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Technological Innovations: Challenges for Insurance Supervisors

2016 IAIS Annual Conference

Panel on Technological Innovation: Insurance Supervision and the Business of Insurance

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Innovations in value chain

- Meeting changing customer needs with new offerings.

Online Distribution - Direct to Consumer

PCW/online agencies/brokerages

policybazaar, CoverHound, Goji, next insurance, policygenius

Health Insurance

Stride, Clover, bright HEALTH, SimplyInsured, OSCAR

- Using and analyzing collected data by connected devices (IoT).
- Developing new approaches to underwrite risk and predict loss.

DLT

everledger, safe share, Yen The Z/Yen Group

Policy and Claims Management Tools/Software

enservio, Powered by snapsheet, Spex

Product development	Distribution and Sales	Price and Underwriting	Claims Management

Peer-to-Peer

Lemonade, GUEVARA, friendsurance

On demand/Usage based

metromile, marmalade, CUVVA, Slice

- Enhancing and improving customer interactions: mobile & online distribution, aggregators, comparison sites.

Data & Analytics

Praedicat, QuanTemplate, Analyze Re, ScoreData, Social Intelligence™

IoT/Telematics

AUTOMATIC, Driveway, TrueMotion

Health: fitbit

Home: nest

- Improving claims management processes: drones, DLT.

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Positive implications

- Reduction of transaction and operational costs
- Efficiencies in claims processing
- Automated data analysis and optimized pricing
- Reduction of counterparty risk and frauds (DLT)
- Greater financial inclusion

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Potential risks: examples

Cyber

- Hacking vulnerabilities of connected devices (IoT) could increase cyber security incidents.

Market Conduct

- Differential pricing based on big data may facilitate discrimination practices.
- Digitalization in distribution of inclusive insurance may increase the risk of misinformation, fraud or abuses.

Macro Prudential

- New concentration risks may arise if a new market entrant dominates a large share of the market.
- A sudden failure or disorderly resolution of unregulated entities that provide services that emulate insurance could undermine consumer confidence in insurance itself.

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Potential risks: examples

Operational

- Outsourcing parts of the value chain to new entrants should be properly managed to avoid risks of loss due to failure of third parties.

Regulatory/Legal

- Regulatory arbitrage can happen if different regulations are issued for the same technology.
- Legal uncertainties may arise in self driving vehicles, when liability shifts from drivers to auto manufacturers or suppliers of self driving kits.
- Legal and ethic considerations concerning algorithms, artificial intelligence and machine learning are important issues to be considered (robo advisors).

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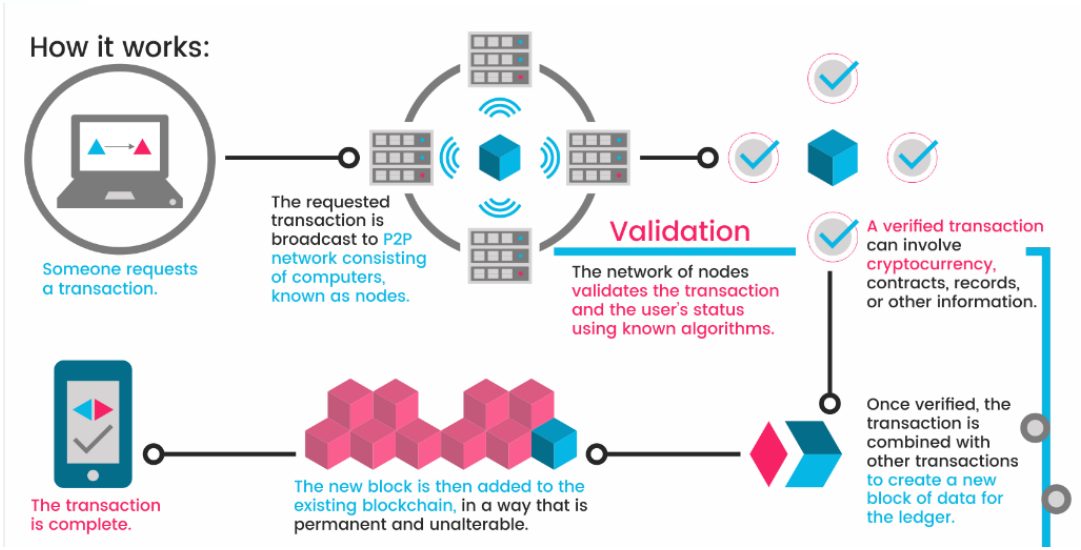
Evaluation of technological innovations

① Identification and description of technological innovations

- New products, services
- Innovative companies

Examples:

What is it? The blockchain is a decentralized ledger of all transactions across a peer-to-peer network. Using this technology, participants can confirm transactions without the need for a central certifying authority. Potential applications include fund transfers, settling trades, voting, and many other uses.



Source: Making sense of bitcoin, cryptocurrency, and blockchain, PwC.

TOP 20 INSURTECH DEALS IN FIRST HALF OF 2016 TOTALED OVER $980M IN FUNDING

AT A GLANCE (YTD)

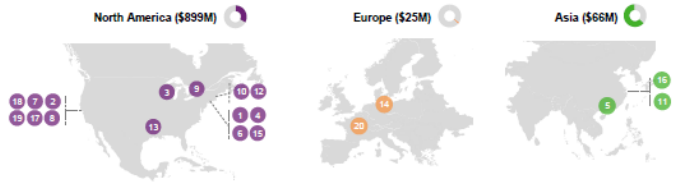
~$1B VC funding

82 VC Deals

47% Deals at seed-stage

63% Deals to US-based startups

TOP 20 DEALS OF 2016 (YTD)



1	Oscar Health	$400M	Series C	11	Xishan Information Technology	$20M	Series B
2	Clover Health	$160M	Series C	12	Goji	$19M	Series D
3	Bright Health	$80M	Series A	13	Insurance Zebra	$17M	Series A
4	Justworks	$33M	Series C	14	Friendsurance	$15M	Series B
5	Huize Insurance	$31M	Series B	15	PolicyGenius	$15M	Series B
6	Namely	$30M	Series C	16	Joyowo.com	$15M	Series B
7	Trov	$26M	Series C	17	Zendrive	$14M	Series A
8	Gusto	$25M	Series B	18	Next Insurance	$13M	Seed VC
9	LEAGUE	$25M	Series A	19	Embroker	$12M	Series A
10	Maxwell Health	$22M	Series C	20	Shift Technology	$10M	Series A

Source: KPMG International & CB Insights, Analyzing the Insurance Tech Investment Landscape , 2Q2016

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Evaluation of technological innovations

② Determination of innovation drivers: supply and demand

- Cost reductions
- Efficiency improvements
- Customer changing needs
- New markets opening up
- Unmet demand

Example:

Insurance: Increasing Levels of Connectivity

WORLD ECONOMIC FORUM
COMMITTED TO IMPROVING THE STATE OF THE WORLD

Connected devices and platforms emerging across cars, homes and lifestyles present an opportunity to improve and expand the telematics insurance models

Drivers behind the emergence of connected devices

Smarter, cheaper sensors | Internet-of-things | Communication protocols | Advanced analytics

Innovations creating potential opportunities for the connected insurance model

1. Connected Cars	2. Connected Homes	3. Connected Lifestyles

Source: WEF, The Future of Financial Services, June 2015

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Evaluation of technological innovations

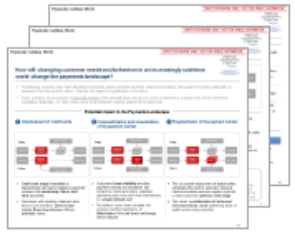
③ Examination of the implications: scenario based approach

- Micro: insurance market
- Macro: financial stability, financial inclusion and consumer protection

Examples:

	1 Adoption by established financial institutions	2 Market fragmentation as a result of FinTech	3 Absorption by BigTech
Scenarios			
Summary	The established financial institutions adopt technological innovation and introduce these to the market in a high pace. These institutions can be domestically (1a) or foreign (1b) based.	Technological innovations are adopted primarily by FinTech companies, who use them to effectively compete with established financial institutions across the value chain. This leads to a fragmentation of the market for financial services.	Technology giants such as Google or Apple ('BigTech') adopt innovations effectively and integrate these across the value chain. In doing so, these firms crowd out established financial institutions.

Source: Technological Innovation and the Dutch Financial Sector, DeNederlandscheBank



D Scenarios

- Summary of potential outcomes related to the key question for the topic in a scenario format
- Narratives and case studies to further illustrate each scenario
- Necessary conditions required for each scenario to be realised
- Implications of the scenario on customers, incumbents and overall industry
- Key opportunities and risks associated with the scenario

Source: WEF, The Future of Financial Services, June 2015

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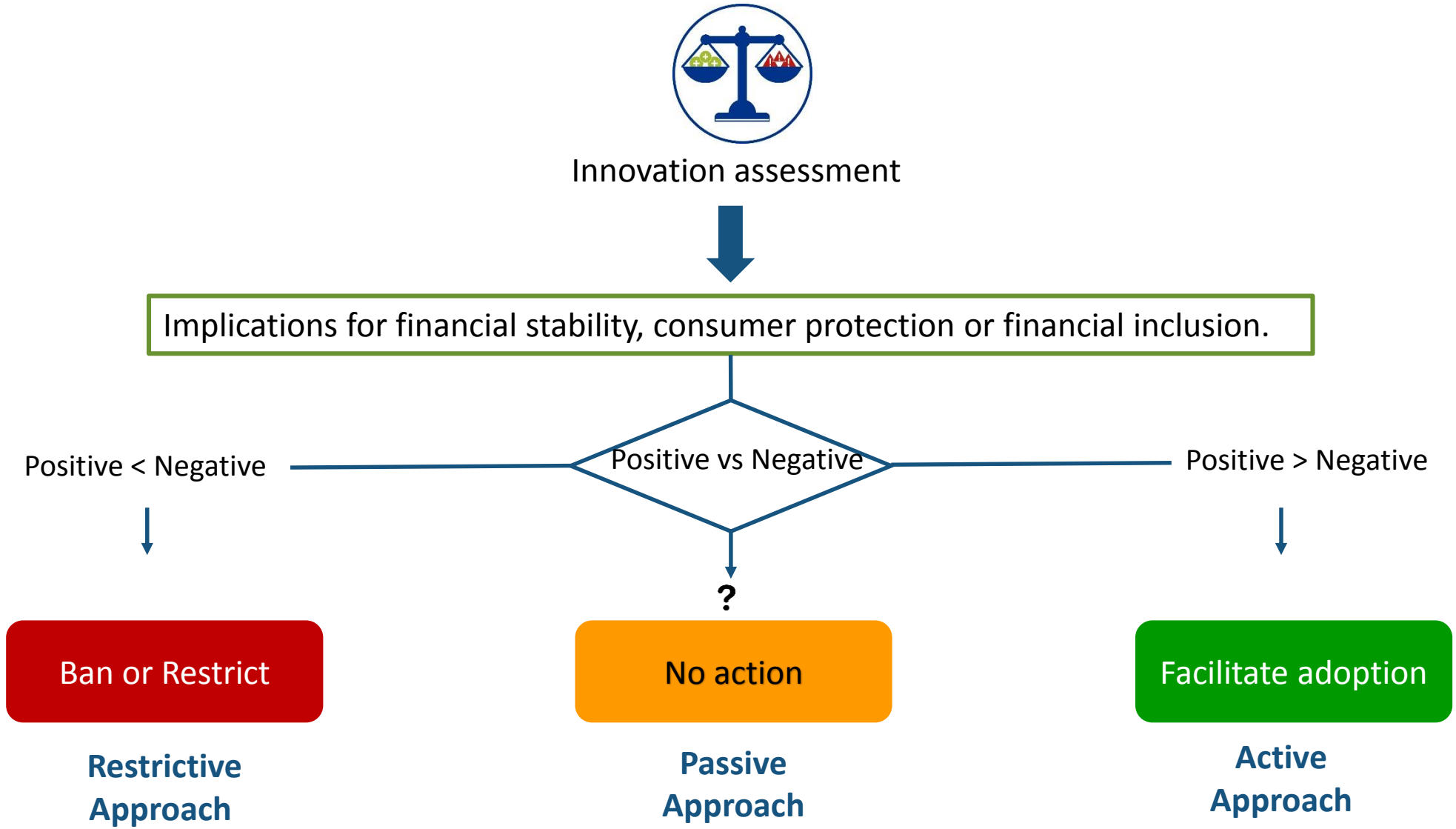
Regulatory approaches



Facilitating innovation

Initiative	Key ideas	Examples
Innovations Hubs	 Guidance and feedback on regulatory implications of innovations.	FCA, ASIC, Reserve Bank of India, OSC Ontario Securities Commission
Regulatory Sandbox/Lab	 Testing innovations in a safe environment with clear boundaries and safeguards.	finma, Hong Kong Monetary Authority 香港金融管理局, MAS Monetary Authority of Singapore, Bank Negara Malaysia Central Bank of Malaysia, Abu Dhabi Global Market سوق أبوظبي العالمي
Accelerators	 Partnership between authorities and FinTech companies for projects of direct relevance to the authorities' mission and operations.	Bank of England

Objectives

- Lower cost of testing new ideas.
- Reduce risk, evaluate impact and contain consequences of failure.
- Review regulatory barriers or uncertainties.

Components

- Eligibility criteria.
- Safeguards.
- Regulatory flexibilities (temporary registration, exemptive relief, tailored license).

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Challenges for regulators and supervisors

1. Understanding and evaluating technological innovations

- Technological development is ongoing, and many innovations are still in a nascent phase. Supervisors need to understand how innovations work and are applied in order to ensure its adequate assessment.
- In some cases, understanding the true potential of an innovation requires not only research but also using the technology for real applications.

2. Establishment of principles and guidelines

- Supervisors will need to:
  - establish guidelines for appropriate and responsible use of new technologies.
  - define under which principles innovations will be approved for the market.
- Identification of principles developed by other national and international regulators as well as issue papers and policy recommendations made by international organizations and standard setting bodies are relevant for this task.

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Challenges for regulators and supervisors

3. Timely adjustments to prudential regulation framework

- In order to include in the regulatory perimeter and supervisory scope the models of innovative insurance products, as well as new market entrants, supervisors will need to make timely adjustments to their prudential regulation framework, including:
  - assessment and quantification of new risks,
  - determination of capital requirements for new entrants, and
  - changes in corporate governance framework regarding third-party collaboration with InsurTech companies, among others.

4. Collaboration with other stakeholders and coordination with other authorities

- Supervisors will need to define their level of collaboration with stakeholders, such as supervised institutions, other market participants, InsurTech companies, academics, as well as coordination with other financial regulators and supervisors and other authorities that govern the use of technology and communications (participation in joint working groups, collaboration agreements, information sharing policies).

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Challenges for regulators and supervisors

5. Financial education and data protection

- Supervisors will need to review their financial education policies, in order to improve consumers understanding of the use of new technologies, as well as to participate in adjusting the legal framework of data privacy, ownership, protection, usage and sharing. Additionally, a new framework could be needed to construct information asset management systems from the customer's point of view.

6. Adjustments to supervisors resources

- Supervisors will need to examine if supervisory' tools and IT infrastructures need to be improved by innovations (RegTech).
- Additionally, supervisors may need to hire, retain or develop top talent with new technical skills to understand in depth innovations and identify associated risks .

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Challenges for regulators and supervisors

The question is not whether innovation in itself is good or bad.

The key challenge for regulators and supervisors is to strike a balance between facilitating innovation an unlocking its potential benefits to the insurance market, and maintaining the conditions for a fair, safe and stable insurance sector for the benefit and protection of policyholders.

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