

EXPLORING THE IMPACT OF DISRUPTIVES ON THE BANKING INDUSTRY TO ASSESS THE EFFECT ON YOUR IT SECURITY AND RISK MANAGEMENT —EUROPEAN BANKING FORUM—

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3. FINTECH DEFINED
4. THE REAL ROLE OF FINTECH
5. IS THERE A FUTURE FOR THE INCUMBENTS?
6. CONCLUSION



ABOUT DR. PHILIPPE J.S. DE BROUWER

Philippe studied theoretical physics and later acquired a second Master –Business Engineer– while working full time. Doing so, he solved the “fallacy of large numbers puzzle” that was formulated by P.A. Samuelson 38 years earlier. In this Ph.D. he successfully challenged the assumptions of the Noble price winning “Mean Variance Theory” of H. Markovitz that dominated our thinking about suitability of investments for more than 60 years. In his professional career he moved from insurance to banking focusing on IT, and then found passion in asset management. For Fortis (BNP Paribas) he helped the young investment management company grow, stood at the cradle of one of the first capital guaranteed funds and got promoted to director in 2000. In 2002 he moved to KBC, merged 4 companies into one and became CEO of the merged entity in 2005. Under his direction the company climbed from number 11 to number 5 on the market. In the aftermath of the crisis he helped creating an investment management company in Ireland that soon accommodated the management of 24 bln. € in ca. 1000 investment funds. In 2012 he widened his scope to Risk Management and specializing in statistics, analytics, data, numerical methods. Later he moved on to RBS Group where he was head of Analytics Development. Now he works for a larger bank as head of the Independent Model Review Service Centre.



Philippe also coaches on team leadership and teamwork as well as teaching (mainly for Vlerick Business School and the University of Warsaw).

SECTION 1

PRACTICAL INFORMATION

QUESTIONS? CONTACT

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SECTION 3

WHAT IS FINTECH

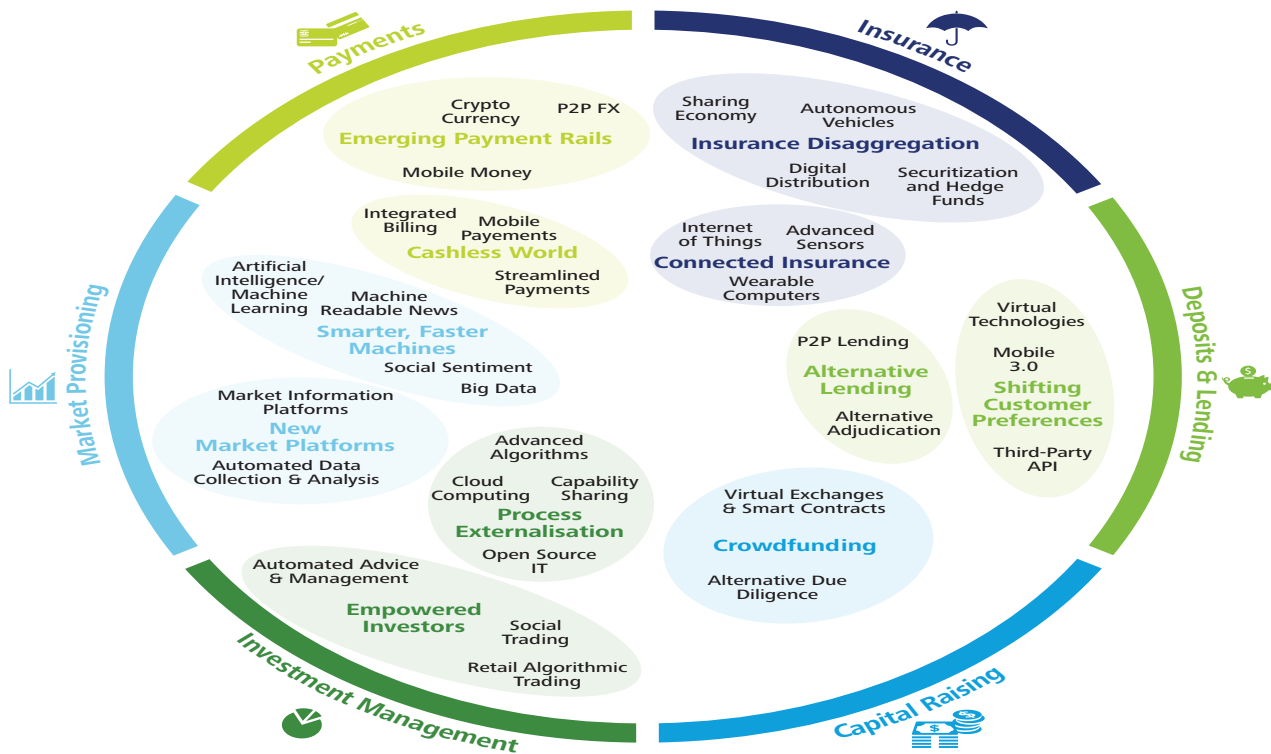
3. WHAT IS FINTECH

3.1 BRIEF HISTORY OF BANKING

BANKING HISTORY

- ① ca 2000 BCA in Assyria and Babylonia: grain loans to farmers and traders
- ② ca 500 BCA: Ancient Greece, Roman Empire, China and India: accepted deposits and changed money
- ③ 1400s Florence (Italy) first modern banks (eg. Medici Bank)
- ④ 1695 Bank of England issues first banknotes
- ⑤ 1728 first overdraft facility by the Royal Bank of Scotland
- ⑥ 1800s international finance: Mayer Amschel Rotchild and his five sons in London, Paris, Frankfurt, Vienna, and Naples
- ⑦ end 1800s: first clearing house (London)
- ⑧ 1960s ATM
- ⑨ 1990s online banking
- ⑩ 2000s: securitization, CDOs and other ABSes
- ⑪ ... FinTech? Public Ledgers?

11 Clusters of Innovation



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FIGURE 1 :

3. WHAT IS FINTECH

3.2 PEER-TO-PEER LENDING

P2P LENDING

DEFINITION 1 (P2P LENDING)

Peer-to-peer lending refers to lending money to individuals or businesses through online services that match lenders directly with borrowers.

Note:

- also the wording Person-to-Person lending or the acronym P2P lending is used
- while the concept of people lending to people is about 4'000 years old, this wording refers to the online lending

P2P LENDING FACTS

- first: Feb 2005, Zopa in UK
- largest: Lending club (USA)
- 2016-10-07: the market cap of Lending Club is 2.28B (est. 2006 — 1000 employees) – compare:
 - Royal Bank of Scotland Group plc (est. 1727 (Coutts: 1692) — 92'300 employees): 21.53B
 - Erste Group AG: (est. 1819 as the first Austrian savings bank — 42'692 employees): 11.50B

China P2P lending

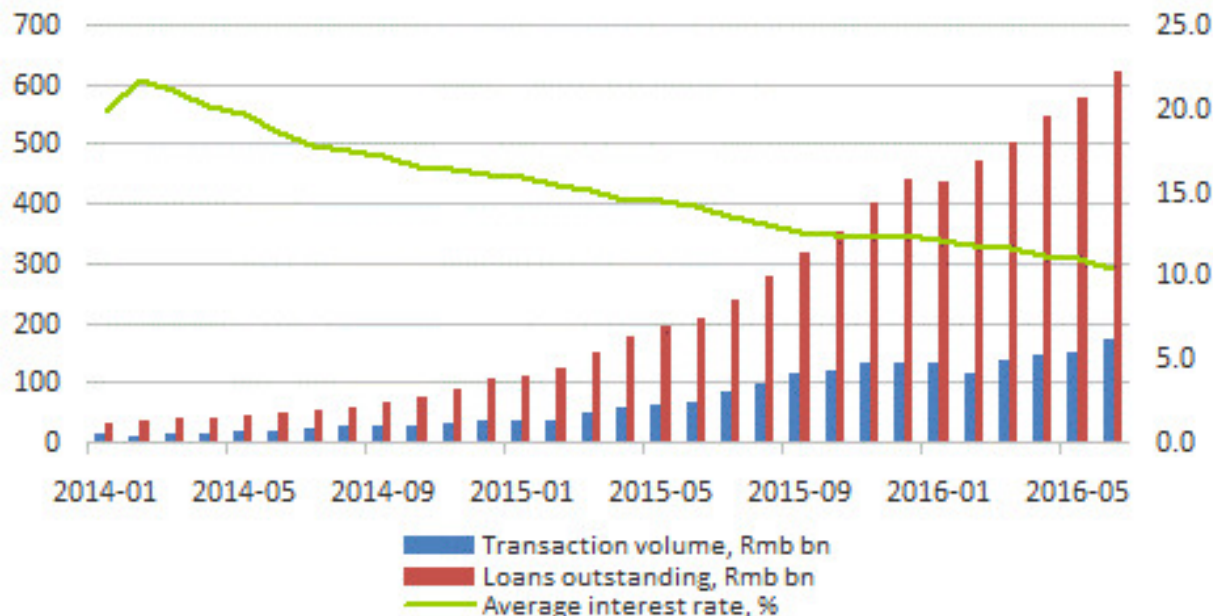


FIGURE 2 : source: lendingtimes.com (July 27, 2016) – total household lending 125'203B RMB (Statistical Communiqué of the People's Republic of China on the 2015 National Economic and Social Development)

3. WHAT IS FINTECH

3.3 CROWD-FUNDING

HISTORY

CROWD-FUNDING IS NOTHING NEW

- “La Liberté éclairant le monde”
- designed by Frédéric Auguste Bartholdi, built by Gustave Eiffel and given to the young USA
- Lack of funding for the pedestal in 1885
- Publisher Joseph Pulitzer of the “New York World” attracted donations from more than 120'000 contributors, most of whom gave less than a dollar.



DEFINITION

DEFINITION 2 (CROWD-FUNDING)

Crowd-Funding is sourcing funding from many contributors (without the intermediation of an investment banker)

Different styles of Crowd-Funding:

- ① equity
- ② product
- ③ sponsoring



MODERN HISTORY

- Product crowdfunding / Rewards based crowdfunding — eg. Pebble Watch, Ubuntu Phone
- Debt based crowdfunding (P2P lending) — eg. Lending Club
- Donation based crowdfunding — eg. GoFundMe
- Equity crowdfunding
- mini-IPO



3. WHAT IS FINTECH

3.4 BLOCKCHAINS DISTRIBUTED LEDGERS



BITCOIN

BITCOIN AND FINTECH HAVE A LOT IN COMMON

- ... is since 2008 is a distributed ledger system with no bank in between
- ... is an engine to create trust in a trust-less world
- ... is a step in democratizing money



THE NEXT STEPS

- decentralized mortgages
- decentralized ownership registers
- decentralized money
- decentralized equity and product funding



3. WHAT IS FINTECH

3.5 MARKET-PLACES



IS IT STRANGE THAT ...

- the world's largest Internet company produces no PC
- the world's largest market place is no place
- the world's largest transport company has no taxi's
- the world's largest bed-provider has no hotels
- ...
- the world's largest transaction engine (in its segment) is no bank

MARKET PLACES

- New Market Platforms: Market Information Platforms, automated data collection and analysis
- smarter (and faster) machines: AI and machine learning, machine readable news, social sentiment and big data.

PAYPAL, A PHENOMENON

- founded: 1988 — In 2014, PayPal moved \$228 billion in 26 currencies across more than 190 nations.
- market cap: 13 B USD.
- business model: leave the hard work of credit checks, credit management and regulatory compliance to the banks and provide hassle free payment convenience to customers. Simply do what banks could to but refused while using the bank's and on top of that reaping transaction information.

PayPal found a way to ride the banking system as a parasite and bringing great convenience to customers.

3. WHAT IS FINTECH

3.6 SCIENCE AND PROGRESS

SCIENCE IS THE MOTOR OF WELFARE

- thermodynamics → steam engine → first industrial revolution → crash of LSE of 1850
- the internal combustion engine, electricity and magnetism → new wave of prosperity → crash of 1929
- the transistor and computer → globalization → Internet bubble, Global Meltdown
- the next wave is being build around four axis:
 - artificial intelligence and big data
 - quantum computing (maybe)
 - biotechnology and
 - nano-technology





SECTION 4

THE REAL ROLE OF FINTECH



4. THE REAL ROLE OF FINTECH

4.1 SOCIETY TYPES AND THEIR IMPORTANCE

THE KARDASHEV SCALE WHERE ARE WE ON OUR LONG JOURNEY?

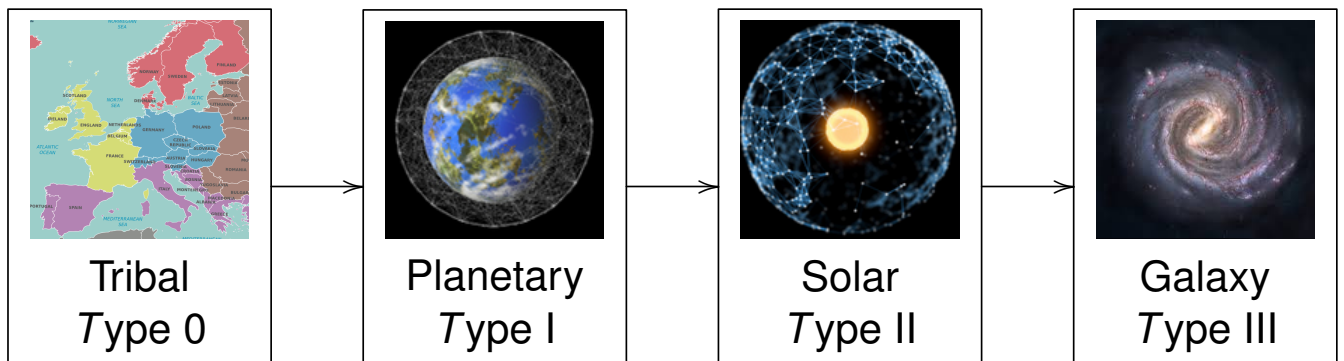


FIGURE 4 : A theory about development of intelligent societies — see eg. Kaku (2008).

4. THE REAL ROLE OF FINTECH

4.2 CAN FINTECH HELP TO MOVE TO THE NEXT STAGE?



CAN FINTECH ACT AS AN ENABLER TOWARDS A TYPE I SOCIETY?

- Misconception about ownership of deposits in banks
- Peer-to-peer lending and crowdfunding reflect the values of the society
- Blockchains, crowdlending and crowdfunding are a few of many signs of a Type I society



RISKS THAT CAN STOP THE RISE OF THE MACHINES AND FINTECH

- solar storm or geomagnetic storm
 - 1859 (the Carrington Event): after 17.6 hours the CME reached earth on Sept 1–2 1859: aura so bright that one could read a newspaper at night, telegraphs failed nationwide, sparks on the lines, etc.
 - near miss July 23, 2012; Bastille Day Event on July 14, 2000 (observed by Voyager 1 and 2)
- extinction event at global scale
- fraud
- hacks and cyber-warfare
- quantum computers that are able to solve hard NP problems — unless quantum encryption saves us

SECTION 5

IS THERE A FUTURE FOR THE INCUMBENTS?

WHAT CAN INCUMBENTS DO?

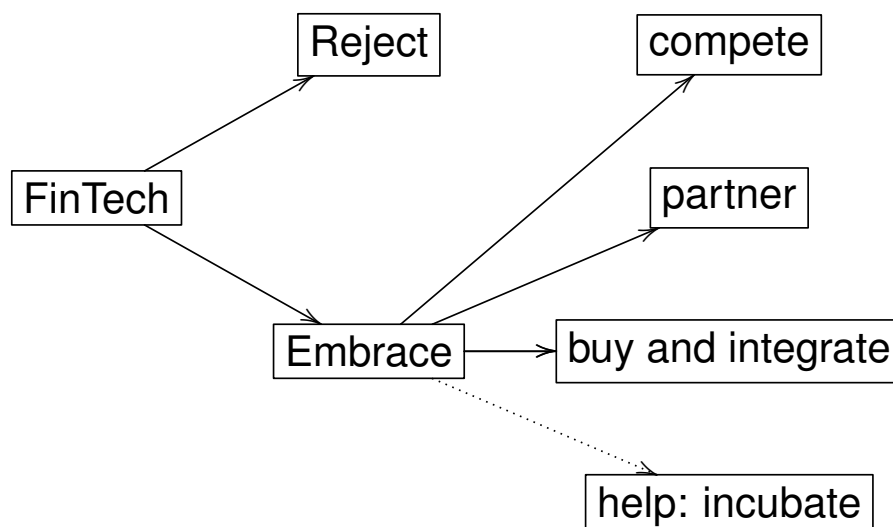


FIGURE 5 : What to do about FinTech?

5. IS THERE A FUTURE FOR THE INCUMBENTS?

5.1 BANKING

BANKING AND P2P LENDING

- credit risk: comparable rates on the good platform (also the platform can provide similar scoring system)
- guarantee: banks guarantee with their own balance sheet
- fighting fraud, AML, terrorist financing etc: banks rule

BANKING AND P2P LENDING

If there are no regulatory actions, then banks have little advantage other than convenience (other products and advice available) and a formal guarantee of the bank and eventually the nation.

Best defense: embrace P2P Lending as one offering and use size to make it really hard for new entrants — also partnering is an aid

BANKING AND CROWD-FUNDING

- fighting fraud, AML, terrorist financing etc: banks have an advantage
- for the small business that gives an edge to the crowdfunding concept and small companies get big
- banks can provide research and help in valuation and talks to potential buyers (for bigger companies), banks can help writing prospectuses, etc.

BANKING AND CROWDFUNDING

Banks have a potential head-start, but (if Asset Management is left out of the equation), banks see part of the business go.

Best defense: embrace crowdfunding, use data and become a “finance eco-system” to wipe out new entrants

BANKING AND BLOCKCHAINS

- Can disrupt money creation and replace printed money
- can replace ledger systems, transaction execution, clearing, etc.
- embrace: eg. HSBC and BofA use Blockchain technology to issue a letter of credit in trade finance (Aug 10, 2016)

BANKS AND BLOCKCHAINS

Blockchains will change the way banks work and with what they work, but it can also replace the deposit system — especially in low interest rate environments.

Though Blockchains have their weak spots too (no guarantee, hacks, loss of private key, etc.)

Best reaction: excellence in execution of transactions and service, convenience and added security by balance sheet guarantee and recovery (or custody over private keys – transforming banks in “a secure place of identity”)

CONCLUSION FOR BANKS

The ROE of banks went down from ca 7% (1970–1990) over 5% (1991–2010) to about 0% latest years — while C/I did not really change (since the 1970s is between 60% and 80%) and NPS remains low (around 10% while disrupters like lending club enjoy almost 80%)

- ROE will continue to be low (by design: see Basel III)
- banks have to embrace new technologies and stay on top
- a bigger institution typically has the legacy IT infrastructure but the size to invest in R&D
- the open (and open APIs) will be key.

5. IS THERE A FUTURE FOR THE INCUMBENTS?

5.2 INSURANCE

INSURANCE AND FINTECH

- connected insurance (IoT, Advanced Sensors, Wearables, big data): tools to reduce (insurance) risk
- insurance disaggregation (sharing economy, securitization and hedge funds, autonomous vehicles, etc.): temporal issue while interest rates are low and still lots of guaranteed life insurance contracts are outstanding.

TOM DE SWAAN, DAVOS, JANUAR 20–23 2016

“I have seen many innovative ways to sell insurance. You have to find alliances with disrupters, Though, I haven’t met one who wants the insurance liability on their balance sheet.” (paraphrased)

5. IS THERE A FUTURE FOR THE INCUMBENTS?

5.3 ASSET MANAGEMENT

INVESTMENT MANAGEMENT AND FINTECH

- process externalization (advanced algorithms, cloud computing, capability sharing, Open Source software, etc.): tools that will reduce entry barriers but at the same time reduce margins
- empowered investors (social trading, retail algorithmic trading): probably will remain niche
- advice: robo-advisers sell old wine in new bags (few exceptions)

ASSET MANAGERS

Investment Managers will have to invest to keep up with new methods in asset management and create open interfaces (good for the ones with deep pockets). Though the real challenge to bring investment advice to a post WWII era is an opportunity.

SECTION 6

CONCLUSION

CONCLUSION

- 1 Consolidation in all sectors will be necessary (just as the world can have one dominant transport company, one major bed-provider, etc.)
- 2 FinTech is bringing banking to the world of Internet
- 3 FinTech is part of a movement that cannot be stopped (unless something serious happens)
- 4 FinTech is part of a movement that will change our world
- 5 Banks have to re-invent themselves to survive in the long term, but they have a pole-position and a real role to play

SECTION 7

APPENDICES



7. APPENDICES

7.1 COPYRIGHT



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8. APPENDICES

8.1 NOMENCLATURE

NOMENCLATURE I

AI	Artificial Intelligence, page 22
AML	Anti Money Laundering, page 41
API	application programming interface, page 44
BofA	Bank of America, page 43
C/I	cost over income, page 44
HSBC	Hong-Kong Shanghai Bank Corporation, page 43
IoT	Internet of Things, page 46
IPO	Initial Public Offering, page 16
IT	information technology, page 44
LSE	London Stock Exchange, page 29
NPS	Net Promoter Score, page 44
P2P	peer to peer, page 16

NOMENCLATURE II

P2P Lending	Peer-to-peer or person-to-person lending, page 8
R&D	research and development, page 44