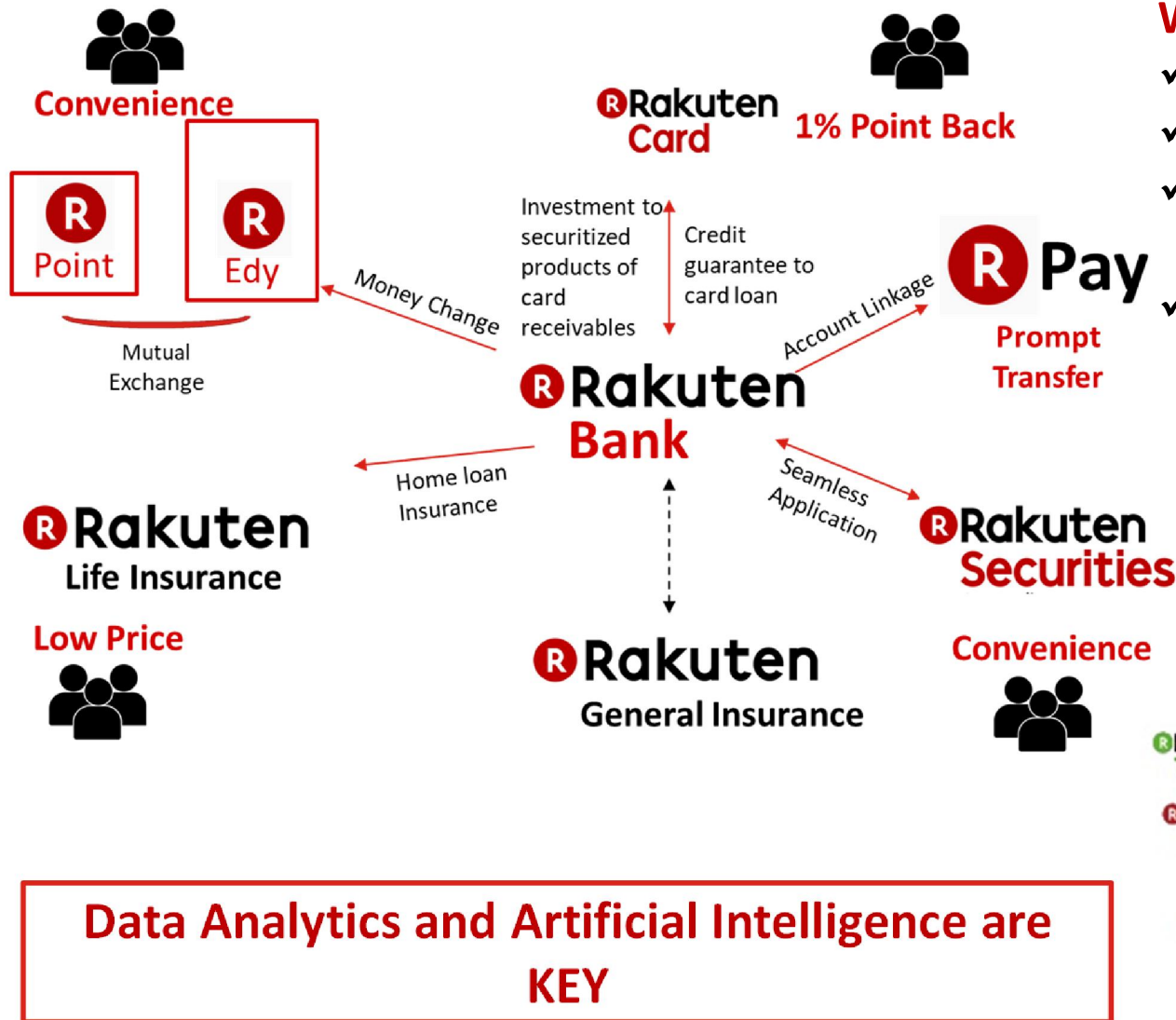
What are the trends:

- ✓ Automation, Robo-advisors
- ✓ Decentralized Database and Processes
- ✓ Personalized Offerings to all segments, not just HNW or Corporates.
- ✓ Banking beyond banks:
 - P2P lending
 - Group Saving
 - Crowd Funding
 - (Micro)-insurance
 - Zero Fee Cross-border Remittance
 - Access to other Products/Services



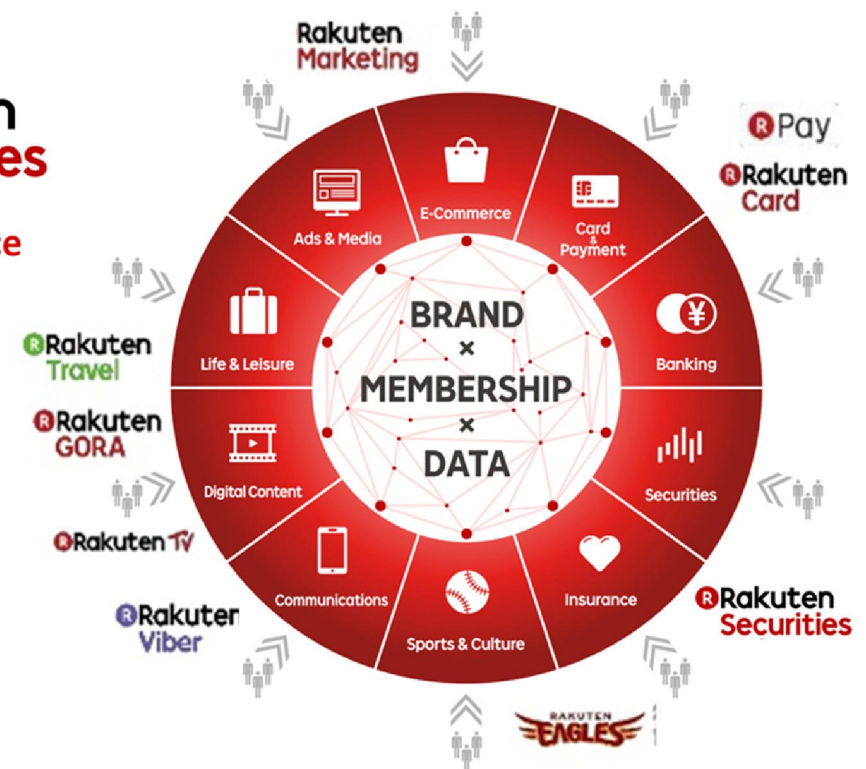
Winners in Banking 4.0 are those who can build complete ecosystem around users/ customers to best understand customers at scale leveraging data and Artificial Intelligence. They may be banks, may be not.

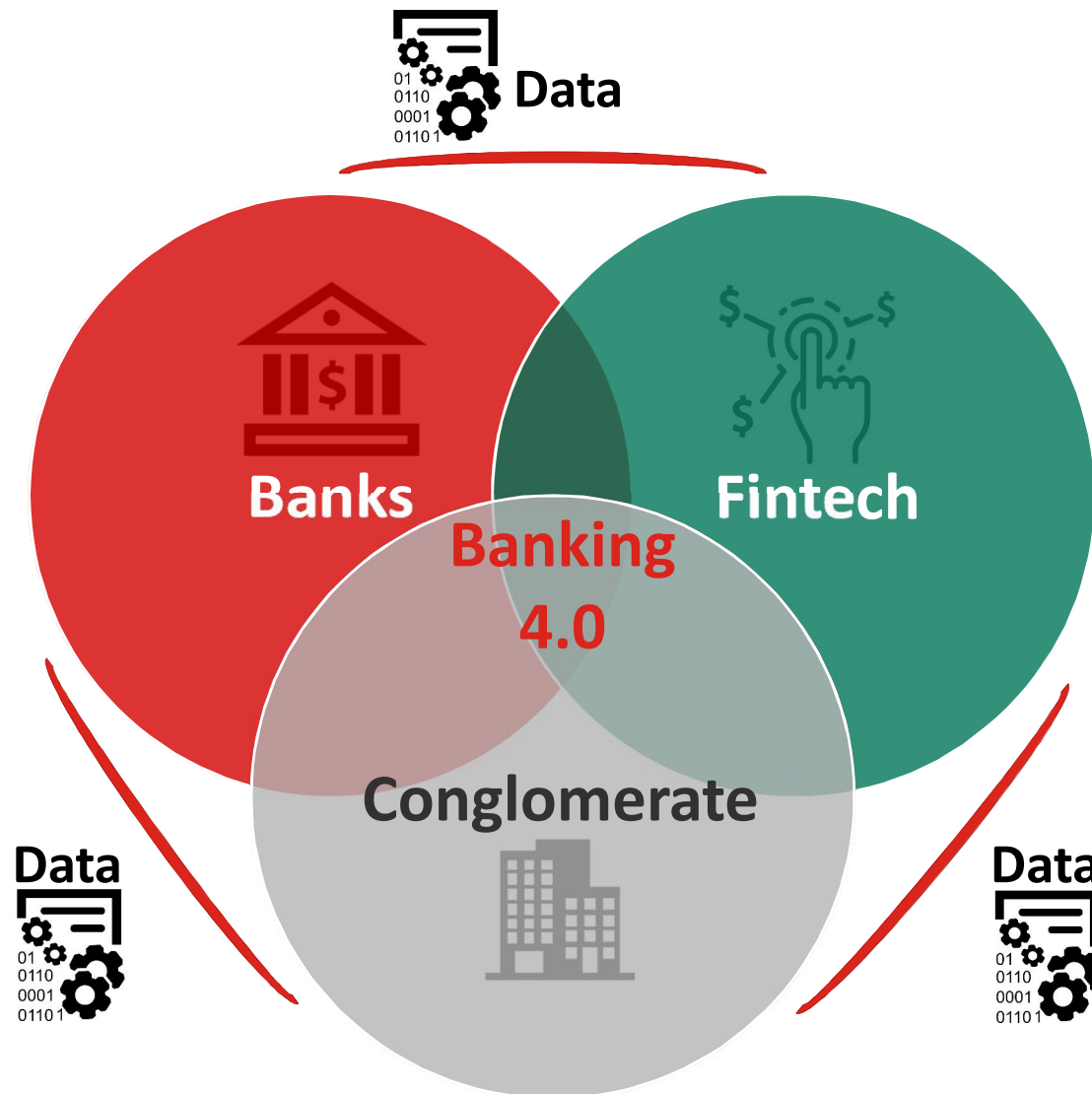
Bank Department	Improvements	Examples
Front Office	<ul style="list-style-type: none"> i. Automated interfacing with customers; ii. Improved customer experience; iii. Cost reductions for delivery and human resource. 	<p>Chatbots :</p> <div>   </div> <p>- Robo-advisors:</p> <div>   </div>
Middle Office	<ul style="list-style-type: none"> i. Improved collaborations between different operational teams within the bank; ii. Automated proofread, contracts, to improve human's efficiency and hence cost-saving; iii. Personalized knowledge hub and training materials to improve cross-departmental knowledge etc. 	<ul style="list-style-type: none"> - JPMorgan Chase's Contract Intelligence (COiN) platform uses image recognition software to analyze legal documents and extract important data points and clauses in seconds; - AlphaSense's sophisticated search functionality leverages natural language processing to find and track relevant information in search;
Back Office	<ul style="list-style-type: none"> i. Improved risk management/credit management ii. Improved treasury investment decision making (money market, FX hedge etc) iii. Other HR/Accounting automations 	<ul style="list-style-type: none"> - FICO uses AI, to build credit risk models. - IPSoft's Amelia uses Natural Language Processing to scan legal and regulatory text for compliance issues; - Mastercard's Decision Intelligence technology analyze various data points to identify fraudulent transactions.



What to note

- ✓ Rakuten did NOT start as Bank
- ✓ Rakuten was an e-commerce player
- ✓ Data-backed product and business development
- ✓ Complete User-centric Ecosystem





Success Factors

- ✓ Banks + Fintechs Coopetition
- ✓ Data-backed initiatives
- ✓ Favorable Regulations
- ✓ Tech Savvy Population

Q&A

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