UNIVERSITY *of* NICOSIA

Department of Digital Innovation

MSc in Blockchain and Digital Currency

BLOC 526 – Emerging topics in fintech

Session 8 – Opportunities from open banking for fintechs

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Learning objectives and expected learning outcomes

Summary

Session 8 builds up on the contents of the previous session in order to provide an analytical framework for evaluating the opportunities from open banking for fintechs, as well as the threats to incumbent banking institutions. The opportunities and caveats of open banking are discussed and critically analysed, within the context of consumer and data protection regulations.

Learning objectives

- Open banking business models
- Open innovation and the opportunities opened up by the EU's PSD 2
- Prominent open banking fintech applications
- Data management and privacy implications of open banking

Expected learning outcomes

- Understand the building blocks and business models of open banking, as well as their implications for fintech firms
- Visualise the fintech opportunities enabled by open banking
- Develop a critical appreciation of the potential caveats of open banking for fintechs, incumbents and consumers

Agenda

- Introduction and recap
- A deeper dive into open banking
- Most prominent open banking fintech applications
- Open banking caveats for fintechs
- Concluding remarks

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- **Introduction and recap**
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Summary of takeaways from previous session

1. The payments ecosystem is a core focus of fintech firms	▪ Lighter regulation, heavy reliance on technology and market growth make payments an attractive segment for fintechs
2. PSD2 constitutes a tectonic shift in the payments landscape	▪ EU-wide registered institutions can have access to customer information and initiate services on their behalf ▪ Banks are losing their monopoly on their customers' data
3. Open Banking can transform our interaction with our money	▪ Using the foundations laid by PSD2, Open Banking offers options that are not tied to one's financial institution ▪ However, this does not come without potential pitfalls

Open Banking opens up a world of opportunities for fintechs, which previously did not have access to customers' banking data

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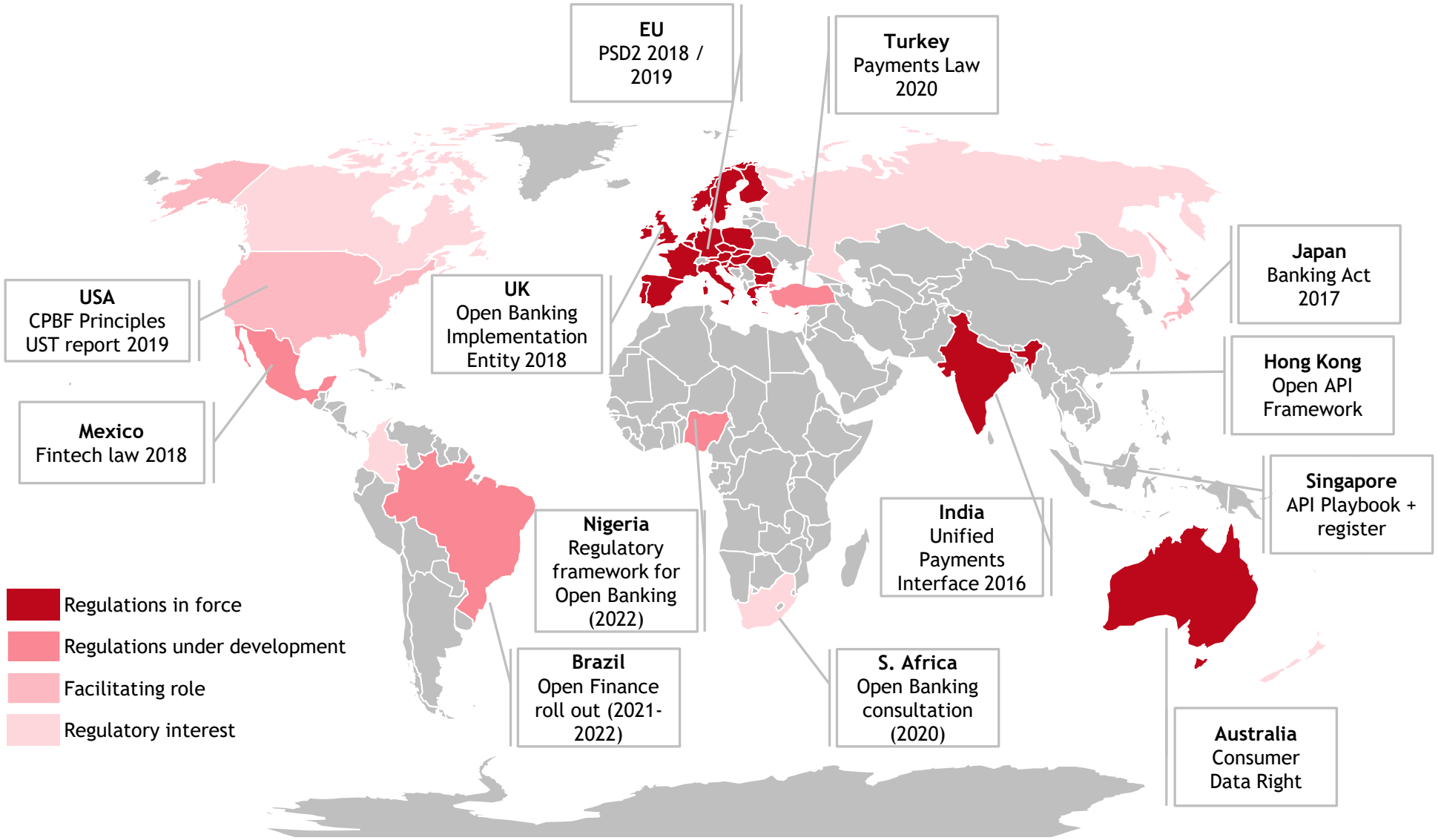
Open banking is becoming a legislative reality across various countries

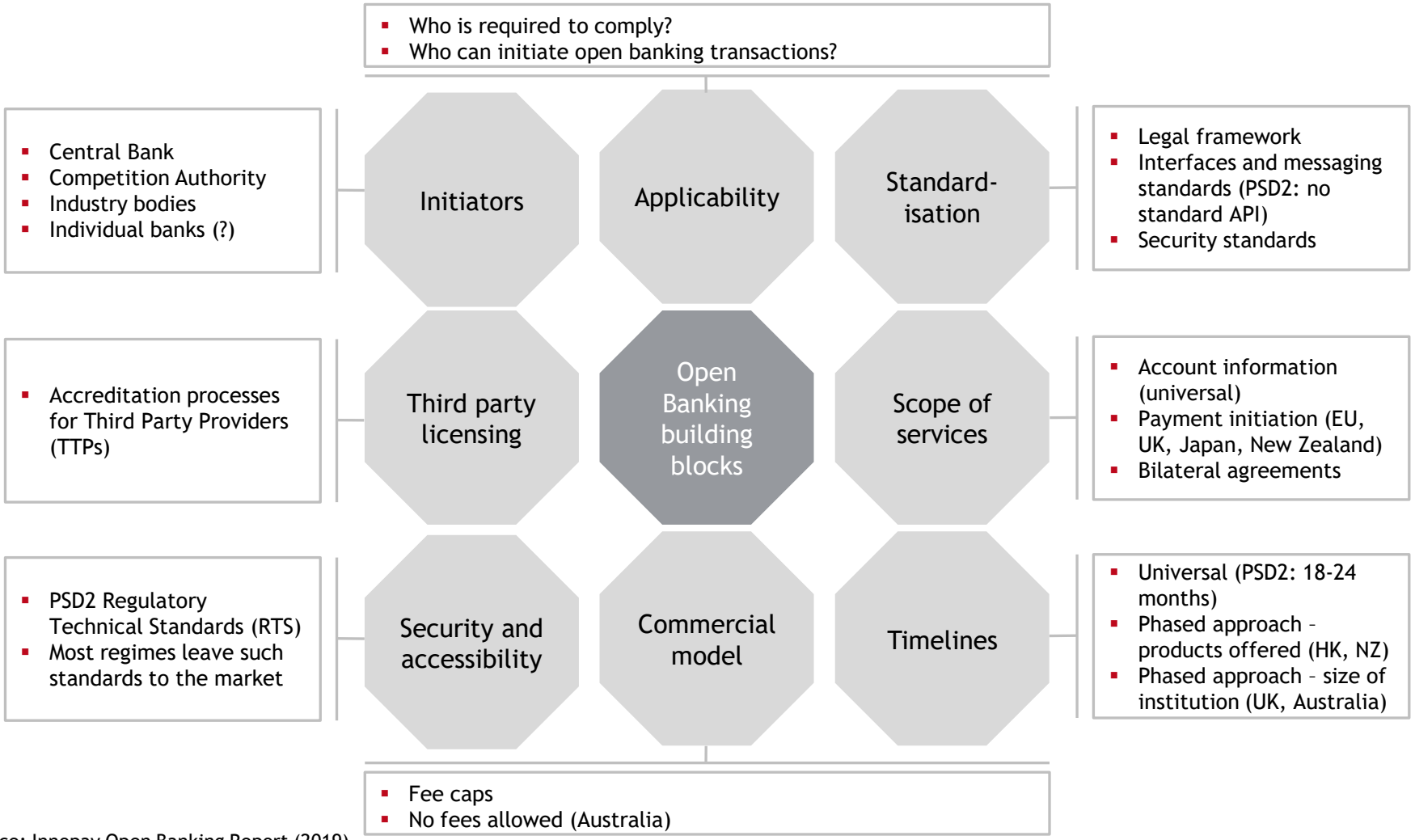


Yet regulatory approaches vary in terms of standardisation and enforcement

	Market initiates	Regulator enforces
High standardisation	**Market as scheme leader** New Zealand Hong Kong 	**Regulator as leader** Mexico Australia United Kingdom India
Low standardisation	United States Singapore Japan **Market as formulator**	EU **Regulator as strategic formulator**

Source: Innopay Open Banking Report (2019)

Open banking building blocks



Source: Innopay Open Banking Report (2019)

Open Banking would not be possible (or better, desirable) without the GDPR or similar regulations

- The EU's General Data Protection Regulation (GDPR), which took effect on 25 May 2018, imposes new obligations upon personal data controllers and processors and grants stronger rights to individuals
- The GDPR imposes a number of measures required by the data controller and processor

Data protection by design / default (art 25)

Documentation (art 30)

Security of processing (art 32)

Data protection impact assessment (art 35)

Prior consultation (art 36)

Designation of Data Protection Officer (art 37)

Open banking business models

Consume API

Data digger

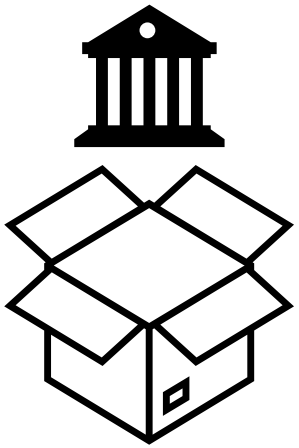
Aggregate data via APIs, from banks and other third party sources

Capability builder

Connect via API to banks or third parties to offer products in various modes (white label, co-branded, etc.)

Marketplace

Offer partner or third party services and products, matching supply and demand



Open Bank

Expose API

Data provider

Expose bank and customer data to third parties, for development of services and products

Capability provider

Expose white label services in others' value chain (e.g. payments, fraud management, risk management, AML)

Product provider

Integrate financial products in others' open platform ecosystems in various modes (white label, co-branded, etc.)

Source: Innopay Open Banking Report (2019)

Open banking business models - examples

Consume API

Data digger

YOLT

Aggregate data from multiple accounts and credit cards. Offers insights and personalised advice

Capability builder

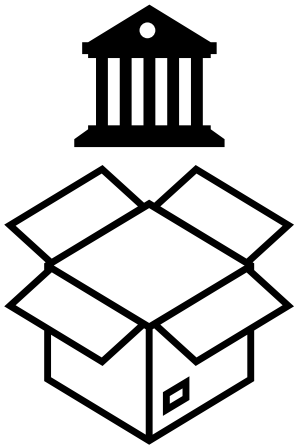
Kabbage

Kabbage offers ING SME lending capabilities to expand product offering

Marketplace

STARLING BANK

Offers customers a range of fintech apps, helping to improve customer experience and services



Open Bank

Expose API

Data provider

Deutsche Bank

Offers APIs that allow third parties to use KYC-ed customer data

Capability provider

fidor BANK

Provide banking as a service that allows partners to build a whole bank on top of Fidor's platform

Product provider

ERSTE Bank

Expose their products to third parties into other platforms, increasing product reach

Source: Innopay Open Banking Report (2019)

Several fintechs have popped up to satisfy opportunities created by open banking

Platform enablers

eurobits, ACI Universal Payments, FORM3, LUXHUB, ndgit, PRIVITI, STRANDS, tink, DIRECTID, token, Trustly, unnax, Worldline, YAPILY, FEATURE SPACE, WSO2, YOLT

API connectors

EVRY, ACI Universal Payments, Banfico, ndgit, PRIVITI, tink, token, STRANDS, Trustly, Worldline, WSO2, YAPILY, YOLT, volt

Consent & GDPR

BANKIFI, EVRY, ndgit, PRIVITI, Worldline, WSO2

PFM

FONDY, STRANDS, tink, YOLT

Account aggregation

EVRY, BANKIFI, YAPILY, STRANDS, tink, volt, Worldline, YOLT

KYC / Identity

Banfico, callsign, EVRY, HID, LexisNexis Risk Solutions, ndgit, Trustly, Worldline, WSO2

Fraud / Security

callsign, EVRY, feedzai, LUXHUB, WSO2, HID, Trustly, SEON, ndgit, LexisNexis Risk Solutions, OneSpan, Worldline, FEATURE SPACE

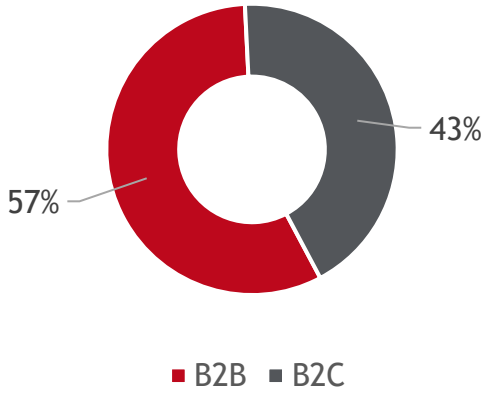
Bank in a box

five°degrees, BANKIFI, EVRY, IPX Payments, FEATURE SPACE, Worldline, ZAFIN, Digital Banking System

Payments

EVRY, FONDY, token, volt, BANKIFI, tink, YOLT, YAPILY, Trustly, Worldline

Third Party Provider (TPP) models are also thriving



B2B focus	
28%	White label AIS and/or PIS
25%	Cash management solutions provider
12%	B2B payments provider
11%	Credit rating provider
6%	Tax assistance provider
18%	Other

B2C focus	
40%	Personal Finance Management (PFM)
18%	Payment initiation provider
11%	Credit rating provider
8%	Investment services provider
6%	Loyalty programme provider
17%	Other

Source: Innopay Open Banking Report (2019)

Banks are creating portals for developers to tap into their APIs

*Grey logo indicates limited portal accessibility, thereby complicating full assessment.

**Banks with an Open Banking offering limited to regulatory requirements (e.g. PSD2 required services) are not included in this assessment.

INNOPAY *Open Banking Monitor (OBM) – Developer Portal benchmark (update Q4 2021)*

INNOPAY

Takeaways

1. Progress towards open banking is building up	▪ Whether regulatory or market driven, open banking will soon become a reality in many countries ▪ The opportunities for fintech firms abound

"The whole point behind the introduction of Open Banking is to benefit the consumer."

James Varga, CEO The ID Co.

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Account to Account (A2A) transfers

A2A transfers can offer a convenient and inexpensive alternative to cash or credit card payments

Consume API

Instead of incurring bank or credit card fees (for sellers), fintechs can offer direct A2A transfers

swish®

MobilePay

Zelle

Credit history improvement

Building a credit score is becoming increasingly essential in several countries, yet to build a credit score one needs to get credit first (catch 22)

Consume API

Fintechs use rental payments (or other standing transactions) in order to improve their credit scores

CreditLadder

canopy

Experian Boost

Identity verification

Identity as a Service (IDaaS) has the potential to accelerate account opening, improve conversions and prevent fraud

Consume API

Fintechs can offer onboarding services that allow for instant identity verification and account opening

Expose API

Banks can offer identity verification based on vetted customer data

IDfy

SIGNZY

JUMIO®

Smart budgeting

Customers can define spending budgets (overall and per category), in order to manage their spending

Expose API

Using historical and current customer transactions, fintechs can offer insights into spending and personalise targets

plum

chip

Revolut

Automated accounting

Keeping track of accounting entries can be painful when done manually

Expose API

Fintechs classify expenditure and pre-populate tax returns automatically

Question: Which are some of your most favourite open banking apps, or desired open banking applications?

Takeaways

2. Open banking applications can add value to people's own data	▪ Several fintechs already use open banking data to offer value adding services to customers ▪ Progress is more advanced in countries where the regulatory frameworks are in place

"Data is the new oil"

Clive Humby

(Mathematician behind Tesco's ClubCard)

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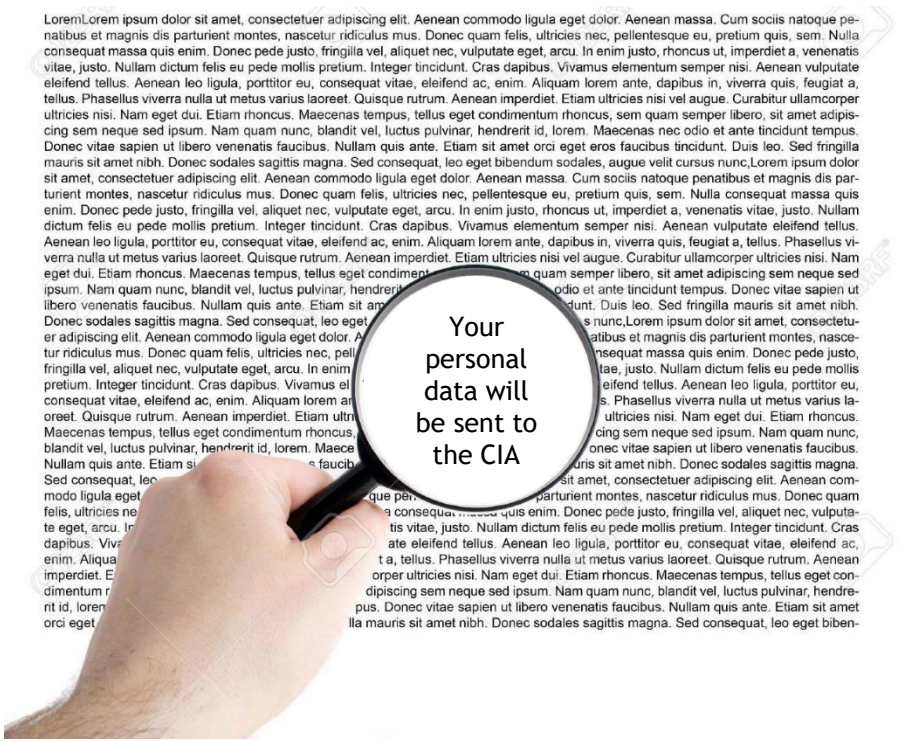
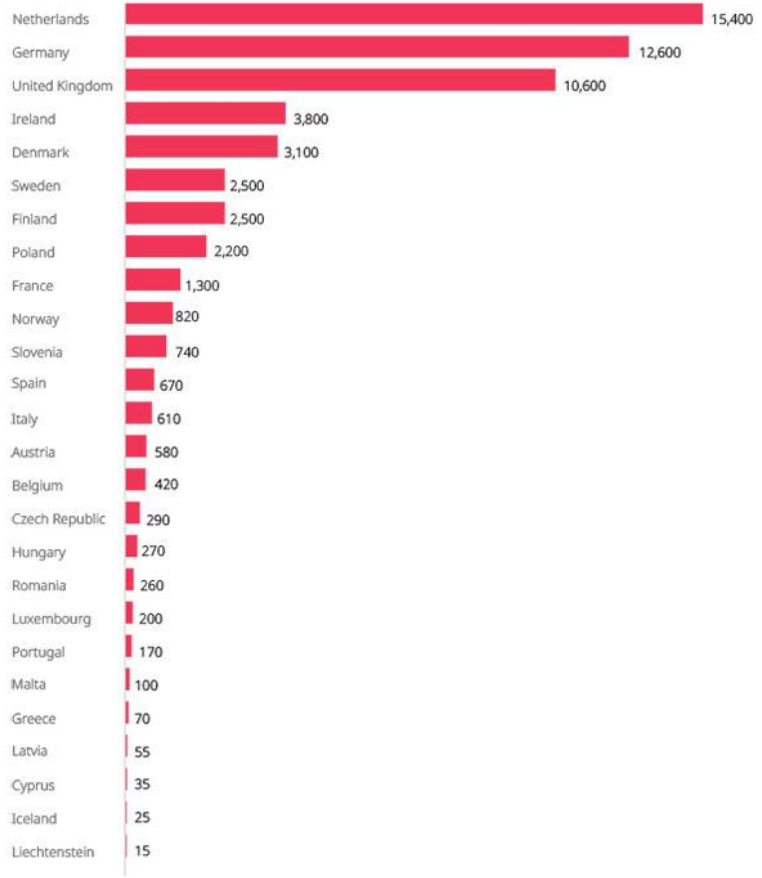
Question: What could be some of the downsides / risks of Open Banking?

Do we know what we consent to?



How the US Military buys location data from ordinary apps
https://www.vice.com/en/article/jgqm5x/us-military-location-data-xmode-locate-x

Data breaches



No open banking related hacks have been reported (yet)

But fintechs do not have to be exposed to hacking in order to face reputational risks…

Are we sure that the consent we gave was only for the services clearly marketed?

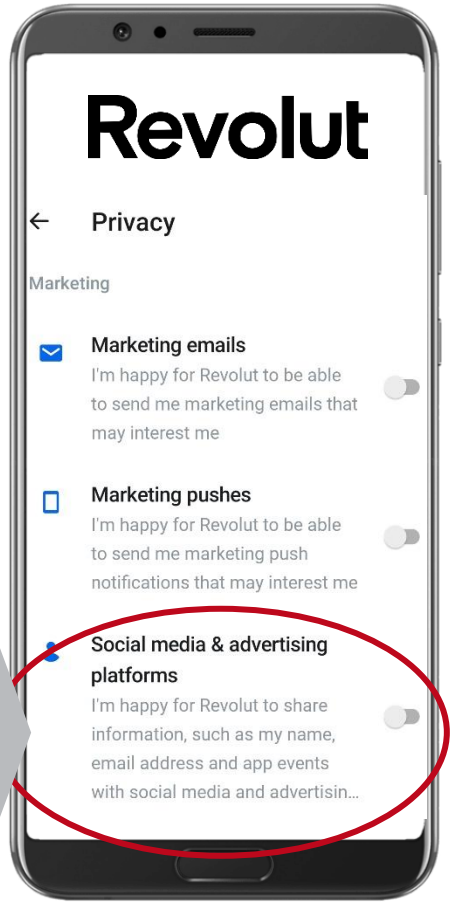
Is the data transferred to other jurisdictions where data privacy laws are more relaxed?

Can we 'get our data back' when we terminate the agreement?

"Oversight of third parties can be limited, especially in cases where banks have no contractual relationship with the third party, or where the third party itself has no regulatory authorisation"

(BIS 2019)

Some default on settings are rather dubious…



Several cases have identified the privacy-related caveats of data analytics, and the methods that can be employed to remove anonymity

Investigative research (sleuthing)	Cross-referencing public sources	Brute force computing
▪ In 2006, America Online (AOL), made 20 million search queries publicly available for research ▪ People were anonymised by a random number ▪ In a New York Times article, journalists Michael Barbaro and Tom Zeller describe how customer number 4417749 was identified and subsequently interviewed for their article	▪ Netflix sponsored a crowdsourced competition challenging data scientists to improve by 10 percent its internal algorithm to predict customer movie rating scores ▪ One of the teams de-anonymized the movie watching habits of encrypted users for the competition. By cross referencing the public Internet Movie Database (IMDB), which provides a social media platform for users to rate movies and write their own reviews, users were identified by the patterns of identically rated sets of movies in the respective public IMDB and encrypted Netflix datasets. ▪ Netflix settled lawsuits fled by identified users and faced consumer privacy inquiries brought by the United States government	▪ In 2014 Vijay Pandurangan, a software engineer, de-anonymised 173 million taxi records released by the city of New York for an Open Data initiative ▪ The data was encrypted using a technique that makes it mathematically impossible to reverse-engineer the encrypted value ▪ The dataset had no identifying search information, but the encrypted taxi registration numbers had a publicly known structure: number, letter, number ▪ Pandurangan calculated that there were 'only 23 million combinations, so he simply fed every possible input into the encryption algorithm until it yielded matching outputs. Given today's computing power, he was able to deanonymise millions of taxi drivers in only two hours

Source: IFC (2017)

Takeaways

3. The easiest mistake for a fintech is to mishandle customer data

- Reputational risk is a massive consideration in open banking success and fintechs do take it seriously
- However, if something is online, it can be hacked…

If you don’t pay for the product, you are the product

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Summary of takeaways

1. Progress towards open banking is building up	▪ Whether regulatory or market driven, open banking will soon become a reality in many countries ▪ The opportunities for fintech firms abound
2. Open banking applications can add value to people's own data	▪ Several fintechs already use open banking data to offer value adding services to customers ▪ Progress is more advanced in countries where the regulatory frameworks are in place
3. The easiest mistake for a fintech is to mishandle customer data	▪ Reputational risk is a massive consideration in open banking success and fintechs do take it seriously ▪ However, if something is online, it can be hacked…

Open Banking is here to stay; the opportunities and caveats are plenty!

Any questions?

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Questions?

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