

# Report of the 24<sup>th</sup> A2ii – IAIS Consultation Call

## Supervising InsurTech

21 september 2017



*The A2ii Consultation Calls are organised in partnership with the IAIS to provide supervisors with a platform to exchange experiences and lessons learnt in expanding access to insurance. Four calls were held: two in English, one in French and one in Spanish.*

Emerging technological innovations in the insurance value chain are confronting supervisors with new questions. Consumers’ needs have evolved, distribution channels have digitalised, the Internet of Things is affecting how risk is underwritten and predicted, and Peer-to-Peer technology is set to affect claims management.



The 24th Consultation Call, held on 21 September 2017, explored emerging technologies and how they affect the market and consumers. We also took a look at some regulatory approaches to stimulate or regulate these developments. We saw what has already been done to help supervisors understand technological innovations and what the status quo is in terms of principles and guidelines for supervision. The material from this call should help regulators and supervisors to strike a balance between facilitating innovation and unlocking its potential benefits to the insurance market, increasing the inclusiveness of the insurance sector, and maintaining the conditions for a fair, safe and stable insurance sector for the benefit and protection of policyholders.

Mobile phone Insurance (M-insurance) is part of the new emerging technologies, but was not the focus of the 24th Consultation Call. The 19th Consultation Call explored the topic of “data protection challenges in mobile insurance” ([link](#)). The A2ii has also published a study on “Regulating Mobile Insurance: status and regulatory challenges” ([link](#)) and in February 2017 hosted a conference on how to overcome barriers and enhance access to insurance for low-income populations using mobile technologies in partnership with CIMA. The conference report can be found [here](#).

On the 24th Consultation Call, Stefan Claus of the Bank of England (UK), Didier Warzée of the Autorité de contrôle prudentiel et de résolution (France), and Denise Garcia of the Comisión Nacional de Seguros y Fianzas (Mexico), presented the findings of the recent [report](#) by the International Association of Insurance Supervisors (IAIS) which analysed current FinTech developments in the insurance industry. This overview was complemented by jurisdictional examples, specifically Mr Paul Worthington and Mr Tony Gellert of the UK’s Financial Conduct Authority (FCA), and Mr Heiko Heuer of BaFin.

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Following IAIS terminology, this paper uses the term Financial Technologies or “**Fintech**” to describe technologically enabled financial innovation that could result in new business models, applications, processes, or products with an associated material effect on financial markets and institutions and the provision of financial services. It covers a broad array of technical innovations that are finding their way into the financial industry. In particular, this paper will refer to the variety of emerging technologies and innovative business models that have the potential to transform the insurance business as “**InsurTech**”.

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## Technological innovations: impact on inclusive insurance

Digital technology stands to enhance insurance distribution, increase access to insurance, reduce costs and create sufficient scale for a viable business. This positive effect on consumer interaction means that these developments are of particular interest for the inclusive insurance market, as they address some long-standing structural obstacles that have historically caused exclusion from insurance.

As outlined in the IAIS Issues Paper on Conduct of Business in Inclusive Insurance [\(link\)](#), the features of inclusive insurance markets differ from more conventional insurance markets, in particular in respect of:

- the inclusive insurance customer's profile;
- the country specific context and conditions;
- the distribution models typical for inclusive insurance; and
- other elements of the insurance life cycle

The use of technology has an impact on product design and the efficiency of inclusive insurance delivery, as well as the roles and parties involved in the value chain. All these aspects hold great promise for extending access to insurance for those previously underserved by more traditional business models. It also poses specific challenges to supervisors that need to find a proportionate balance between policyholder protection and market objectives in an environment using technical solutions and involves multiple parties in- and outside the insurance sector. Extending the reach of insurance coverage more widely and the complexity of some of the business models used also presents a number of risks, which may disproportionately affect those who are more vulnerable, or those who are subject higher risks.

This Consultation Call took a broad approach to exploring the impact of new technologies, as a way of developing a context for a more in-depth focus on its impact on inclusive insurance.

## IAIS paper on FinTech Developments in the Insurance Industry

In February 2017, the IAIS published a report "FinTech Developments in the Insurance Industry" [\(link\)](#). The report contains a stocktake of developments, and seeks to identify implications for individual insurers, the industry as a whole, and for supervisors. It includes both life and non-life insurance, and was produced based on an industry workshop and literature review.

### Stocktake of developments

The IAIS report contains a description of the major InsurTech innovations observed in the insurance industry in general, which are summarised below.

#### > 1 Digital platforms (internet, smartphones)

Various initiatives have emerged to improve the customer experience or service such as pay-per-use products or Peer-to-peer (P2P) Insurance. Mobile phone Insurance (M-insurance) is part of this innovation.



› **2 Internet of Things (IoT)<sup>1</sup>**

IoT involves the inter-networking of physical devices, vehicles, buildings and other items (also referred to as "connected devices" and "smart devices"), embedded with electronics, software, sensors, actuators, and network connectivity that enable these objects to collect and exchange data.

› **3 Telematics / Telemetry**

In the context of IoT, telematics involves telecommunications, sensors and computer science to allow sending, receiving, storing and processing data via telecommunication devices, affecting or not control on remote objects. Telemetry involves the transmission of measurements from the location of origin to the location of computing and consumption, especially without affecting control on the remote objects. In the context of insurance its main applications are Connected Cars, Advanced Driver Assistance Systems (ADAS), Health monitoring and Home monitoring.

› **4 Big Data<sup>2</sup> and Data Analytics<sup>3</sup>**

In the insurance market, Big Data and Data Analytics could be used in various processes, such as product offerings, risk selection, pricing, cross selling, claims prediction and fraud detection, for example to offer customized products and allow automated underwriting.

› **5 Comparators and Robo advisors**

Online services that provide automated, algorithm-based product comparison and advice without human intervention.

› **6 Machine Learning (ML) and Artificial Intelligence (AI)**

The use of ML and AI enables several insurance industry processes to use data in real time and, especially, use events prediction (e.g. vehicles thefts, health problems and weather events). There is a vast scope for AI, not only in a better pricing of risks, but also in fraud prevention, claims handling and settling, or in preventive counselling.

› **7 Distributed Ledger Technology (DLT)**

A distributed ledger is essentially an asset database that can be shared across a network of multiple sites, geographies or institutions. The security and accuracy of the assets stored in the ledger are maintained cryptographically through the use of 'keys' and signatures to control who can do what within the shared ledger.

a. Blockchain

This is a type of decentralised distributed ledger, comprised of unchangeable, digitally recorded data in packages called "blocks" which are stored in a linear chain.

b. Smart Contracts

The novelty of DLT is that it is more than just a database — it can also set rules about a transaction (business logic) that are tied to the transaction itself. Smart contract is a term used to describe computer program code that is capable of facilitating, executing, and enforcing the negotiation or performance of an agreement using DLT.

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<sup>1</sup> The term IoT has been defined as a global infrastructure for the information society, enabling advanced services by interconnecting (physical and virtual) things based on existing and evolving interoperable information and

<sup>2</sup> Big Data is the term used for the storage of data from different sources, in large volume and speed.

<sup>3</sup> Data Analytics is the process of inspecting, cleaning, transforming, and modelling data with the goal of discovering useful information, suggesting conclusions, and supporting decision-making

### > 8 Peer-to-peer, Usage Based, On Demand Insurance;

Emerging technologies are likely to result in the introduction of new business models, such as:

- a. Peer to peer insurance: a business model that allows insureds to pool their capital, self-organise and self-administer their own insurance. Although it is not an innovative concept, emerging technologies (like DLT) offer substantial benefits for implementing this model in a broader scale. P2P is of interest in the inclusive insurance market as it mirrors the community-based/group-based structures that are often an attractive means of risk pooling in lower-income communities.
- b. Usage based insurance: a new business model introduced by auto insurers that more closely aligns driving behaviours with premium rates for auto insurance as the customer only pays for the actual distance driven.
- c. On demand insurance: a new business model that specialises in covering only those risks faced at a certain moment, enabled by digital tracking such as location services. In the inclusive insurance market, this could for example entail personal accident insurance that only applies while travelling on public transport.

## Analysis

The report structures its analysis through the exploration of a number of possible future scenarios that may materialise: what if the incumbents successfully maintain the consumer relationship? What if the insurance value chain completely fragments, and incumbents lose the ability to control the value chain in a meaningful way beyond simply providing capital? What if big technology firms squeeze out traditional insurers? The paper also takes a closer look at distributed ledger technology, big data, and artificial intelligence.

This scenario-based approach was helpful to enable debate on the extent to which incumbents may need to redesign their business, and what changes the market may go through from a supervisory perspective. Ultimately, there exists the risk that tech companies could fragment the value chain to the point where insurers could be reduced to their role as capital providers.

InsurTech developments stand to overturn at least the following five aspects of the insurance industry:

### 1. Enhanced customer engagement

InsurTech offers insurers and consumers a channel for a much deeper and fluid customer relationship. It allows engagement between several actors in the value chain that previously had little means of communication. The number of communication channels has also multiplied: insurers may communicate with customers through brokers, via the web, apps, and other channels simultaneously.

### 2. Better risk reflection & monitoring

Enhanced data analysis and the availability of unprecedented levels of risk data allow insurers to make much more sophisticated decisions with regards to how to select and manage risks. New ways of monitoring risk may drastically reduce some risk pools by encouraging prevention, whilst this enhanced awareness may also lead some parts of the market to be uninsurable.

**3. Improving backend processes to increase effectiveness**

Smart contracts, distributed ledger technology, and other digital processes can enhance the efficiency of insurers’ in-house processes, leading to automation and the reduction of duplications.

**4. Integrity risk (cyber and privacy)**

Aggregating large amounts of data (both consumer data and risk-related data) raises the issue of security and privacy issues.

**5. Peer to peer insurance**

New ways of mutualising risk through digital platforms may lead to new business models.

The impact will also affect macro and micro economy simultaneously, and both the supply and the demand side:

Impact on macro / sectorial perspective	Impact on micro / firm supervisory specific
<ul style="list-style-type: none"> <li>• InsurTech will affect competitiveness, increasing the ways in which companies can differentiate themselves in the market, and overturn existing market dynamics.</li> <li>• InsurTech will impact consumer choice, allowing for new products, new distribution channels, and new risk management approaches.</li> <li>• InsurTech will increase technological interconnect- edness, which may also multiply vulnerabilities if the whole sector relies on specific technologies.</li> <li>• InsurTech offers new perspectives for regulatory oversight, with new levels of granular data avail- able (although existing data gathering may not reflect risks in InsurTech activities).</li> </ul>	<ul style="list-style-type: none"> <li>• Established insurers may find that they need to change aspects of their business model to stay com- petitive.</li> <li>• Technological changes in distribution raise new conduct of business perspectives, at all stages in the value chain.</li> <li>• Supervisory oversight may be harder where the insur- er is further away from the end customer, and many processes have been outsourced.</li> </ul>

Impact on supply-side factors	Impact on demand-side factors
<ul style="list-style-type: none"> <li>• Technology is increasing computing power, data storage, and connectivity at reducing cost.</li> <li>• Technology is increasing the sophistication with which data can be analysed.</li> <li>• Increased capital / investor appetite in low yield environment - investments are being driven in search of innovation for growth</li> </ul>	<ul style="list-style-type: none"> <li>• InsurTech is allowing for enhanced customer engage- ment, and cheaper distribution, whilst innovating consumer risk management (e.g. gamification of risk)</li> <li>• More available data means risk awareness is increas- ing, leading to new kind of consumer segmentation.</li> <li>• With extreme interconnectedness, consumer privacy is more important than ever before.</li> <li>• Cyber risks are a completely new class of risk that insurers need to learn to manage.</li> <li>• Societal notions of possession are evolving, with more people paying for service rather than owner- ship. This impact insurance product design.</li> </ul>

## Conclusions from the analysis

Though many scenarios exist for the future, it is too early to say with confidence what trends will materialise, and where these might occur. The innovations still need to demonstrate longer-term how they are likely to disrupt aspects of the value chain and it is not yet clear, how consumers will react on the changes. There is a stark increase in the number of InsurTech startups, but to date the incumbents have decidedly maintained the upper hand in the relationship (likely due to their familiarity with regulatory compliance, their available capital and size efficiencies).

In well-regulated markets, the compliance cost of underwriting risk is sufficiently high to deter most startups, causing InsurTech to focus largely on developing innovative distribution models instead and partnering with incumbents to underwrite the risk. Though technology is steadily advancing, it has yet to demonstrate in which areas it will affect large-scale businesses. Driverless vehicles and DLT are some early examples of material evolutions. Some existing trends are still minor, but could gain critical mass in the future to succeed on a larger scale.

Large technology firms have yet to focus on the insurance sector in a competitive way, currently opting to maintain a complementary approach by earning commissions from advertising and traffic. However, these represent a potent market force with the capacity to influence the landscape rapidly.

In general, it is safe to assume that insurers will need to adapt to survive and stay relevant in the future, and will need to deal with shrinking risk pools.

## Implication for supervisors

The trends have many potential benefits that align with supervisory objectives. The InsurTech-enabled products may align better with policyholder needs, risk pricing could become more sophisticated and result in insurers managing their exposures better, and real-time availability of data should inform more timely decisions and facilitate oversight. Digital distribution should help make insurance more affordable, and allow for more targeted products.

While the potential upside is great, there are also serious risks emerging.

- Risk pools may reduce, as advanced analytics may render some segments of the market commercially uninsurable. It may lead to price discrimination and particularly could impact low-income/higher-risk customers.
- Digitalization in distribution of inclusive insurance may also increase risk of misinformation, fraud or abuse.
- These same advanced analytics may drive the further prevention and mitigation of risks, which will reduce the amount of risk that needs insuring and disrupting existing providers.
- The plurality of data sources may pose privacy and hacking risks.
- Reliance on AI may reduce the transparency of some decisions, and may limit the depth to which even executive management really grasps how the business operates.
- An increase on reliance on outsourcing may introduce new single points of weaknesses for firms and the wider economy. For instance, if all actors in the market use a particular service (e.g. Mobile Network Operators, cloud storage, or payment systems) this could lead to concentration risks, where a sudden failure or disorderly resolution entities could undermine consumer confidence. This is a risk to the consumer, but also a consideration for macro-prudential risk and financial stability.



- Changing risk profiles may not be compatible with the design of current capital regimes.
- Embedded insurance in services may be too opaque to sufficiently oversee.
- Regulatory/legal risks: multiple jurisdictional oversight can create jurisdictional gaps or overlaps and regulatory arbitrage can happen

Supervisors will need to invest resources to understand and respond to new products and business models. The technical resources, knowledge and skills needed to work with FinTech are not traditionally part of the supervisor’s remit, and as such must be developed consciously. Some ways that have borne fruit so far is by participating in innovation hubs, or developing relationships with start-ups through closely monitored pilot projects. The supervisory perspective will be a balancing act between fostering innovation and protecting against the negative aspects of disruption.

## Looking ahead

Supervisors should expect that there will be more opportunities for mutual learning on this topic in the coming years as developments advance. InsurTech (and FinTech more broadly) is becoming a regular focus of industry and regulatory events, with more trainings and knowledge-sharing opportunities than before.

From the perspective of the Access to Insurance Initiative, InsurTech will have an effect on financial inclusion, leading to both more increased access for many, but also leading to the financial exclusion for new categories of people. The Access to Insurance Initiative will explore the inclusion aspect more deeply in the year to come, dedicating the topic of its A2ii Consultative Forums to InsurTech.

## Case Studies: UK, Germany

### UNITED KINGDOM | Stefan Claus, Bank of England

In the UK InsurTech has mainly focused on distribution channels. As a consequence, the Financial Conduct Authority (FCA) has built up the majority of supervisory experience working with InsurTech. The FCA is not alone in dealing with InsurTech however, as the Bank of England as the prudential regulator, has brought together experts of many disciplines to monitor FinTech developments, in what it calls a “community of interest”. This community is building up knowledge, through the experience of its diverse participating experts.

This community is responsible for organising regular supervisory forums, where experts from across the Bank monitor and discuss evolving market trends, and invite external experts to provide their views. To date the group has been engaged in (1) assessing whether current supervisory structures are adequate to assess and respond to the changing risk profile presented by InsurTech; (2) producing internal papers that



compare reported developments with supervisory experience from the regulated firms; and (3) initiating research such as the potential impact from autonomous vehicles on the insurance sector.

The Bank of England also runs a FinTech accelerator – this works in partnership with technology firms to explore how FinTech innovations could be used to support central banking operations and general supervision. This helps to improve the Bank’s understanding of FinTech trends, as well as to support developments in this sector.

## UNITED KINGDOM

Mr Paul Worthington and Tony Gellett, the Financial Conduct Authority

UK’s Financial Conduct Authority (FCA) is the conduct regulator for financial service firms and financial markets in the UK and responsible ensuring the fair treatment of the customers. The FCA’s innovation department has two main objectives:

- 1 Policy engagement: this means scanning the horizon for start-ups and engaging with the InsurTech community to have ear to the ground, and to hear about potential issues and barriers to entry. This allows the FCA to react in a timely fashion to developments, and is an outward-facing activity.
- 2 Services for InsurTech firms: by providing advisory services to beginning start-ups, it allows the FCA to have a deep understanding of what is happening in the market, and how these developments interact with the regulatory regime. The services provided include:
  - a) Direct support: Support: The Direct Support Team provides a dedicated contact for innovator businesses that are considering applying for authorisation or a variation of permission, need support when doing so, or do not need to be authorised but could benefit from FCA support. If a firm is eligible for Direct Support the FCA will establish the most appropriate form of support, such as when a firm is seeking to introduce a new measure to the market and they are unsure how this fits in with the regulatory framework, or they have questions about how to get authorisation, they can ask these questions to the FCA. Up to 15% of firms supported in this way have been InsurTech, and this is the second highest segment overall. Another tool provided to firms is the use of an ‘informal steer’, which can provide guidance to help address concerns or issues a firm faces. These are not legally binding but have helped firms continue to engage with the FCA at an early stage.
  - b) Regulatory sandbox initiative: provides a live testing environment for companies who want to test a new idea on a small scale on live consumers. Initially there was only one InsurTech firm accepted as part of cohort 1, but since then the number increased to 6 InsurTech firms in cohort 2, showing a significant rise of interest.

To qualify for the regulatory sandbox, the FCA first investigates if the suggested product is of real benefit, is genuinely innovative, has a need to test in the sandbox and is ready to conduct its test. If this is the case, and it merits testing, then the FCA can issue a restricted authorisation, which includes limits on the activities which the firm can perform, and for a limited time only (six months). This includes limits on the volume and nature of business. This allows the FCA to monitor how the product interacts with customers in the market. Individual case officers work closely with the firm to make sure that the supervisory authority is comfortable with the test project, and that the company is also benefiting from the programme. There is a weekly reporting mechanism, and at the end of 6 months a conclusion and assessment is performed. There the decision is made whether the pilot is ready to exit the sandbox.

So far, companies applying for help to the FCA have had very little interest in underwriting any risk themselves, and prefer to take up a role as an intermediary which passes risk to incumbent insurers. The more innovative nature of these business models often makes it harder for large firms to evaluate within their existing risk appetites, and procurement processes.

Most InsurTech firms currently focus on the user experience, optimizing the delivery of traditional insurance products. They simplify the customer journey, and use technology to let customers better manage their own risks. It is likely that this trend will continue.

It is worth noting that this work requires a lot of interdepartmental interaction within the FCA. Though it requires intensive supervisory resources (compared to the size of the companies), the interactions it generates also allow the FCA to better analyse whether its own rules are fit for purpose;

#### **GERMANY** | Heiko Heuer, BaFin - Federal Financial Supervisory Authority (BaFin)

BaFin takes a “technologically neutral” approach to emerging InsurTech. Concretely, this means that they are supervised according to the strict functions they perform, without any special treatment due to their innovative nature. Risk carriers are treated as insurers, distribution channels as intermediaries (which fall outside of BaFin’s supervisory scope), and outsourcing rules apply without exceptions. BaFin is generating expertise in supervision of IT, but this does not constitute a sufficiently different supervisory category to merit separate treatment. If there is any doubt whether the company is an insurer or an intermediary, it is analysed and a decision is made on a case-by-case basis.

## Questions from the audience

- › **When companies are part of the regulatory sandbox, do you apply same prudential and conduct of business requirements? Or are there separate requirements?**

The FCA responded to this question, noting that the same regulatory requirements apply. When the FCA issues a restricted authorisation, the restrictions apply only to the firm's activities, not to any supervisory requirements. The FCA is able to work with firms in developing their testing plans to guide them towards complying with regulations, but this kind of treatment is only possible for those aspects that are within the FCA remit (e.g. all prudential requirements would be out of scope). It may be that this dynamic is one of the things that leads companies to model themselves as intermediaries, as they may not consider it feasible to set up activities in compliance with prudential rules.

The FCA also noted that this upfront engagement is very helpful further down the line, once firms need to get licensed as they already have a relationship with the FCA. It helps soften the steepness of the educational journey for the companies.

The Bank of England also responded to this question, noting that they also interact disproportionately with small companies to help them understand the requirements. However, this never results in reduced capital requirements.

- › **Are any supervisors developing systems to mitigate emerging risks that they observe in the market?**

The Bank of England responded that it is still early days for this. Business models are evolving, and it is clear that some trends, like driverless cars, will drastically decrease the risk pool for motor insurance.

- › **Due to the high costs involved in developing some cutting-edge technologies, could it be a barrier for entry for small and local insurers, causing market concentration?**

The Mexican supervisor responded that it is too early to have a final conclusion on this matter. Initial investment costs are significant, but as time passed by they tend to reduce. Furthermore, this is not only about costs, but also involves issues of demand and supply.

- › **What is the current status of InsurTech in Latin America?**

InsurTech start-ups are developing new distribution channels, price comparison tools and aggregation methods. It is expected that this will evolve in the future.

- › **Does the IAIS recommend to draft specific InsurTech regulation? Or does it recommend to adapt existing regulation?**

The Mexican supervisor responded that the IAIS is currently in a stage of evaluating emerging trends, and following market evolution, and in this stage the IAIS is not planning to issue recommendations regarding InsurTech regulation. The IAIS is providing working groups as platforms for exchange to share experiences, and for its members to exchange information. Until any other specific recommendations emerge, InsurTech start-ups should be treated under existing supervisory approaches, commensurate with the nature of their activity.

➤ **Could technology cause financial exclusion?**

The Mexican supervisor responded that in Non-Life insurance, advanced technology is expected to improve the ability to capture risk. However, in the case of life and health insurance coverages, some technological innovations designed to capture the individualized risk profiles could cause exclusion and discrimination. Supervisors should keep this in mind when implementing public policies to protect personal data in order to avoid financial exclusion.

➤ **When a start-up provides several parts of the insurance value chain, how is it determined whether they should be supervised like an intermediary or an insurer?**

The Mexican supervisor responded that the dividing line is usually at the point of taking on risk. If a start-up underwrites risk, it should be subject to prudential requirements like an insurer, including the setup of technical provisions.

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