IAIS

INTERNATIONAL ASSOCIATION OF INSURANCE SUPERVISORS

APPLICATION PAPER ON THE USE OF DIGITAL TECHNOLOGY IN INCLUSIVE INSURANCE

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The International Association of Insurance Supervisors (IAIS) is a voluntary membership organisation of insurance supervisors and regulators from more than 200 jurisdictions in nearly 140 countries. The mission of the IAIS is to promote effective and globally consistent supervision of the insurance industry in order to develop and maintain fair, safe and stable insurance markets for the benefit and protection of policyholders and to contribute to global financial stability.

Established in 1994, the IAIS is the international standard setting body responsible for developing principles, standards and other supporting material for the supervision of the insurance sector and assisting in their implementation. The IAIS also provides a forum for Members to share their experiences and understanding of insurance supervision and insurance markets.

The IAIS coordinates its work with other international financial policymakers and associations of supervisors or regulators and assists in shaping financial systems globally. In particular, the IAIS is a member of the Financial Stability Board (FSB), member of the Standards Advisory Council of the International Accounting Standards Board (IASB) and partner in the Access to Insurance Initiative (A2ii). In recognition of its collective expertise, the IAIS is also routinely called upon by the G20 leaders and other international standard setting bodies for input on insurance issues as well as on issues related to the regulation and supervision of the global financial sector.

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This paper was prepared by the Financial Inclusion Working Group in cooperation with the Access to Insurance Initiative.

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List of Abbreviations

A2ii	Access to Insurance Initiative
AI	Artificial Intelligence
AML	Anti-Money Laundering
ARPU	Average Revenue per User
BFA	Bankable Frontier Associates
CDD	Customer Due Diligence
CFT	Combating the Financing of Terrorism
DLT	Distributed Ledger Technology
FATF	Financial Action Task Force
FinTech	Financial Technologies
IAIS	International Association of Insurance Supervisors
IBI	Index based insurance
ICP	Insurance Core Principle
ILO	International Labour Organisation
IoT	Internet of Things
InsurTech	Insurance Technologies
KPI	Key Performance Indicators
KYC	Know Your Customer
M-insurance	Mobile Insurance
ML	Machine Learning
MNO	Mobile Network Operator
MoU	Memoranda of Understanding
OTC	Over the Counter
P2P	Peer-to-peer
TSP	Technical Service Provider

1. Introduction

1. The IAIS, through the ICPs,[1] provides a globally accepted framework for the supervision of the insurance[2] sector. Its mission is to promote effective and globally consistent supervision of the insurance industry in order to develop and maintain fair, safe and stable insurance markets for the benefit and protection of policyholders;[3] and to contribute to global financial stability.

2. There is a general recognition that enhanced access to insurance services helps to reduce poverty, improve social and economic development and supports major public policy objectives, such as improving health conditions for the population, dealing with the effects of climate change and food security. Proportionate regulation and supervision can be supportive of access to insurance services as these will avoid unnecessary barriers for market access and offering services.

3. Since 2006, the IAIS has developed an "Access Agenda" as part of its mission of promoting effective supervision to help develop insurance markets. The Supervisory and Supporting Material[4] that the IAIS has adopted in order to promote access to insurance and inclusive insurance is listed in Annex 1.

4. The term "inclusive insurance" is used broadly in this Application Paper, denoting all insurance products targeted to the excluded or underserved market, rather than just those for the poor or a narrow conception of the low-income market. In developing countries, the majority of the population is often classified as un(der)served. Therefore, inclusive insurance is a relevant topic regarding the development of the retail insurance market as a whole. While the term "inclusive insurance" is aimed at the excluded or underserved markets, the term "microinsurance" has been defined as insurance which is accessed by low-income populations, provided by a variety of different entities and operates in accordance with generally accepted practices, including the ICPs.[5]

5. The term "digital financial inclusion" refers to the use of digital financial services in order to advance financial inclusion[6], for example, mobile insurance.

6. For the purpose of this Application Paper, "digital inclusive insurance" is defined as "insurance utilising digital mechanisms to improve its outreach and delivery". Outreach and delivery are core elements for increasing access of the un(der)served to insurance services.

7. "Mobile insurance" (m-insurance) refers to any insurance that is sold or subscribed to through a mobile phone and/or in partnership with a mobile network operator (MNO). [7]

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[1] The complete set of ICPs including introduction, Principles, Standards and Guidance can be found on the public section of the IAIS website (http://www.iaisweb.org/ICP-on-line-tool-689)
[2] Insurance refers to the business of insurers and reinsurers, including captives.
[3] The IAIS Glossary defines a "customer" as a "policyholder or prospective policyholder with whom an insurer or insurance intermediary interacts, and includes, where relevant, other beneficiaries and claimants with a legitimate interest in the policy". The glossary does not define "policyholder" although earlier papers had noted that "Policyholders includes beneficiaries".
[4] Supervisory material is generally the standard-setting material of the IAIS (ICPs, ComFrame and G-SII Policy Measures; Supporting material consists of IAIS Issues Papers and Application Papers.
[5] See paragraph 1.32 of the Application Paper on Regulation and Supervision supporting Inclusive Insurance Markets.
[6] Global Partnership for Financial Inclusion, Issues Paper on Digital Financial Inclusion and the Implications for Customers, Regulators, Supervisors and Standard-Setting Bodies, 30 and 31 October 2014. ((www.gpfi.org/publications/digital-financial-inclusion-and-implications-customers-regulators-supervisors-and-standard-setting)
[7] For more defintions of m-insurance see Section 1.3 of the report Regulating Mobile Insurance, Insurance business via mobile phones: regulatory challenges and emerging approaches, A2ii (April 2018) (https://a2ii.org/sites/default/files/reports/2018_05_02_mobile_insurance_regulation_web.pdf)

About this paper

8. This Application Paper seeks to provide guidance to supervisors, regulators and policymakers when considering, designing and implementing regulations and supervisory practices with respect to the use of digital technology in inclusive insurance. Whilst the primary focus of this paper is on building inclusive insurance markets, some considerations and suggested approaches could also be of interest to supervisors outside the inclusive insurance field.

9. As well as considering the use of digital technology in inclusive insurance, this Application Paper examines aspects of FinTech[8] and InsurTech[9] relating to inclusive insurance. These developments are not unique to inclusive insurance and are finding their way into all insurance markets regardless of their level of development and saturation. Before FinTech developments emerged, other technological innovations had already been introduced in inclusive insurance markets as a response to challenges in distribution, access to insurance, reducing costs, and creating sufficient scale for a viable business. There are also specific challenges for supervisors who need to find a proportionate response to the increased use of technical solutions, particularly those that involve multiple parties, both in and outside the insurance sector.

10. This Application Paper builds on the Issues Paper on Conduct of Business in Inclusive Insurance (IAIS, 2015), which broadly deals with the fair treatment of customers within inclusive insurance markets. An insurance product within an inclusive insurance market may provide benefits to both individual customers and to (the) public policy objective(s) of the country or region. It is therefore essential to provide insurance services that add value in view of the specific context or living conditions of the inclusive insurance customer. Following the Issues Paper, the IAIS considered it worthwhile to develop and provide application guidance in order to clarify how the use of digital technology can contribute to these private and public objectives.

Structure of the paper

11. This Application Paper is structured around three main sections:

- Section 2 describes the typical inclusive insurance market and the typical inclusive insurance customer. This explanation is provided to offer context of the environment within which the supervisor is operating;
- Section 3 offers a specific description of the use and implications of digital technology within inclusive insurance markets. In combination with Section 2, Section 3 portrays the context within which the ICPs should be proportionately applied;
- Section 4 provides application guidance on the relevant ICPs, regarding the use of digital technology in inclusive insurance. Where relevant, examples of observed practices have been included.

It should be noted that this Application Paper paraphrases from supervisory material such as the ICPs and parts of other papers, mostly in a summarised form. This is to minimise the need to consult other materials while reading this Application Paper.

[8] FinTech (short for Financial Technologies) refers to "technologically enabled financial innovation which 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"; IAIS, FinTech Developments in the Insurance Industry, 21 February 2017; with reference to the definition used by the Financial Stability Board; 16 March 2016.
[9] InsureTech (short for Insurance Technologies) is the insurance-specific branch of FinTech that refers to the variety of emerging technologies and innovative business models that have the potential to transform the insurance business; IAIS, FinTech Developments in the Insurance Industry, 21 February 2017.

2. Features of an Inclusive Insurance Market[10]

12. This section presents the main features of the typical market context within which the ICPs need to be applied in order to enhance inclusion.

13. As outlined in the Issues Paper,[11] the features of inclusive insurance markets differ from more conventional insurance markets, in particular in terms of:

- The profile of an inclusive insurance customer;
- The country-specific context and conditions;
- The distribution models typical for inclusive insurance;
- Other elements of the insurance lifecycle.[12]

The profile of an inclusive insurance customer

14. Although inclusive insurance customers are generally able to manage their livelihoods, they are considered more vulnerable because of deprivations they face as a consequence of poverty, including limited access to the whole range of risk mitigating tools. Aside from financial exclusion and the lack of access to effective mechanisms of risk transfer, low-income customers often lack other basic necessities such as education, employment and access to justice. The Issues Paper elaborates on the inclusive insurance customer profile,[13] by referring to:

- Low education levels and low insurance awareness;
- Low levels and irregular streams of disposable income;
- Low levels of formal identification document penetration;
- A living environment that makes it difficult to reach inclusive insurance customers;
- A lack of trust in insurance providers and a negative perception of insurance.

The country-specific context and conditions

15. Inclusive insurance is most relevant in developing countries, which are often characterised by low levels of insurance market development and limited skills in the insurance sector. Further, the regulatory and supervisory capacity in developing countries may also be constrained.[14] Generally, formal employment is limited and the footprint of the financial sector (in terms of bank branches, other outlets and the number of people served), is generally low.[15]

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[10] Note that the term "inclusive insurance market" as used in this paper does not refer to markets that are already inclusive, but rather markets where there is an imperative to enhance the level and extent of inclusion.
[11] See Section 2 of the Issues Paper.
[12] The term "lifecycle" is used as reference to the elements that constitute insurance provision: from product development, to distribution, disclosure of information, customer acceptance, premium collection, through to claims settlement and the handling of complaints by the insurer.
[13] Section 2.1
[14] In the Southern African region, for example, a 2013 study across 12 countries found that insufficient technical supervisory staff challenges monitoring and supervision of the insurance market (Chamberlain, D., Bester, H. & Raja, B., 2013. Regulating for inclusive insurance markets in SADC: review of regulation. Available at: http://www.microinsurancecentre.org/resources/documents/regulating-for-inclusive-insurance-markets-in-sadc-review-of-regulation.html). The IMF highlights limited supervisory capacity as a challenge across much of emerging markets (IMF, 2011. Financial Stability Issues in Emerging Market and Developing Economies. Available at: http://www.imf.org/external/np/g20/pdf/110211.pdf).
[15] The World Bank states that low-income employment, under-utilisation of skills, and lack of full-time job opportunities are particularly evident in emerging markets (World Bank, 2015. Recent Developments in Emerging and Developing Country Labor Markets. Available at http://blogs.worldbank.org/prospects/global-weekly-recent-developments-emerging-and-developing-country-labor-markets). The Bank for International Settlements (BIS) reports limited development of the financial infrastructure in developing economies (Ehlers, T., 2014. Understanding the challenges for infrastructure finance. Available at: http://www.bis.org/publ/work454.pdf).

The distribution models typical for inclusive insurance[16]

16. In order to maintain low distribution costs, inclusive insurance providers often choose to partner with third party client aggregators to leverage such partners' existing client base and infrastructure. Hence, the typical distribution model[17] is often characterised by a complex value chain, with multiple discrete players – such as an administrator[18] and/or technical service provider (TSP),[19] a broker or agent, a customer aggregator and a payments platform – all of which affect the relationship between the customer and the insurer. These parties may have different incentives, which may not be aligned with those of the insurer. Further, the sales representatives may have a different skillset as compared to a conventional insurance broker or agent.

Other elements of the insurance lifecycle

17. Besides the distribution channel, there are several challenges that impact across the various stages of the inclusive insurance lifecycle, as outlined in the Issues Paper, specifically:

- The need to maintain low premiums challenges the conventional face-to-face method of enrolling **new clients**;[20]
- Where the target market has a low rate of financial literacy, adequate **disclosure** of product features and claims processes is particularly important. However, in the context of the inclusive insurance market, face-to-face and/or verbal disclosure may be costly as a proportion of the premium value;
- **Premium collection and claims payment** pose significant challenges, particularly when customers do not have their own bank accounts;
- Target customers in the inclusive insurance market may face difficulties in obtaining **claims documentation**. Additionally, limited financial literacy will have an impact on the execution of the claims process and this may lead to delays in settling claims. A further risk is that an individual **claims assessment** or a verification of costs may be prohibitively high for low-premium policies;
- The inclusive insurance customer usually has a limited knowledge of the **complaints process** and may feel intimidated and unable to file a complaint. Hence, the inclusive insurance provider has a responsibility to educate the customer about his/her rights and the complaints processes, which are costly and challenging in a low-premium environment.

18. This section considers how digital technology is being employed and how it could be applied to the challenges outlined above. In this respect it is also important to consider how technology-driven partnerships impact on the insurance value chain and the implications of this for insurance supervision.

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[16] Section 2.3

[17] As described in Section 2.3 of the 2015 IAIS Issues Paper on Conduct of Business in Inclusive Insurance. Available at: https://www.iaisweb.org/file/57850/issues-paper-on-conduct-of-business-in-inclusive-insurance.

[18] An administrator means a person or entity that has a mandate from an insurer to do administrative work, notably claims administration, on its behalf.

[19] Technical Service Providers (TSPs), also called global intermediaries, tend to be full service intermediaries that play throughout the value chain, although typically working through an aggregator and an underwriter (GIZ, Responsible Mobile Insurance,2015. Available at: https://a2ii.org/sites/default/files/reports/responsiblemobileinsurance-20150602-final.pdf)

[20] Customer acceptance refers to acceptance of the customer's risk by the insurer based on a policy proposal submitted by the customer, or by a broker or other intermediary on behalf of the customer. Customer acceptance signifies that a contract has been entered into between the policyholder and the insurer. Before this can be the case, there needs to be sufficient certainty on the risk profile, price, terms and conditions for both parties to reach agreement (IAIS, 2015. Issues Paper on Conduct of Business in Inclusive Insurance. Available at: https://www.iaisweb.org/file/57850/issues-paper-on-conduct-of-business-in-inclusive-insurance).

3. Use and Impact of Digital Technology in Inclusive Insurance Markets

19. The features outlined in Section 2 examine the challenges that affect the inclusive insurance lifecycle. Increasingly, digital technology is being applied to help overcome these challenges.[21] Note, however, that digital technology is not the answer to all challenges faced when making insurance more inclusive. It is only part of the solution. The use of technology impacts components such as product design, the efficiency of inclusive insurance delivery, as well as the roles and parties involved in the value chain. It is suggested that digital technology can either be a tool to enhance existing business models, or it can be utilised to form the heart of the business model.

20. This section describes the different technologies that are impacting the design, delivery and value chain for insurance, whether that be as a tool for distribution, servicing of customers, or as a means for reshaping business models (which is the case for peer-to-peer (P2P) insurance and on-demand insurance).

3.1 Digital technology applications

21. The IAIS report titled "FinTech Innovations in the Insurance Industry"[22] provides a general overview of significant innovations within the insurance industry. Detailed below is a summary of the latest innovations as at the time this report was published.

Digital platforms – ie internet and smartphones

22. Various initiatives such as pay-per-use products and P2P insurance have emerged to improve the customer experience or service. Mobile phone Insurance (m-insurance) is part of this innovation but – in view of its particular significance to the inclusive insurance market – is also discussed in Section 3.2.

Internet of Things (IoT)[23]

23. IoT involves the internetworking 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.

Telematics/Telemetry

24. 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, specifically 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.

[21] Digital technology in inclusive insurance appeared on the radar in 2006 and the number of initiatives has been growing exponentially since then (BFA, 2015).
[22] 21 February 2017; https://www.iaisweb.org/page/news/other-papers-and-reports/file/65625/report-on-fintech-developments-in-the-insurance-industry
[23] 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 communication technologies (source http://www.itu.int/ITU-T/recommendations/rec.aspx?rec=y.2060)

Big Data[24] and Data Analytics[25]

25. 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 customised products and allow automated underwriting.

Comparators and Robo advisors

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

Machine Learning (ML) and Artificial Intelligence (AI)

27. The use of ML and AI enables several insurance industry processes to use data in real time and, especially, in events prediction (eg 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 or in preventive counselling.

Distributed Ledger Technology (DLT)

28. 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 programme code that is capable of facilitating, executing, and enforcing the negotiation or performance of an agreement using DLT.

P2P, Usage Based, On Demand Insurance

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

a. P2P: 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 on a broader scale;

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.

[24] Big Data is the term used for the storage of data from different sources, in large volume and speed; IAIS, FinTech Developments in the Insurance Industry, 21 February 2017.
[25] 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; IAIS, FinTech Developments in the Insurance Industry, 21 February 2017.

3.2 Digital technology applications in an inclusive insurance context[26]

30. The use of digital technology or FinTech can overcome challenges in the delivery of microinsurance and inclusive insurance products. Such challenges could be:

- Lack of information on customers;
- Difficulties in reaching consumers;
- Meeting specific needs of the un(der)served consumers;
- Coping with consumers who lack experience in dealing with formal insurance services;
- Keeping premiums affordable by reducing business costs.

31. **Lack of information on customers** is caused by the reduced engagement with the formal sector by the un(der)served consumers, less official documentation and lower formal employment rates. This affects the quality and quantity of consumer data available, which is necessary for adequate risk profiling, product development, sales, payment collection and claims assessment. Digital technology enables the collection and transfer of existing and new data in real time and the application of innovative analytics. New data sources can be used for product design and sales to better approach the target customers using voice calls, mobile payments and social networks. Also, sensors can be used to recognise consumer behaviour for developing value adding products. Claims can be submitted by electronic means using digital images. Data from satellite weather stations can be used to trigger pay-outs under index-based insurance policies. AI could potentially be used to predict risk events and to alert policyholders.

32. **Difficulties in reaching consumers** are caused by scarce physical touchpoints with the distribution network of insurers, and by consumers being largely unbanked, informally employed and living in rural areas. As a consequence, customers are difficult to reach for sales of insurance products, post-sales service, collection of premiums and settlement of claims. Currently, partnerships with MNOs using mobile-phone technology have shown to be an effective way in reaching customers. Mobile phones technology can be used for onboarding, premiums payment using airtime, and claims settlement. Digital P2P platforms are also a promising approach to enhancing outreach to consumers. Consumers can access platforms for product and price comparison using mobile phones, tablets or laptops. Mobile and online chat services facilitates communication with customers.

33. The typical inclusive insurance customer will have **specific needs** with respect to his/her insurance product in terms of insurance coverage, way and timing of premiums collection and claims process. Digital platforms, mobile phone technology and P2P platforms are being used to serve inclusive insurance customers with tailor-made products in terms of cover (eg healthcare and rural fire), servicing, and claims settlement.

34. **Inexperience in dealing with formal insurance services** could be linked to consumers being less literate, with less exposure to insurance as a phenomenon. Digital platforms, accessible via mobile phones, tablets and laptops provide remote access to insurance services. Mobile phone hotlines can achieve the same. Also, websites are being designed using icons to inform inexperienced or less literate customers.

35. In the inclusive insurance space it is important to keep **insurance affordable** and therefore **business expenses low**. Insurers' operating costs can be kept low by using digitalised business processes, thereby reducing the need for human intervention.

[26] This section 3.2 is prodominantly based on the research study "InsurTech for development" by Cenfri, FSDAfrica and UKAid (March 2017); https://cenfri.org/publications/role-of-insurtech-in-microinsurance/

Examples of digital technology applications in inclusive insurance contexts:

Big Data and Telematics:

- USA: Cignifi, a mobile data analytics firm, analyses numerous mobile data variables – such as voice calls, mobile money transactions, mobile savings, social networks and demographics – to determine a premium appropriate for different customer segments. The aim is to enable its microinsurance partners to tailor SMS/text message based marketing efforts to specific customer segments in order to increase the likelihood of acceptance;
- Senegal: The VoLo Trust Information Platform (VTIP) binds biographical, biometric, and sector specific data into a multi-platform and scalable database used within the health insurance sector. A unique Biometric Identification Number (BIN) is created for each participant to counter identity fraud;[27]
- India: IFFCO-Tokio (ITGI) insurance company is using Radio Frequency Identification (RFID) chips that are injected under the skin of the animal for its livestock insurance policies. These chips are accessible through a reader, which allows an insurance official to verify that the RFID reading coincides with the identification number on the policy when a farmer reports a claim. The aim of this product is to reduce the number of fraudulent cases and to expedite the claims process.

P2P:

- South Africa: Riovic offers P2P insurance and an on-demand insurance platform which offers insurance backed by crowdfunding. It acts as a marketplace, which connects those seeking insurance with investors who are willing to share the risk of a pay-out in exchange for returns in the form of premiums. Riovic offers automobile, business and home insurance. Those seeking insurance can apply digitally via the Riovic application or their website and a combination of data analytics and actuarial science will determine the price of the policy;
- China: TongJuBao is a P2P insurance platform formed by P2P Protect, a technical service provider, [28] without an underlying insurance carrier. It is described as a collaborative insurance model which brings users together to share risks with the intention of maintaining fairer costs andfairer claims treatment while also increasing transparency and user empowerment, as opposed to traditional insurance models. It also develops mini or micro-insurance products by addressing social and/or family issues, which are not covered by other insurers within the market.[29]

  Their model separates the underwriting process from the claims process. Firstly, TongJuBao creates social communities or groups that customers can join as members. Next, a deposit account for every member is created, which TongJuBao has delegated authority to operate. All members pay two sums of money into their deposit account – the first sum is the administration fee and the second sum is effectively a guarantee deposit to cover the risk of being insured. In order to buy units of protection, all members are expected to pay the same amount into their deposit accounts. This model follows a mutualisation model whereby members make a deposit and anyone can withdraw from it. There is, however a capital limitation and therefore all pay-outs are restricted to a capped amount;

[27] According to the company website: www.volotrust.com

[28] P2P Protect is now expanding this model to the USA (P2P Protect inc) and Europe.

[29] Such as "marriage safety" or "divorce first aid" insurance to tide the policyholder over when a marriage breaks down or provide legal support, "missing child insurance" to fund a professional search, and "family unity insurance" that pays out when a person needs to take time off from work due to family demands (e.g. to return home to take care of parents' health).

Satellite or remote sensor technology in Index Based Insurance (IBI):

- Kenya: Kilimo Salama is an index-based weather insurance product that allows farmers to insure inputs purchased at participating agricultural dealers. Farmers are expected to pay a premium, which is equivalent to approximately 5 percent of every USD 100 worth of inputs, required to plant one acre of maize, and the input manufacturer shall also pay an additional 5 percent. Farmers can register through microfinance institutions, cooperatives, or agricultural dealers, all of which use a mobile phone application to record the farmer's details into the system. The farmer will then receive a confirmation message via SMS, listing the registration details and a policy number. Rain levels are monitored using satellite data and automated weather stations – in the event of excess rain or drought, funds are automatically paid into the farmer's account with M-PESA.

Usage-based insurance:

- South Africa: The insurance provider Hollard uses a satellite-tracking device attached to the car to measure the number of kilometres driven. The Pay as you Drive product is priced according to the number of kilometres driven. It aims to encourage the customer to drive less, thereby saving money on premiums and secondly, the product acts has an anti-theft device to help locate a stolen vehicle.

Whatsapp / Facebook:

- Customers of BIMA can submit their claims via Facebook and/or Whatsapp in different markets including Cambodia, Senegal, the Philippines and Paraguay where such measures have led to a rise in the number of claims.

3.3 M-insurance models

36. In its broadest sense, inclusive m-insurance is the use of the mobile phone channel for any part of the insurance product lifecycle to help overcome the challenges to inclusive insurance. Considering the impact the m-insurance model has within the inclusive insurance market, it is important to address its key features.

37. An m-insurance model is an insurance business model in which an insurer partners with a MNO. The MNO can be involved in the delivery and sales process.[30]

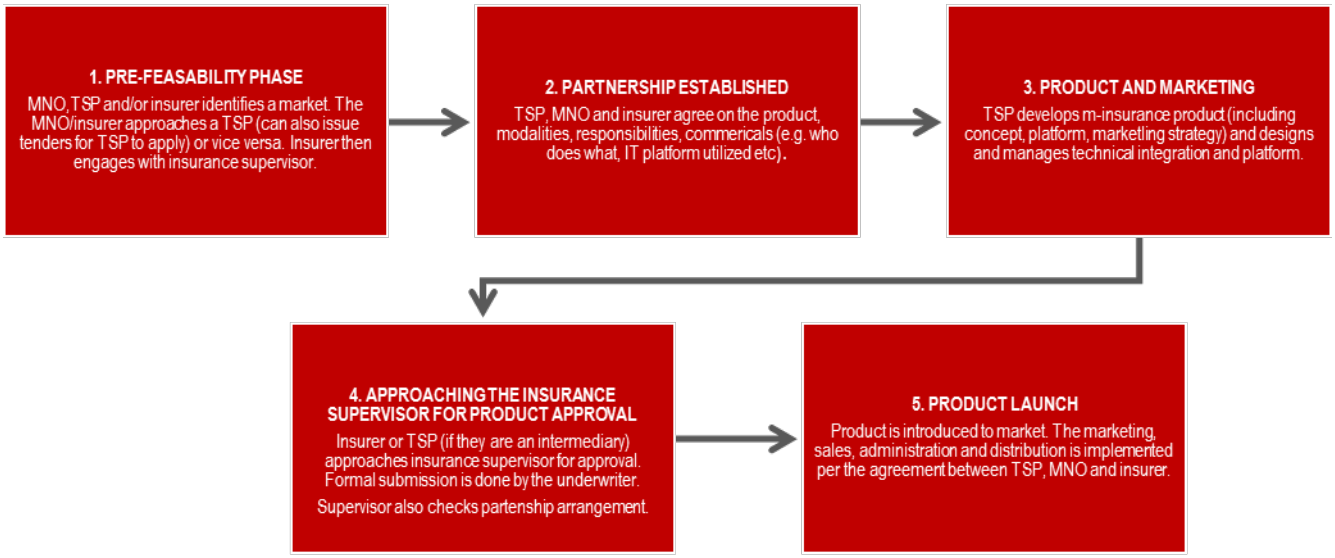
38. Typically, there are multiple stakeholders involved in m-insurance models – the insurer, the MNO and the TSP.[31] They enter into a partnership to benefit from marketing, client acquisition, payment system infrastructure, premium or claims payment of an established brand. Either party can initiate or lead the partnership or the composition of roles may vary over time. Usually, the MNO holds most power as it controls access to the customer base. A MNO can typically enter into two distinct partnership agreements, depending upon the level of its involvement and the relationships between the entities within the m-insurance value chain.[32]

- In a **transactional partnership**, the MNO acts purely as a distribution channel. It has a passive role, which may include supporting the payment of premiums through the deduction of airtime or through a mobile money account, as well as facilitating the disbursement of claims into a mobile money account. There is limited MNO involvement in marketing and product development. One insurer or TSP may distribute the same product through more than one MNO;

[30] Leach, J. & Ncube, S., 2014. Regulating m-insurance in Zimbabwe. Available at: http://cenfri.org/documents/microinsurance/2014/Rep_M_insurance_Zimbabwe_2014.pdf
[31] Wiedmaier-Pfister, M. & Ncube, S., 2017. Regulating Mobile Insurance: Status and Regulatory Challenges. Available at: https://a2ii.org/en/report/thematical/regulating-mobile-insurance-status-and-regulatory-challenges
[32] Leach & Ncube, 2014

- In a **strategic partnership**, the MNO actively drives m-insurance as a strategic imperative to meet financial and non-financial (adjacent) benefits, such as enhancing client loyalty, reducing churn, creating brand awareness, or increasing average revenue per user (ARPU). The MNO's investment may include paying premiums on behalf of their subscribers, utilising their infrastructure, using "big data" to target clients for cross- and up-selling, conducting limited administration, and/or co-funding marketing and advertising.[33]

Figure: M-insurance partnerships process diagram involving TSP and MNO[34]



39. The three different product types which are commonly found in m-insurance partnerships[35] are:

- **Loyalty products**: Insurance is provided at no direct cost to the customer. Instead, the MNO pays the premium in bulk to the insurer in order to pursue the adjacent benefits as outlined above. Loyalty products fall into the strategic partnership category;
- **Paid products**: Sign-up is voluntary and the customer pays the full premium. Premium payments can take the form of airtime deduction, mobile money, over the counter (OTC) payments, for example at a retail outlet, through a mobile money agent, or by debit order. Paid products can fall into two sub-categories – the strategic or the transactional category – depending on the level of involvement from the MNO;
- **Hybrid products**: The last category is commonly known as the "freemium" models whereby customers can upgrade their loyalty product to a higher value paid product. In this approach, the loyalty product is used as a "market maker" to encourage market discovery and provides the client with a "taste" of insurance. The upgrade from the loyalty product can result in the free option falling away, leaving only the paid option in

[33] Leach & Ncube, 2014; Tellez, C., 2013. Emerging Practices in Mobile Microinsurance. Available at: http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2012/07/MMU_m-insurance-Paper_Interactive-Final.pdf

[34] Source: Section 2.1 of the report Regulating Mobile Insurance, Insurance business via mobile phones: regulatory challenges and emerging approaches, A2ii (April 2018) (https://a2ii.org/sites/default/files/reports/2018_05_02_mobile_insurance_regulation_web.pdf)

[35] BFA, 2015. Can the digitalization of microinsurance make all the difference? Assessing the growth potential of digital microinsurance. Available at: http://cenfri.org/microinsurance/can-the-digitalization-of-microinsurance-make-all-the-difference-assessing-the-growth-potential-of-digital-microinsurance

place. [36] In this model, the partnership may graduate from being strategic to transactional, or may remain strategic.

Examples of m-insurance models:

- Pakistan: The MNO Telenor is partnering with Tameer Micro Finance Bank, in collaboration with Adamjee Life Insurance, to offer the Easypaisa Khushaal Beema Plus product to its customers. The insurance offering is led by the MNO and offers monthly life insurance coverage to Easypaisa mobile account holders based on the average monthly balance in their mobile accounts;
- Ghana: Tigo Family Care Insurance is a paid life insurance product available to all Tigo pre-paid subscribers. It covers two beneficiaries for Ghc 1.5 per month (USD 0.34) with cover up to Ghc 2000 (USD 450). The product is renewable monthly and is paid for via airtime credit. It is marketed under the Tigo brand (MNO), but is fully managed by BIMA (corporate insurance agent), from product design, customer education and distribution all the way to quality assurance and claims management. The policy is underwritten by Prudential Life Insurance Ghana. Currently, the product has 1.2 million registered subscribers;
- Cameroon: An insurer called Activa launched their Activa Makala microinsurance product together with Cameroon's Orange (MNO) in 2015. Customers can pay their monthly premium via their Orange mobile wallet and are covered for accidents up to a monthly value of USD 350.

3.4 Implication for business models

40. The use of technology has implications across a number of elements of the inclusive insurance lifecycle and these could be utilised to help overcome some of the challenges to inclusive insurance while ensuring consumer protections are maintained, as outlined in Section 2. For example:

- By applying sophisticated algorithms to big data, providers can better understand and therefore model the risk they are underwriting. In addition, providers can increase their efficiency in product design, risk selection and premium pricing.[37] Although this use of algorithms is not unique to inclusive insurance, the key drawback is that some existing consumers will become excluded, as providers will reach and may act upon conclusions based on their knowledge of their potential customers and these conclusions may have tangible consequences for their existing customers;[38]
- Policy origination can be achieved by using electronic signatures, also known as "e-contracting", thereby reducing costs. For the distribution of mobile microinsurance it is important that customers are able to confirm their registrations with their mobile devices. As the vast majority of customers have feature phones, this means that the possibility to receive confirmations by SMS is necessary for the distribution model to work;
- Distribution costs can be reduced by embedding the insurance offering in the menu on the SIM/mobile phone. Product information such as registration, administration, premium payment and claims payment may be distributed entirely via mobile phones or can be made available online;
- Analysis of behavioural data can provide an indication of a customer's propensity to accept insurance offers and to continue paying premiums, thereby resulting in improved sales targeting and distribution efforts. As a consequence, lower acquisition costs may

[36] BFA, 2015 (ibid).
[37] i2i, 2016. Big data for small policies. Available at: http://www.i2ifacility.org/Big_data_for_small_policies.html
[38] Jentzsch, N., 2016. Data protection in the context of digital financial services and Big Data.

be achieved – as well as reduced churn.[39] However, insurers may choose to focus their efforts and offers for new consumers who have the potential for churning;

- To reduce overall costs, communication with customers can be undertaken using digital means, across the lifecycle;
- Premium deductions via airtime or mobile money wallets may be used to overcome premium collection barriers;
- Technology can facilitate the filing and processing of claims – for example, supporting documentation, including photos, can be uploaded onto digital platforms to support the claims process. Big data and blockchain can help expedite the process and reduce assessment costs by quickly identifying fraudulent claims through better profiling and predictive modelling.[40] Sensor and Wi-Fi technologies like the IoT can be used to detect a variety of conditions such as motion, sound, temperature, humidity and water presence. This form of detection assists with claims verification and reducing cost.[41]

3.5 Implications for regulators and supervisors

41. Whilst the application of digital technology to inclusive insurance can lead to cost reductions, outreach and efficiency gains, it also gives rise to particular considerations for regulators and supervisors and may have various risk implications.[42]

42. Technology impacts the scope of existing insurance regulatory and supervisory frameworks, the nature of the insurance value chain, the parties involved and their roles, and has implications for the jurisdiction of insurance supervisors.[43] Given the market and supervisory capacity conditions which are prevalent within inclusive insurance markets, as outlined in Section 2, these implications have particular relevance within the inclusive insurance context. Notably:

- The speed of technological innovation challenges existing regulatory and supervisory frameworks, as these may not proactively provide for the new modalities, functions and roles, especially since some roles previously carried out by humans are now being performed by machines. In particular, supervisors in developing markets may be challenged to keep up with the pace of these changes and, for example, address IT-related risks;
- Technology forms the basis for a growing tendency towards specialisation and business process outsourcing. Whilst the outsourcing of functions can increase efficiency and decrease costs, supervisors should be aware of the longer value chain and the power relationships that exist between insurers and players such as MNOs or payment service providers who convert airtime into premium payments.[44] To ensure consumer protection, managing outsourcing and relative power relationships requires proactive engagement by the supervisor;
- Where new players, such as MNOs or TSPs, are outside the traditional jurisdiction of insurance supervisors, cooperation between different regulatory authorities is required. New online players may push the boundaries of national jurisdictions as they do not have a physical presence within a certain market;

[39] i2i, 2016
[40] i2i, 2016
[41] Jurgens, B., 2015. How IoT Will Change Your Relationship With Insurance. Available at: https://techcrunch.com/2015/08/17/how-iot-will-change-your-relationship-with-insurance/
[42] See annex 2 for an overview of these risks.
[43] The concentration level in the telco sector for some of the developing countries is shown in annex 3.
[44] A2ii, 2014. Evolving microinsurance business models and their regulatory implications. Available at: https://a2ii.org/fileadmin/file_storage/Documents/Secretariat/final/07_Knowledge_and_Learning/Cross_Country_Synthesis/2014_03_10_Annex_9_A2ii_Cross-country_synthesis_doc_1_for_consultation.pdf

- Some models push the definition boundary of insurance or intermediary services. This could be the case if data analytics across multiple platforms/customer interaction points is carried out by the customer interfacing technology firm, in which case the insurer continues to be the ultimate risk carrier, but is increasingly marginalised with many products being white-labelled.[45] This requires an informed regulatory response;
- The developments within digital technology make it possible to extend insurance to previously underserved segments of the population, many of whom will not have had exposure to insurance before and may be vulnerable to consumer abuse. Where auto-enrolment occurs – particularly in m-insurance where consumers themselves do not make an explicit premium payment to the insurer (eg premium is deducted from airtime or it is a loyalty benefit for which they do not pay at all) – policyholders might be unaware that they have an insurance cover. This has implications for supervisors in terms of consumer protection and financial education;
- Whereas digital technology allows insurance to be extended to the previously underserved – due to tailored or differentiated risk selection based on "big data" – clients could be excluded as they are deemed too risky. Differentiated risk selection can also be caused by faulty or inaccurate algorithms used for "big data" analysis. Supervisors may want to carry out reviews of such algorithms in order to check for exclusion of particular groups of customers. Wider disclosure of algorithms could be beneficial in the sense of better understanding by the interested clients of the company's approaches to client assessment;
- Collection of personal information for "big data" analysis exacerbates the risk of data abuse and a breach of data confidentiality, including from cyber-attacks. Therefore, it is necessary to observe data protection regulation and adequately apply risk management systems of insurers that employ financial innovations.

The A2ii study "Regulating Mobile Insurance" recommends that supervisors take the following actions to accommodate m-insurance:[46]

- **Adopt a proportionate approach:**
  Key considerations include to define m-insurance, ensure oversight of non-insurance entities, promote consumer understanding and disclosure via digital platforms, effect adequate regulatory changes, and decide whether to permit airtime deduction;
- **Engage with industry and embrace regulatory flexibility and openness in response to market innovation:**
  Regulation should not impede the speed of innovation around m-insurance business models and products. Test and learn approaches or regulatory sandboxes are a means to ensure the oversight of pilots during product approval process, better understand m-insurance models, encourage innovation within a controlled and supervised environment, and collect inputs for regulatory changes;
- **Deepen client understanding of m-insurance risks:**
  Policyholder awareness was the most frequently raised concern by consulted supervisors. This can be addressed through effective disclosure requirements, or consumer financial education initiatives;

[45] See paragraph 66 of the IAIS report "FinTech Developments in the Insurance Industry"
[46] Regulating Mobile Insurance, Insurance business via mobile phones: regulatory challenges and emerging approaches, A2ii (April 2018)
(https://a2ii.org/sites/default/files/reports/2018_05_02_mobile_insurance_regulation_web.pdf)

- **Improve supervisory oversight of the entire m-insurance value chain:**
  Adopting a comprehensive oversight of the m-insurance value chain can improve understanding of its business model, capture potential supervisory gaps, avoid regulatory arbitrage and promote accountability. This can be done by means of indirect supervision through holding insurers accountable for all activities across the value chain, despite the power imbalances, or directly through licensing MNOs and TSPs as intermediaries;
- **Establish data collection systems to inform evidence-based policymaking:**
  Supervisors need to enhance m-insurance data collection (eg on products, claims and renewal ratios) through reporting requirements to build an evidence-base to assess client value and inform policymaking;
- **Build supervisory capacity on digital approaches to insurance provision:**
  The growth in m-insurance requires insurance supervisors across functions to enhance their technical know-how on digital approaches to insurance;
- **Engage with other national authorities with oversight over non-insurance parties:**
  This may involve exchanging information and cooperating with other authorities (eg telecommunications regulator, central bank) during pilots, drafting of regulations and on-going supervision;
- **Share knowledge with peers:**
  Peer-exchanges with insurance supervisors from other countries can promote knowledge transfer, especially related to issues where there is limited regulatory precedent, such as effective treatment of TSPs and MNOs, cost effective monitoring of client value, supervisory tools at the intersection of various regulators, or allowing airtime as payment mechanisms;
- **Integrate m-insurance into consumer financial education initiatives:**
  As part of national financial education initiatives insurance supervisors can support strategies and approaches to educate consumers about the risks and benefits of m-insurance.

4. The Proportionate Application of the Insurance Core Principles

4.1 Proportionality in general

43. The ICPs provide a globally accepted framework for the supervision of the insurance sector. The Principle Statements prescribe the essential elements that must be present in the supervisory regime in order to promote a financially sound insurance sector and to provide an adequate level of policyholder protection. Standards set out key high level requirements, which are fundamental to the implementation of the Principle Statement and should be met in order for a supervisory authority to demonstrate its observance with the particular ICP.[47] The ICPs apply to insurance supervision in all jurisdictions regardless of the level of development, sophistication of the insurance markets, or the type of insurance products or services being supervised.[48]

44. This section of the paper provides considerations and guidance for the implementation of various ICPs relevant to the use of digital technology from a proportionate perspective. The principle of proportionality allows the supervisor to conduct supervision according to the risks inherent to insurers, and the risks posed by insurers to policyholders, the insurance sector or the financial system as a whole. This involves using a variety of supervisory techniques and practices which are tailored to the insurer to achieve the outcomes of the ICPs. Such techniques and practices should not go beyond what is necessary in order to achieve their purpose.[49] The proportionality principle in the ICPs gives room for tailored solutions to achieve the desired outcome of the relevant Principle Statement or Standard when using digital technology within an inclusive insurance context.

45. The proportionality principle does not imply that supervisory practices and regulatory requirements in inclusive insurance should be less intensive or lower compared to conventional insurance. Following on from the description in Section 3, the use of technology could create complicated business processes, higher IT risks and other risks. In order to proportionately apply ICPs, the supervisor should understand the nature and complexity of the risks associated with technological innovation and the new business models which are borne from the use of new technologies. It should be noted that if the approach is only focused on risks and not also on market development, and if there is not a proportionate response, there could also be unintended consequences. These consequences may adversely impact technological innovation, which in itself may be significant in overcoming challenges within inclusive insurance.

Observed practices:

- Ivory Coast: The leading life insurer SUNU wants to refine its new strategy on alternative distribution. A new unit has been established to handle alternative distribution, enabling SUNU to embrace activities, which have traditionally been performed by intermediaries. A project was launched, with the technical support of the ILO, to enable SUNU to provide life insurance to those within the low-income segment, beyond mobile customers. The purpose of the model adopted by SUNU is to establish its own systems and assume functions that are independent of the existing mobile network operator's platform. During the pilot phase, the insurer regularly held meetings with the supervisor, CIMA, during which updates and feedback on the project were shared. In this sandbox[50] approach, the parties assess the risks together and set safeguards to minimise the negative effect(s) of innovation on the consumer. Once the product is launched,

[47] Paragraph 6 of the Introduction of the ICPs
[48] Paragraph 8 of the Introduction of the ICPs
[49] Paragraph 8 of the Introduction of the ICPs; Paragraph 9 of the revised Introduction to the ICPs
[50] A Regulatory Sandbox or Lab has as objective the testing of innovations in a safe and controlled environment with clear boundaries and safeguards.

experience in the field will be monitored carefully and the regulatory framework will be adjusted accordingly.

4.2 Application of the ICPs in respect of the Use of Digital Technology in Inclusive Insurance

46. This Application Paper addresses the crucial role of the use of new technologies within inclusive insurance markets. In the context of inclusive insurance, the following sections provide guidance on the proportionate application of the relevant ICPs.

47. Those insurance supervisors operating within an inclusive insurance market may be confronted with limitations to their legal powers, thereby preventing the application of the ICPs. They may also encounter difficulties in the application of their legal duties based on circumstances outside the legal framework, such as a lack of sufficient supervisory staff. In principle, it is the responsibility of policymakers and legislators to arrange a supervisory framework that is compliant with the ICPs for insurance supervisors operating within an inclusive insurance market. The supervisor should raise any issues concerning the proper implementation of the ICPs with the policymakers and legislators. In addition, supervisors should take responsibility for the proper application of the provisions as provided in the legal framework and take measures to address any shortcomings.

4.2.1 Supervision: powers, resources and exchange of information

48. The use of digital technology within inclusive insurance raises various aspects that are relevant for insurance supervision, such as:

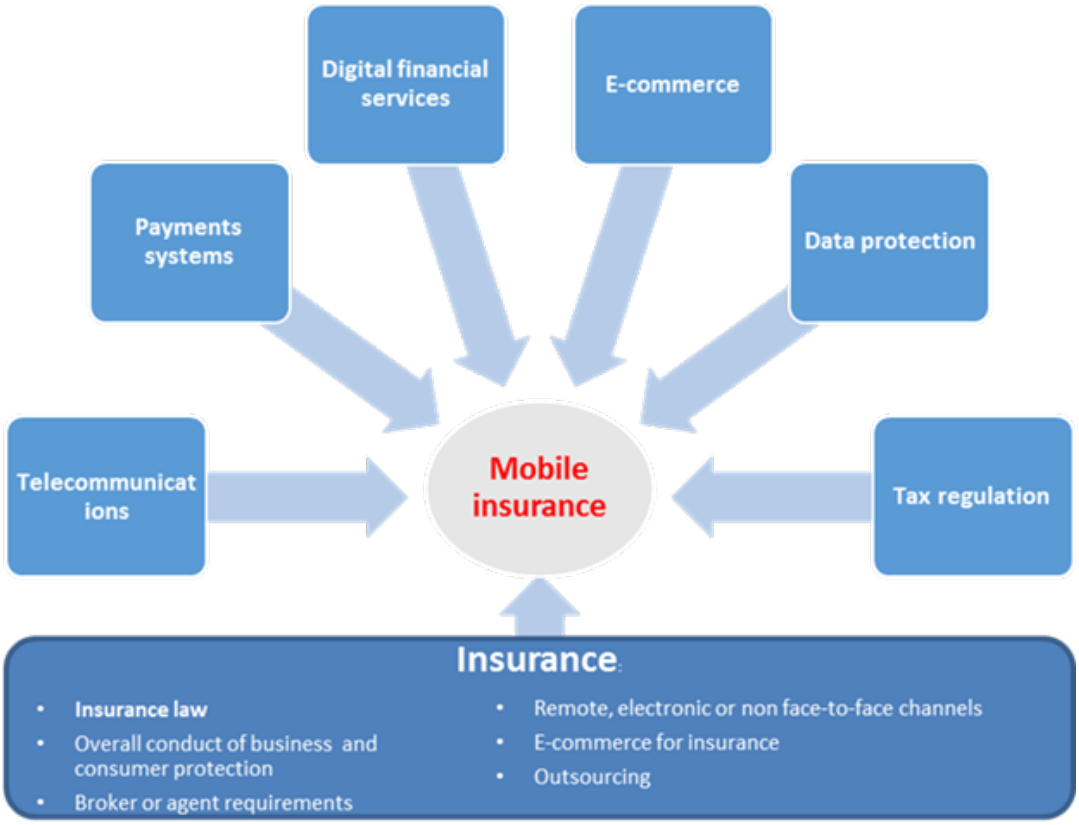
- The insurance supervisor should have adequate powers in order to supervise insurers and the intermediary's supervisor should have adequate powers to ensure that the ongoing supervisory review of intermediaries is carried out;[51]
- The supervisor's authority should sufficiently cover critical entities within the insurance value chain even if they are not conventional insurance intermediaries. Some examples of these may be MNOs and TSPs where they are used extensively or increasingly for key elements of insurance business. MNOs and TSPs may be under the primary supervision of another regulatory authority, such as the central bank for a payments provider or the telecommunications authority for a mobile network operator. The powers of the insurance supervisor will then relate to the activities or functions that would qualify as insurance intermediation functions, rather than to their underlying primary business. [52] Also relevant may be indirect supervision via the supervision of insurers (for example where business processes are outsourced).[53] Where the supervisor deems its current scope is insufficient for the purpose of protecting policyholders effectively, it should seek to extend its supervisory scope from the relevant authority or legislature and in consultation with any other relevant regulator (eg mobile network regulators in the case of extending the scope to MNOs);
- Adequate exchange of information between involved supervisors should be arranged in particular between insurance supervisors and telecom regulators;[54]
- The on- and off-site monitoring carried out by the supervisor should take into account the complexity and risk involved in IT processes;

[51] Standard 18.2 for intermediaries
[52] Standard 18.2 – insofar as they fulfil insurance intermediation functions.
[53] Standards 18.2.9 to 18.2.11.
[54] Standard 3.1 and 3.2

- The supervisor's staff should have adequate skills and knowledge of technology used by supervised firms and of IT risk management to oversee and intervene in business processes involving IT;
- If a supervisor involves third parties to carry out supervisory activities – for example EDP/IT audits – it should take adequate control measures and safeguard confidentiality.

49. **Multiple competent authorities involved in supervision:** The requirements described in the previous paragraph imply that the supervisor should have adequate powers to conduct insurance supervision[55] in an inclusive insurance context. Insurers' use of digital techniques or telecommunication should not limit the formal powers of the insurance supervisor, particularly if other regulators are competing for jurisdiction. The same principle applies to the ongoing review of intermediaries.[56] If the legal framework assigns the supervisory responsibility based on the type of supervised entity rather than the type of activity – for example to the telecom regulator for supervising MNOs including their insurance business – there may be a lack of power for the insurance supervisor to intervene when needed to protect policyholders.

Figure: Regulatory ambits influencing m-insurance[57]



50. Insurance supervisors operating within an inclusive insurance market may be confronted with limitations to their jurisdiction over insurers, for example where the telecom supervisor is designated by law as the leading supervisor, thereby excluding other supervisors. It could then be that the telecom supervisor should be considered the insurance supervisor for the purpose of the implementation of the ICPs. This may not be a desirable outcome, as the responsibility of insurance supervision may then be split across multiple different authorities, each with different legal powers, priorities and resources, including skilled staff. This could also create the

[55] Standard 1.2
[56] Standard 18.2
[57] Source: Section 4.2 of the report Regulating Mobile Insurance, Insurance business via mobile phones: regulatory challenges and emerging approaches, A2ii (April 2018) (https://a2ii.org/sites/default/files/reports/2018_05_02_mobile_insurance_regulation_web.pdf)

risk of arbitrage or more favourable treatment of some institutions under supervision. Therefore, policymakers and legislators should arrange a supervisory framework that avoids these consequences. The insurance supervisor should raise concerns of this nature with the policymakers and legislators.

51. **Supervisory powers in the case of the insurer outsourcing business processes:** When business processes and activities have been outsourced, the insurance supervisor should have sufficient power and authority to allow for effective oversight and intervention. An example to illustrate this point is if MNOs are used to distribute insurance or TSPs fulfil pricing, product design or policy administration functions. Some outsourced activities, such as office cleaning or HR management, which are not material or directly linked to the core business of the insurer, do not need to be included in the assessment of this requirement. The focus is on any key business function of the insurer, beyond intermediation, such as underwriting, premium collection, administration, management of insurance claims, loss adjusting and claims appraisal. Whilst these functions are excluded from the IAIS definition of insurance intermediation, they may be subject to other ICPs and standards relating to business conduct.[58]

52. Where a key business function of an insurer is outsourced in part or in whole to external parties (including outsourcing to related entities within the insurance group or financial conglomerate), the insurer should describe its outsourcing policy and how it intends to maintain control, ownership and oversight over the outsourced function(s).[59]

53. In jurisdictions where multiple supervisors perform oversight functions of the same companies, albeit from different perspectives, mechanisms should be in place for proper exchange of information. These mechanisms should be enshrined within primary legislation, could be further elaborated upon within a memorandum of understanding, and should be a key element of the supervisory routines and practices of all supervisors involved.[60]

54. As part of its supervisory review of insurance entities, the insurance supervisor will carry out on-site inspections and off-site reviews of submitted financial or other reports.[61] The supervisor will adopt a risk-based approach to supervision that includes evaluating the insurer's risk profile. The use of IT systems and digital processes will affect this risk profile. The more advanced and complex the IT, digital systems, processes of the insurers are, the more technically able the supervisor's staff should be in order to fulfil their supervisory responsibilities. The supervisor's staffing policies should enable it to attract and retain highly skilled, competent and experienced staff. The supervisor should provide adequate training for its staff. Alternatively, the supervisor should be able to hire or contract the services of externally-based experts when necessary.[62] Where there is a lack of technical expertise, additional funding for experts could be arranged through the existing funding provisions, or funding may be requested directly from the government. Also, external experts can be used to carry out the work. However, there should be a certain minimum level of expertise within the supervisory body and the supervisor should maintain adequate oversight over work carried out by external experts. Safeguards for overseeing the outsourced work should be put in place, including for safeguarding confidential treatment of information by the experts.

55. Where supervisory functions have been outsourced, the supervisor should set expectations, assess the competency and experience of the third party/contractor, regularly monitor their performance, and ensure their independence from the insurer or any other related party. External experts whose services are hired by the supervisor, are subject to the same confidentiality rules and professional standards as the supervisor's staff.[63]

[58] Standard 18.0.3 and Standard 18.8
[59] Standard 20.9.1
[60] Standard 3.2 and Standard 3.3
[61] ICP 9
[62] Standard 2.11
[63] Standard 2.13. 8

56. **Facilitating innovation:** Supervisors could look for ways to facilitate technological innovations and create processes and procedures for insurers to introduce these innovations in their business. This facilitation by the supervisor would usually start by establishing a point of contact to discuss plans and proposals and consider their feasibility from a regulatory and supervisory perspective. Other facilities may be set up by the supervisor such as regulatory sandboxes. These typically involve an actual try-out of an innovation using real customers and tend to be limited in scope (number of customers, duration of the trial, and limitation to type of product or sum insured). While this gives the supervisor the opportunity to monitor closely what innovative developments are taking place in the market, it should nevertheless be able and have the resources to adequately understand the technical aspects, related risks, financial impact and customer outcomes. It should also be mentioned that while often trials using a sandbox build on a proportionate application of requirements, the level of supervisory involvement will often be intense as the supervisors will dedicate its resources to close oversight of the firms in the sandbox. This will pose limitations to the number of insurers that can be part of a sandbox approach.

Observed practices:

- **Power to supervise entities that fulfil functions related to digital technology in the insurance value chain, but are not conventional insurance intermediaries:**
  Where entities such as MNOs or TSPs conduct insurance value chain functions, the main approach has been to regulate them either as brokers or as corporate agents, as is the case in the Philippines, Bangladesh and Uganda. The alternative approach is to define a class of microinsurance aggregators or intermediaries, as is the case in Tanzania and India where the regulation of such functions would be housed. In all of these cases, the supervisor has the power to regulate those functions that relate to insurance provision or intermediation, regardless of whether the entities themselves are regulated by a separate regulatory authority for their primary business, such as the payments system authority or the telecommunications authority.
- **Exchange of information and cooperation amongst supervisors:**
  Supervisors may enter into memoranda of understanding (MoUs) with other supervisory authorities who are responsible for regulating the primary function of entities which fulfil functions in the insurance value chain, but which are not conventional insurance intermediaries. This is particularly relevant for m-insurance. For example, in Ghana, a MoU is currently being finalised with the telecommunications and payment systems regulators in order to define the relationship between regulatory authorities relevant to m-insurance and to remove any regulatory gaps.

  Cooperation amongst supervisors may also occur via consultation during the product approval process. With regards to m-insurance product approval, the Tanzania Insurance Regulatory Authority (TIRA) will check whether the involved TSPs or MNOs have registered with the Tanzania Communications Regulatory Authority (TCRA).[64]
- **Dealing with entities in the primary jurisdiction of another regulatory authority:**
  An A2ii survey of various jurisdictions regarding m-insurance regulation has shown that, as the use of digital technology cuts across multiple regulatory ambits, applicable regulations under both insurance and non-insurance, legal or regulatory frameworks would need to be identified and assessed. This assessment would seek to ascertain how these regulations impact the various aspects of the insurance value chain, as well as whether they meet the objectives of the insurance supervisor. Consequently, regulatory changes could be affected either by continuing to use existing provisions or by creating new ones under a separate regulatory framework. The specific market context will determine which option is more practical and effective. Some supervisors (for example in Ghana, CIMA and Indonesia) indicated plans to introduce a dedicated

[64] Wiedmaier-Pfister & Ncube (forthcoming). A2ii study on mobile insurance regulation.

framework for digital insurance or m-insurance. Other supervisors will accommodate digital models within existing frameworks. In Kenya, microinsurance regulations have been developed during the past few years and the Kenyan supervisor (as with many other supervisors, including in Brazil, Chile, Costa Rica, Philippines and South Africa) considers these regulations adequate for covering m-insurance aspects. In some cases, it might need to be a combination of both – in particular in such cases as e-commerce requirements, which are based on law and beyond the supervisor's purview. For example, India plans to integrate m-insurance under e-channel regulations. In the Philippines, m-insurance is covered under e-commerce regulations for insurers, which applies to any type of sale of insurance through the internet and/or which is supported by the mobile phone as a medium.[65]

- **On- and off-site monitoring:**
  In Ghana, additional information is required at the product approval stage for m-insurance, more so than for other products. The additional information includes service level agreements between partners, distribution and branding arrangements, and the process for dispute resolution, including how uninterrupted service provision to consumers will be maintained. Information is also sought on expected claims ratios, expected expense ratios and the breakdown of premium between the insurer, TSP and MNO. Ghana is currently the only country requiring TSPs to report data to the supervisor. The performance of products is monitored using Key Performance Indicators (KPIs). Market data is recognised as vital to effective supervision and KPIs are monitored on half-yearly submissions. Market surveys are used for providing further information. Qualitative measures, such as how a product is marketed, training of sales agents and the complaints process, are also considered.[66]
- **Outsourcing of value chain functions, or outsourcing of supervisory functions to third parties in the context of digital technology:**
  In South Africa, entities in the value chain are registered according to the function and activity they perform – either as outsourced activities, such as the administrative functions fulfilled by a TSP, or as intermediary services, which would cover the role of the MNO. The insurer is held accountable for the outsourced activities and must have an outsourcing agreement in place that meets certain requirements. The insurer must justify any remuneration for outsourced functions that deviate from the internal cost of fulfilling the same function(s). In areas where the insurance supervisor does not have expertise to regulate MNOs or TSPs, it has authority to obtain such expertise from externally-based experts. These experts will be bound by the same privacy rules as the insurance supervisory authority.
- **Sandbox approach to financial sector innovation:**
  The UK's FCA coined the term "regulatory sandbox" in 2015 .There are at least 28 countries with proposed or existing regulatory sandboxes[67]. Countries with operational sandboxes include Australia, Bahrain, Canada, Hong Kong, Malaysia, the Netherlands, Singapore, Thailand, the UAE (Abu Dhabi), the UK and the USA. Such sandboxes usually apply to FinTech innovations in general and not specifically to insurance markets.

  Kenya's Capital Markets Authority (CMA) is designing a sandbox that will also follow a cohort approach, but where applications are limited to firms that want to test capital-markets-based FinTech innovations. Bank Negara, Malaysia's sandbox, is also

[65] Wiedmaier-Pfister & Ncube (forthcoming). A2ii study on mobile insurance regulation.
[66] Source: 2017 IAIS-A2ii-CIMA Mobile Insurance Conference Report. Available at: https://a2ii.org/en/event/save-date-iais-a2ii-cima-mobile-insurance-conference
[67] Jenik, I., & Lauer, K. (2017). *Regulatory sandboxes and financial inclusion.* Washington: CGAP.

targeted at specific firms – innovative FinTechs – but it accepts ongoing applications (ie it does not follow the cohort structure).

While formally established sandboxes have thus far mostly been found in the developed world, a number of regulatory authorities in the developing world are considering a sandbox or are already implementing a "sandbox-like" test-and-learn approach to accommodate pilots and innovative ventures that do not fit the existing licensing structures through, for example, letters of no objection.

The test-and-learn approach allows regulators to observe the impact of an innovation or product adaptation ("test") and to adjust their regulatory response to it, based on their improved knowledge of its effect ("learn"). Globally, financial regulators have applied test-and-learn approaches for several years. The Philippines Central Bank (Bangko Sentral ng Pilipinas) began applying a test-and-learn approach to regulating mobile money in the Philippines in 2001. The Central Banks of Kenya and Tanzania similarly employed a test-and-learn approach to enable innovation in retail electronic payment systems to allow telecommunication operators to launch mobile money services more than a decade ago[68].

4.2.2 Licensing

57. Operating an insurance business is subject to licensing, authorisation or registration.[69] Where the supervisor issues a licence, it should be able to impose additional requirements, conditions or restrictions on an applicant, where appropriate. For the use of digital technology within an inclusive insurance context, additional requirements, conditions and restrictions may be appropriate, proportionate to the complexity and risk involved in the use of digital technology. For example, the use of digital technology or outsourcing of functions to TSPs, heightens technical or operational risks and may create systemic risks, or may lead to the risk of regulatory avoidance.[70]

58. These requirements, conditions and restrictions could be about the resources available to carry out the IT related processes, the arrangement of a back-up system for business continuity purposes or arrangements to protect the confidentiality of customer data collected by third parties.

59. In applying a proportionate approach, consideration should be given to the implications for market innovation, which may arise through regulatory uncertainty and/or through the use of disproportionate regulatory requirements.

60. Insurance legislation should include a definition of those insurance activities which are subject to licensing and should prohibit unauthorised insurance activities.[71] When the legislative definition of insurance is unclear, it may be the case that new players, such as a MNO or TSP, operate without clarity and carry out insurance activities without a valid licence. If appropriate, and based on a proportionate approach, the licensing of an intermediary could be requested in the form of a lighter touch registration rather than a full licensing process as is done for insurers. Possible exceptions to certain licensing requirements can be made if any such exceptions do not encourage regulatory arbitrage or increase the risk to consumers.[72]

61. Through licensing, a jurisdiction controls which entities are allowed to conduct insurance activities within its jurisdiction. Entities should neither be allowed to present themselves nor act

[68] Di Castri & Plaitakis (2017), quoted in Beyers, N., Grey, J. & Hougaard, C., 2018. Regulating for Innovation. Cenfri report. Available at: https://cenfri.org/publications/regulating-for-innovation/.
[69] ICP 4 for insurers and Standard 18.1 for intermediaries.
[70] As outlined in Section 4.2 and Annex 2
[71] Standard 4.1
[72] Guidance 18.1.8

as licensed insurance legal entities without, or before, having been granted a licence.[73] Any market participant involved in digital inclusive insurance should clearly indicate either that it has been granted a licence to sell insurance or indicate which licensed insurer is actually the risk carrier of the contracts.

62. Before adding new classes of insurance to the list of classes already granted to the insurance legal entity, the supervisor should consider all of the existing licensing requirements, as applicable.[74] In some cases, mobile insurance or digital inclusive insurance may be considered as a new line or class of insurance, subject to supplementary licensing requirements.

63. The supervisor ensures that insurance intermediaries licensed within its jurisdiction are subject to an ongoing supervisory review.[75] This applies to MNOs or players in digital inclusive insurance when they are regarded as intermediaries. The supervisor should ensure that initial licensing conditions and ongoing regulatory requirements are maintained, after the licence has been issued.

64. The supervisor takes appropriate supervisory action against licensed insurance intermediaries, where necessary, and has the power to take action against those individuals or entities who are carrying on insurance intermediation without the necessary licence.[76]

Observed practices:

- **Licensing of entities that fulfil functions related to digital technology in the insurance value chain, but that are not conventional insurance intermediaries:**
  In some countries, TSPs or MNOs are licensed as a broker or as a corporate agent. Yet these entities, especially the TSPs, also provide other services such as technical services and product design and pricing. Knowing how and where to accommodate such functions within the licensing framework requires further consideration. In CIMA, even though TSPs are operating like brokers with an agent force, they are not yet licensed as brokers. In the Philippines, TSPs are licensed and regulated as microinsurance intermediaries (microinsurance brokers). In India, distribution channels do not need to be licensed, but they do need to be registered.
- **Imposition of additional or special licensing conditions:**
  In Zambia, the Registrar of Insurance may determine whether the applicant has the necessary qualifications, experience and standing before issuing an agent licence. The current regulatory dispensation grants discretion to the Registrar to apply this provision to the MNOs and to the TSPs registering as corporate agents, and to tailor the requirements as relevant. In Ghana, the MNOs and TSPs are licensed as corporate agents. In recognition of the expanded role they play, no commission caps are applied. In CIMA, a regulatory update is underway to complement current regulation in order to cover m-insurance and, more generally, e-insurance.[77] This framework will include conditions for the licensing of activities related to the issuing and management of electronic insurance contracts.
- **A test-and-learn approach:**
  Some supervisors have been adopting a test-and-learn approach to facilitate innovation, for example by engaging with TSPs, insurers, MNOs and mobile money payment service providers. Their plan has been to launch an m-insurance or another innovative model, even if there is no overarching regulatory approach for licensing digital insurance or m-insurance. Such an approach is facilitated by principles-based

[73] Standard 4.2
[74] Standard 4.6
[75] Standard 18.2
[76] Standard 18.7
[77] E-insurance in this context refers to "electronic insurance" and covers insurance provided through digital means. M-insurance fits within this definition.

legislation, as in Ghana, where this scope for discretion was leveraged to supervise TSPs as microinsurance agents.

- **Indirect supervision:**
  In CIMA, all operators in the value chain are represented by the insurer. CIMA supervises the insurer to make sure that all partners they work with are legally established and comply with the requirements of their home regulators. In Brazil and South Africa, the insurer is held fully responsible. Brazilian regulation requires the insurer to monitor the activities of its distribution channels, including those based on digital technology.

4.2.3 Corporate governance and risk management

65. With regards to the way in which insurance providers use digital technology, the following aspects are relevant in the area of corporate governance:

- The corporate governance framework should be adequate for the IT environment and digital business processes;
- Board Members (individually and collectively), senior management and key persons holding control functions should have adequate knowledge of technology used by the insurer in any of its business processes and a sound understanding of IT risk management;
- The financial soundness and integrity of significant owners should be assessed, including where a significant owner is a MNO or TSP;
- As part of the approval of changes in control, the financial soundness and integrity of significant owners should be assessed, including for a MNO or TSP. Subject to the necessary conditions, efforts must be made to avoid conflicts of interest.

66. Insurers should establish and implement a governance framework that provides for sound and prudent management and oversight of the insurer's business. Additionally, the governance framework should adequately recognise and protect the interests of policyholders.[78] The design and functioning of this corporate governance framework should be tailored to a business environment that relies on IT processes and digital technology.

67. The requirements described in the previous paragraphs imply, in an inclusive insurance context, that:

- There should be an adequate level of IT related competence within the Board and at management level;[79]
- Internal governance practices, internal controls and risk management should be catered to the technical processes – including safeguarding cyber security;[80]
- Significant owners should possess the necessary financial soundness and integrity.[81]

68. The supervisor will expect the insurer to send notification of any changes in Board members, senior management, key person(s) holding control functions and significant owners, and of any circumstances that may materially adversely affect the suitability of these people.[82] A notification to the supervisor would be necessary, for example, if there is a change of a strategic partnership.

69. The supervisor must takes appropriate action to resolve a situation whereby Board members, senior management and key person(s) holding a control function or significant

[78] ICP 7
[79] Standard 7.3
[80] Standards 7.3, 7.5 and 7.10; see also the Application Paper on Supervision of Insurer Cybersecurity (forthcoming)
[81] Standard 5.2
[82] Standard 5.4

owner(s), no longer meet the suitability requirements.[83] This means that the supervisor should intervene if the level of IT-related expertise is inadequate within the Board and/or management. The same applies if a MNO, as significant owner of an insurer, is not financially sound or does not possess the necessary integrity – For example, if the Board members have been involved in fraudulent or other illegal acts.

70. The supervisor shall exchange information with other authorities, such as the telecom regulator inside and outside its jurisdiction, to consider the nature of the relationship with the MNO or the TSP as a potential significant owner. [84] The supervisor should assess whether there is a conflict of interest in the business of the MNO or the TSP and that of the insurer.

71. If there is an acquisition or changes in the control of the insurer, then the insurer should give prior notice to the supervisor. Following this, the supervisor should give approval to the person(s), legal or natural, who want to acquire significant ownership or a controlling interest in an insurer.[85] When considering such an approval, the supervisor should check the nature of the relationship with the MNO as a potential significant owner to ensure that there is no conflict of interest between the business of the MNO and that of the insurer. [86]

72. Within an inclusive insurance context, the business of the insurer can be limited, in terms of number of policies, nature of the product, size of assets and investments, and number of staff. If so, the design and set up of the risk management system could be commensurate. Small organisations may not need internal control processes of a complicated nature involving multiple staff members of the organisation. For example, where the office is run by one director and one administrative member of staff, the direct visual oversight by the director becomes an important control measure. In such circumstances, there is a need to ensure that the Board is capable of effective challenge.

73. Notwithstanding the previous paragraph, it is essential that insurers are in control of their digital processes, properly manage IT-related risks (including cyber risk), as well as have adequate processes and procedures to safeguard business continuity in case of IT malfunctions. Insurers are responsible for ensuring that their IT systems, apps and relevant algorithms, function properly and lead to fair customer outcomes. Supervisors may want to carry out or arrange reviews to verify this.[87]

Observed practices:

- **Governing the relationship between the MNO and the insurer:**
  Relevant governance provisions include whether Board approval is required for entering into a m-insurance or other technology-based partnership. In Kenya, some insurers, but not all, require Board approval to venture into m-insurance. The debate in this regard relates to the broader topic of whether the Board should sign off on all new products (which could be hampered by the irregularity of Board meetings), or just on new partnerships. Another governance consideration arises when a MNO establishes an insurer or acquires an insurance licence. In Zimbabwe, the MNO Econet has obtained an insurance licence, Ecolife. South African MNO Vodacom also established a life insurance subsidiary named Vodacom Life Assurance Company.
- **Accommodating digital technology elements in a general corporate governance framework:**
  In CIMA, there are no formal corporate governance procedures for m-insurance, but the controller of the supervisor will assess the suitability of Board members as part of the licensing process. In South Africa, there are no special governance conditions in

[83] Standard 5.5
[84] Standard 5.6
[85] Standard 6.2
[86] Standards 6.6 and 6.7
[87] See the Application Paper on Supervision of Insurer Cybersecurity (forthcoming)

the case of use of digital technology; the general corporate governance code and legislative framework apply to all insurers. There is a Board notice requiring the board to have insurance expertise, but there is nothing specific about information technology.[88] In Zimbabwe, in 2011, an m-insurance partnership broke down, thereby removing the life insurance cover for a large proportion of the adult population overnight; this example emphasises the relevance of governance requirements stipulating policyholder protection mechanisms in the case of m-insurance and other technology-based partnerships.

4.2.4 Conduct of Business [89]

74. As part of their conduct of business, insurers and intermediaries need to treat customers fairly, both before a contract is entered into and through to the point at which all obligations under a contract have been satisfied.[90] The use of IT systems and digital processes has a specific impact on the engagement with customers and the extent to which they are treated fairly. It has consequences in terms of the level of disclosure and information necessary to provide the customers with a proper understanding of their commitments and entitlement, the practical operations of IT devices, and knowledge of basic safeguards against misuse by others.[91]

75. In particular and within an inclusive insurance context, the insurers should cater to:

- Treatment of customers and its policies and procedures in general;[92]
- Development and marketing of products;[93]
- Advisory services to customers;[94]
- Outsourcing of processes and activities and any potential conflicts of interests;[95]
- Protection of customer data;[96]
- Claims settlement and complaints handling;[97]
- Specific care and safeguards to protect client monies,[98] in particular in the case of m-insurance.[99]

76. In implementing a proportionate regulatory response, cognisance is needed of the business risks arising from the use of digital technology, the nature of the customer, capacity constraints and functioning of the market in the inclusive insurance market context, as well as the implications for innovation that may arise in such contexts from regulatory uncertainty or disproportionate regulatory requirements.[100]

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[88] Source: IAIS, Application Paper on Approaches to Supervising the Conduct of Intermediaries, 2015

[89] Reference is made to the Issues Paper on increasing Digitalisation in Insurance and its Potential Impact on Consumer Outcomes (November 2018) that deals more generally with conduct of business issues in respect of digitalisation.

[90] ICP 19

[91] As outlined in Section 4.2 and Annex 2, the use of technology and outsourcing of functions to technical service providers in inclusive insurance may give rise to or heighten sales risk, aggregator risk, policyholder awareness risk, payment risk, post-sale risk and data & technology risk.

[92] Standards 19.1 and 19.2

[93] Standards 19.3 and 19.4

[94] Standard 19.6

[95] Standard 19.7

[96] Standards 19.11 and 19.12

[97] Standards 19.9 and 19.10

[98] Standard 18.6; the term “client monies” includes monies received from a client for the payment of premiums to an insurer; and monies received from an insurer in respect of claims or refunded premiums for onward payment to a client.

[99] As part of m-insurance, money is transferred using mobile phones as payment of premium or claims. This could be transformed into airtime entitlement or stored in another form of currency in a mobile wallet.

[100] Refer to Section 2 for a discussion of the features of the inclusive insurance market.

The A2ii has described conduct of business risks in its report "Regulating Mobile Insurance":[101]

- Customers are not aware of having coverage;
- Customers do not understand the product;
- Low client value;
- Products may be abruptly withdrawn and have a limited life span;
- Mis-selling by TSP and/or MNO agents or sales staff.

77. Arrangements should be made to help ensure that the regulatory framework does not prevent innovation – and thereby ultimately harm the customer, instead of promoting effective access to insurance. Payment through airtime is indicated in many jurisdictions as the key factor that could significantly increase the outreach of insurance to low-income population. Also, consumers seem comfortable with this easy-to-use way of transaction. In such a context, supervisors, including central banks, may need to consider the airtime as payment means and set safeguards to avoid abuses of the policyholder. A categorical rejection of airtime as payment means could be non-productive for both insurers and consumers. Deduction of airtime payment has been key to enabling the unbanked community to access insurance products. There could however be concerns from a conduct of business perspective if a free insurance product depends on exceeding a certain threshold in the use of airtime per month. Insurers also need to take care that it is communicated and clear to the customer which deductions are made from the purchased airtime including for which services and for which levies.

78. In many cases, new players such as a MNO or a TSP may be considered as intermediaries. In some jurisdictions, intermediaries are supervised indirectly through the supervision of the insurers. In applying an indirect approach, the supervisor should consider the extent to which such an approach achieves effective supervision.

79. Irrespective of whether or not there is a system of indirect supervision of an intermediary, it is important for the insurer to make sure that reliance can be placed upon an intermediary to perform processes on its behalf. For example, insurers are expected to obtain appropriate documentation regarding their customers to demonstrate that appropriate customer due diligence and/or fact-finding procedures have been carried out. Insurers should be assessed on the adequacy of the processes carried out and the documentation obtained, including in cases when the insurer relies upon intermediaries to perform this work and supply the documentation required.

Observed practices:

- **Conduct of business requirements specifically for the use of digital technology:** In Ghana, market conduct rules are planned specifically for m-insurance to cover: scope of rules and prohibitions, approval of commission, mobile insurance arrangements, mobile insurance contracts, policy summary and claims payment, and interpretation and final provision.[102] Likewise, the framework being developed in CIMA will include a number of conduct of business related aspects, including: a definition for m-insurance and e-insurance, partnership agreement formats, provisions relating to the protection of insured persons and beneficiaries of electronic insurance contracts, and supervision (including reporting requirements), control and sanctions in the case of m-insurance and e-insurance. In India, the Insurance Regulatory and Development Authority of India (IRDA) is drafting e-commerce regulations that will focus on the regulation of sales through channels defined as e-channels, including mobile and

[101] Section 3.3 of the report Regulating Mobile Insurance, Insurance business via mobile phones: regulatory challenges and emerging approaches, A2ii (April 2018) (https://a2ii.org/sites/default/files/reports/2018_05_02_mobile_insurance_regulation_web.pdf)
[102] Source: https://a2ii.org/sites/default/files/events/mic_report_engl_web.pdf

internet as mediums. The focus is on the regulation of various conduct of business activities (including client data, disclosure and sales processes) to ensure consumer protection. There is also an allowance for an e-initiative for an online, real-time grievance management system. Costa Rica is developing a regulatory framework for mass insurance and microinsurance that will include technology-based distribution channels and will specify a range of conduct of business requirements, including cross-selling practices, disclosure of information to customers, remuneration of distribution channels, and a simplified complaint system.[103]

- **Use of airtime payments:**
  M-insurance often relies on airtime conversion for premium payments, sometimes as the only means of payment. In some instances, this may give rise to complications in terms of the payments framework set by the central bank, as has been the case in Cameroon and Senegal. Potential safeguards where airtime payments are used include notification sent to customers on how much airtime was or will be used for premium deductions. The acceptance of virtual money, especially airtime, has been noted as necessary for market building, yet can add to the effective cost of the insurance for the consumer.[104]

  BIMA sends monthly SMSs to customers to confirm the amount paid for the month and their corresponding coverage. This keeps customers updated regularly without spamming. It noted that overly frequent contact with customers can quickly become a nuisance to them eg sending a notification each day when a micro-payment is being deducted from customers' airtime credit.

- **Digital contracting:**
  Where insurance is provided on an online or mobile platform, unconventional contracting procedures are required, entailing electronic signatures and electronic confirmations (eg sms) rather than wet signatures and hard copy receipts. From a conduct of business perspective, the regulation of electronic or digital contracting is important to ensure that consumer recourse and disclosure mechanisms are in place to avoid mis-selling and consumer abuse. Often, digital signatures are allowed in a country's general e-commerce regulatory framework. Where there is no such general framework, dedicated provisions may be required. In Guatemala, a study is underway to consider the regulation of electronic policy delivery. The planned regulatory framework will establish the procedures that insurers must follow and other obligations that must be accomplished, like confidentiality, consent of the acquirer, integrity, and electronic signature.[105]

- **Protection of customer data:**
  Supervisors are increasingly considering effective ways of ensuring consumer protection and proper conduct of business with regard to the acquisition, use and safeguarding of consumer data. For example, Ghana has a data protection regulatory framework and an authority has been set up to oversee data protection.[106] The data protection topic is particularly pertinent in light of the rise of big data and the tapping of alternative data sources (such as social media or transaction patterns) by financial service providers. For example, options for opt-in versus opt-out in terms of data sharing can be confusing for customers in the inclusive insurance context.

[103] Source: Wiedmaier-Pfister & Ncube. Forthcoming study to be published by the A2ii of a survey of Mobile Insurance Regulation conducted in 2017.
[104] Source: https://a2ii.org/sites/default/files/events/mic_report_engl_web.pdf
[105] Source: Wiedmaier-Pfister & Ncube, ibid.
[106] Source: Ghana Data Protection Commission, 2012. Available at: https://www.dataprotection.org.gh/data-protection-principles

Rwanda data protection legislation holds that no data may be hosted outside of the country. This has implications for TSPs which, to reduce costs, use cloud-based systems.

4.2.5 Financial integrity

80. On the one hand, the use of digital technology may increase the vulnerability of insurers and customers to fraud and money laundering or terrorist financing. Insurers and intermediaries are required to take effective measures to address these risks.[107] On the other hand, digital technology also allows the implementation of risk controls, which in turn can provide a more secured and safeguarded way of handling virtual cash compared to direct dealings with people, paper and liquid assets.

81. The supervisor requires an insurance intermediary who handles client monies to have sufficient safeguards in place to protect these funds.[108] In the course of carrying out its business, an insurance intermediary may receive monies from a client for the payment of premiums to an insurer or might receive monies from an insurer in respect of claims or refunded premiums for onward payment to a client. Some jurisdictions may have specific legal requirements with respect to the cash flows where monies are transferred via an intermediary from the customer to the insurer and vice versa, including determining whether the customer or the insurer is at risk in respect of such funds.

82. The intermediary should be expected to have adequate policies and procedures in place for the safeguarding of funds, in the interest of its customers.

83. Where the insurance intermediary acts as agent for the insurer, these funds may be considered "monies held at the risk of insurers". In these circumstances the insurer is responsible for such funds held by agents on its behalf.

84. In an inclusive insurance context, in particular for m-insurance, the management of client monies requires specific attention from a consumer protection perspective. Mobile devices of the customers or the servers used by the MNOs may register the entitlements and obligations in either monetary terms or non-monetary values, such as entitlement to airtime. The latter should be treated similarly to the monetary values, as is further elaborated below.

85. In setting requirements for insurance intermediaries in respect of safeguarding client monies within an inclusive insurance context, the supervisor may wish to consider recommending, amongst other things, that the following are adequately covered in insurance intermediaries' client money policies and procedures:

- the use of separate client accounts clearly distinguishable from the intermediary's own bank accounts, such that monies for individual or groups of clients are not mixed with other funds of the intermediary;
- ensuring that client accounts are held with licensed banks within the jurisdiction, or within other specified jurisdictions;
- disallowing monies, other than client monies, within the account, except in specific circumstances such as to achieve or maintain a minimum balance, to receive interest, or to receive commission due to the intermediary;
- ensuring that monies are paid into the account promptly;
- ensuring that adequate financial systems and controls are maintained, including authorisation of payments from the account;
- ensuring that adequate books and records are maintained and subject to audit;
- ensuring that reconciliations are performed on a regular basis and reviewed;

[107] ICP 21 and ICP 22
[108] Standard 18.6

- ensuring that discrepancies on the account are followed up promptly and resolved satisfactorily;
- ensuring, for each client, that payments from a client account are not made before sufficient monies paid into the account have cleared, thus ensuring that any balance held in respect of each client is not negative;
- the treatment of interest.

86. In the interests of safeguarding clients' money, it will be important that client accounts cannot be used to reimburse creditors of the insurance intermediary in the event of its bankruptcy. However, with respect to the recommendation included in the previous paragraph, consideration might be given to the specific features of airtime payments and deductions in a digital MNO model. A MNO provides airtime top-up for different uses. Deductions for insurance are made at some point after the customer's money is converted into airtime through the top-up. Full premiums are often collected in instalments during a given month before being allocated to an insurance cover amount for the following month.

87. The supervisor may wish to ensure that, where insurance intermediaries operate client accounts, the terms and conditions of such accounts are disclosed to their customers, including whether funds held in such accounts are at the client's risk or at the insurer's risk.

88. The insurer should take suitable precautions to ensure that claims fraud and intermediary fraud are prevented. As the typical inclusive insurance customer is particularly vulnerable, the insurer's sales staff, intermediaries and any third parties involved in the distribution of insurance, such as aggregators, should be aware of particular risks and ways to avoid these. The use of digital technology may increase the vulnerability of insurers and customers to fraud and money laundering or terrorist financing. Insurers and intermediaries are required to take effective measures to address these risks.[109]

89. The supervisor regularly reviews the effectiveness of the measures insurers and intermediaries and the supervisor itself are taking to deter, prevent, detect, report and remedy fraud as well as on anti-money laundering and combating the financing of terrorism (AML/CFT). The supervisor should take any necessary action to improve effectiveness.[110]

90. In respect of AML/CFT, special procedures are needed to carry out the identification and verification of customers when using mobile phone and other non-face to face insurance services. As mentioned in the Issues Paper[111] many inclusive insurance target customers will not have the requisite documents and could thus be denied acceptance. The 2013 FATF Guidance on Anti-Money Laundering and Terrorist Financing Measures and Financial Inclusion[112] requires a risk-based approach with adjusted requirements for lower risk customers and transactions, including low value life insurance policies and products aimed at promoting financial inclusion. "In such circumstances, and provided there has been an adequate analysis of the risk by the country or by the financial institution, it could be reasonable for a country to allow its financial institutions to apply simplified Customer Due Diligence (CDD) measures." [113] It

[109] ICP 21 and ICP 22
[110] Standard 21.4 and Standard 22.4
[111] Paragraph 112 Issues Paper on Conduct of Business in Inclusive Insurance
[112] Available at: http://www.fatf-gafi.org/media/fatf/documents/reports/AML_CFT_Measures_and_Financial_Inclusion_2013.pdf; see also the FATF position on FinTech and RegTech (http://www.fatf-gafi.org/publications/fatfgeneral/documents/fatf-position-fintech-regtech.html)
[113] Specifically, the FATF recommendations only apply to life and investment-related insurance. Furthermore, the recommendations make it clear that there are circumstances where the risk of money laundering or terrorist financing may be lower. Instances where this may be the case include life insurance policies where the premiums is less than USD or EUR 1,000 per annum (or a single premium of less than USD/EUR 2,500), as well as "[financial] products or services that provide appropriately defined and limited services to certain types of customers, so as to increase access for financial inclusion purposes". Source: FATF, 2012. Interpretative Note to FATF Recommendation 10. Available at: http://www.fatf-gafi.org/media/fatf/documents/recommendations/pdfs/FATF_Recommendations.pdf

should also be noted that RegTech innovations are being developed that can help overcome barriers in this area.

Observed practices:

- **Fraud:**
  Digital technology is introducing novel approaches to preventing or managing fraud. For example, in India, insurer IFFCO TOKIO offers a livestock insurance product that injects radio frequency identification device (RFID) chips under the skin of the animal and uses sensor technology to help the insurer to prevent and manage fraud. However, the use of digital technology may also enhance the risk of fraud, for example through cybercrime whereby personal identification numbers (PINs) on online platforms or SIM Cards in m-insurance may be compromised.
- **AML/CFT:**
  A number of countries have implemented a KYC exemption or streamlined requirements for certain types of low-risk insurance. For example: the Philippines stipulate relaxed KYC requirements for microinsurance in compliance with the country's Anti-Money Laundering legislation.[114]

The Application Paper on Regulation and Supervision Supporting Inclusive Insurance Markets confirms that inclusive insurance products can generally be regarded as low risk, as: inclusive insurance tends to entail low-premium, low-benefit products with frequent rather than one-off premiums. There is therefore a mismatch between such products and the "transaction needs" of money launderers. Furthermore, the types of risks normally included in inclusive insurance are not typically targeted for money laundering.

[114] Source: paragraph 115 IAIS, 2015. Issues Paper on Conduct of Business in Inclusive Insurance.

Annex 1 - IAIS Supervisory and Supporting Papers in respect of Inclusive Insurance

Issues in Regulation and Supervision of Microinsurance (June 2007)
This Issues Paper aims at outlining salient features of microinsurance in general, and of its regulation and supervision as an input for high-level expert discussion among regulators, supervisors and other stakeholders involved in the provision of insurance services for lower-income segments.

Issues Paper on the Regulation and Supervision of Mutuals, Cooperatives and other Community-based Organisations in increasing access to Insurance Markets (October 2010)
As follow-up from the Issues in Regulation and Supervision of Microinsurance (June 2007), this paper discusses the key elements of such organisations that are relevant to considering the approach to their regulation and supervision. This paper is superseded by the Application Paper on Mutuals, Cooperatives and other Community-based Organisations in increasing access to Insurance Markets, published in 2017.

Application Paper on Regulation and Supervision supporting Inclusive Insurance Markets (October 2012)
This paper provides guidance on the application of regulation and supervision in ways that help support inclusive insurance markets. It provides examples of how relevant principles and standards can be practically applied. Where enhancing inclusive insurance markets is a policy objective, this document elaborates on guidance for supervisors. It is directed at the objectives of implementing the ICPs in a manner that protects policyholders, contributes to local and global financial stability, and enhances inclusive insurance markets.

Paper on Issues in Regulation and Supervision of Microtakāful (Islamic Microinsurance) (November 2015)
This paper was developed as a joint initiative with the Islamic Financial Services Board. Its main objective is to identify the practices and models used for offering Microtakāful products, and the challenges and potential issues arising from Microtakāful transactions for regulation and supervision.

Issues Paper on Conduct of Business in Inclusive Insurance (November 2015)
The objective of this paper is to identify the issues in respect of conduct of business in inclusive insurance markets that affect the extent to which customers are treated fairly, from before a contract is entered into through to the point at which all obligations under a contract have been satisfied.

Application Paper on the Regulation and Supervision of Mutuals, Cooperatives and Community-based Organisations in increasing access to Insurance Markets (September 2017)
The objective of this paper is to provide guidance on ways in which the ICPs could be applied in a proportionate manner recognising the specific features of Mutuals, Cooperatives and Community-based Organisations. It aims to provide guidance on removing unnecessary barriers created by disproportionate regulation and supervision, while protecting policyholders. In addition, it intends to raise awareness among policymakers, regulators and supervisors of the role these types of organisations could play in enhancing access to insurance.

Application Paper on Product Oversight in Inclusive Insurance (November 2017)
The objective of this paper is to provide guidance to inform supervisors, policymakers and market participants of ways to implement and apply the ICPs relevant to product oversight in inclusive insurance. The paper defines “product oversight” as different sets of regulations, supervisory tools and processes used by supervisors to ensure the fair treatment of customers

by insurers when designing, advertising, selling and exercising other rights and obligations arising out of insurance products.

Issues Paper on Index-based Insurances particularly in Inclusive Insurance Markets (June 2018)
Index-based insurance is increasingly looked at as a means to manage weather and catastrophic events, support food security and enhance access to insurance. This Issues Paper provides background on this product, describes practices and actual examples and identifies related regulatory and supervisory issues and challenges.

Annex 2 - Overview of risks manifest in digital technology applications

Prudential risks:

Risk	Definition	Manifestation in digital inclusive insurance
Technical risk[115]	The risk that the insurance company incurs a loss or a lower profit than expected through the miscalculation of premiums and technical provisions, thereby undermining the commercial sustainability of the product.[116]	In m-insurance, particularly for loyalty-based products, the risk arises that products may be under-priced because the pricing assumes that both paid and reported claims incidence would be significantly lower than actuarially correct mortality and morbidity rates. Insurers may also under-price the risk component due to the strong bargaining power of the MNO.[117] The potential for scale in m-insurance could strain small insurers' balance sheets without effective reinsurance. Digital aggregator platforms that avoid the definition of insurance and have no licensed insurer as a partner generate technical risk considerations. For example, as part of the shared economy, P2P insurance may raise questions of adverse and self-selection, pricing and reserving adequacy, and the ability to cope with catastrophic events. Badly implemented technology solutions might lead to failures and losses may trigger liability claims by customers and investors.
Operational risk	The risk that inadequate or failed internal systems, staff, procedures or controls lead to financial loss.[118]	In digital insurance, a long value chain with a multitude of partners involved can lead to operational risk, especially if insurance is sold by staff that does not have an insurance background. IT-related failures can include loss of transaction data, misreporting to a partner, payments getting lost, leak of confidential client data, reconciliation errors with partners, etc.[119] M-insurance and other digital technology applications require unconventional and innovative contracting procedures, such as the utilisation of electronic signatures (for example via sms) during the digital self-registration process or smart contracting. All of this can lead to operational risk.
Compliance risk[120]	This category comprises three kinds of risk: *Regulatory uncertainty risk*: The risk of non-compliance due to the uncertainty in law. This risk may	*Regulatory uncertainty risk*: The pace of innovation in digital insurance means that it is difficult for regulation to keep up, giving rise to regulatory uncertainty risk. *Regulatory backlash risk*: In m-insurance and other digital models an incident such as a change of

[115] Also referred to as insurance risk.
[116] Ghana National Insurance Comission, 2015. Mobile Insurance and Risk Framework in Ghana. Available at: https://a2ii.org/sites/default/files/reports/2015_mobile_insurance_risk_assessment_ghana.pdf
[117] Ghana National Insurance Comission, 2015
[118] Wiedmaier-Pfister & Ncube, 2017
[119] Wiedmaier-Pfister & Ncube, 2017
[120] Can also be described as legal or regulatory risk.

Risk	Definition	Manifestation in digital inclusive insurance
	cause market players not to launch innovative ideas or business models. *Regulatory backlash risk*: The risk that the supervisor imposes stringent regulatory requirements that limit the development of particular insurance models. *Regulatory avoidance risk*: The risk of new business models operating in grey areas that provide scope for avoidance of compliance.	business practices or termination of a partnership may fuel perceptions that digital models or functionality are inherently more risky than traditional cover, leading to regulatory backlash. *Regulatory avoidance risk*: Much of the use of technology in m-insurance and other technology-based models entails new players fulfilling outsourced functions previously done by insurers. Sometimes, as in P2P insurance, these players may try to stay outside of the regulatory environment. They may position themselves as outside of the insurance regulator's jurisdiction, as they do not carry risk or provide any consumer advice or services directly, but merely provide the algorithm and platform to aggregate consumers to provide services amongst themselves or pool their own risk. Thus new players may push the boundaries of the definition of "insurance" or "intermediary services" to avoid the need for regulatory compliance.
Systemic risk	The risk of collapse or destabilisation of the broader insurance market due to a negative fallout in one particular insurer or partnership.	Market-wide risk may arise if a negative experience with a large-scale m-insurance or other technology-based model undermines trust in the market.

Source: adapted from the risk framework as outlined in the A2ii Regulating Mobile Insurance briefing note (Wiedmaier-Pfister & Ncube, 2017)*, and the BMZ Responsible Mobile Insurance Discussion Paper* (Wiedmaier-Pfister & Leach, 2015)*, which in turn draws on the risk classification introduced by the A2ii cross-country synthesis report on microinsurance business models and their regulatory implications* (A2ii, 2014)*. Further insights were drawn from A2ii's Consultation Call report on Data protection challenges in mobile insurance (A2ii, forthcoming) and GIZ's mobile insurance risk assessment in Ghana* (Ghana National Insurance Comission, 2015)*. Additional digital technology-related risks are largely drawn from a risk overview compiled by Swiss Re* (Swiss Re, 2016).[121]

Conduct of business risks:

Risk	Definition	Manifestation in digital inclusive insurance
Sales risk	The risk that the sales person is not well trained and so may misinterpret the product to the client, or that the client is sold a product that s/he does not need. Mis-selling occurs for various reasons, such as i) if subscribers were "forcibly" sold a product, ii) if the product was not clearly explained, or iii) if the subscribers were given false expectations about the product.[122]	Sales risk arises in m-insurance and other technology-based partnerships where the sales staff are the agents of the aggregator, rather than the insurer, which means that incentives may be misaligned, with an interest to sell the insurance to support the underlying business. High turnover of mobile money agents can add to this risk. Sales risk also arises where digital aggregator platforms or digital brokers are used without explicit human interaction with clients.

[121] Another risk that arises in the context of digital technology, but is not included in this table, is basis risk. This risk is particular to index insurance and refers to the imperfect correlation between a customer's potential loss experience and the behaviour of the underlying index on which the insurance payout is based. It is possible that individuals suffer losses specific to them but fail to receive a payout because the index does not trigger. On the other hand, lucky individuals may receive indemnity payments that surpass the value of their losses (IBLI, 2012. How does index-based insurance work? Available at: https://ibli.ilri.org/faqs/). As index insurance is considered as a dedicated topic by the IAIS, this risk is not discussed further for the purpose of this paper.

[122] (Ghana National Insurance Comission, 2015).

Risk	Definition	Manifestation in digital inclusive insurance
		Many of the new models are moving away from a physical person doing sales in favour of robo-advisors or algorithms that advise on the risk profile and suggest an outcome. There is increasing talk of the so-called "black box algorithms", where even developers cannot predict how algorithms will perform or whether the outcomes suggested will be "appropriate" given the client's context or needs. This challenges the traditional definitions of advice and means that no individual person can be held liable, but that the risk of mis-selling has to be managed at an institutional level.
Aggregator risk	The risk of reduced value to the client or inappropriate products being sold to clients when an insurer accesses the aggregated client base of a non-insurance third party to sell its products. Factors to be considered are disproportionate bargaining power and the dominant position the aggregator may hold, disproportionate costs due to the distribution structure; and where products are designed to mitigate the risk of the aggregator as opposed to being in the interests of the client. In addition, the legal relationship between insurer, aggregator and client may not be clear and pricing may not be transparent.	Aggregator risk is relevant in m-insurance models as well as other models using an aggregator (be it a digital aggregator platform, as in P2P insurance, or a physical party, as in index-based insurance). In m-insurance, aggregator risk arises in a partnership structure where the MNO serves as master policyholder or agent. Without clear legal agreements and accountability, there exists a power imbalance between the MNO and insurers or TSPs. [123] MNOs have a massive client base, so in their effort to incentivise insurers or TSP's to piggyback on their sales structure or to utilise their branding, the end client might be disadvantaged. For example, products may be designed to mitigate the risk of the aggregator and may not be in the interests of the client. [124]
Policyholder awareness risk	The risk that the insured is not aware that s/he has insurance cover and is therefore unlikely to lodge a claim, should the risk event occur.	Policyholder awareness risk arises in m-insurance and index-based insurance where there is auto-enrolment, that is, where the person covered is not paying the premium directly and is automatically covered by insurance by virtue of some other relationship, such as being a mobile network subscriber. This risk may also arise in smart contracts and is exacerbated by low consumer financial literacy.
Payment risk	The risk that the premium will not reach the insurer, that the premium will not be paid on the due date or that the cost of collecting the premium is disproportionate. Payment risk means that there is a heightened possibility that premiums are not regularly received by the insurer, leading to policy lapses.	Payment risk is generated where a payment system provider or platform is used, including when premiums are converted from airtime, and there are connectivity challenges or other technological glitches that impact on the speed or reliability of payments. Should this happen regularly, it could damage the reputation of the insurance industry. Also relevant would be if the costs of the payment platform are disproportionate to the premium level, resulting

[123] Leach & Ncube, 2014
[124] GIZ, 2015

Risk	Definition	Manifestation in digital inclusive insurance
		in low claims ratios and, hence, eroded client value.
Post-sale risk	The risk that clients face unreasonable barriers to maintain their cover, change between products, make enquiries, submit claims, receive benefits or make complaints. It therefore refers to the risk of poor service and the potential disincentive for insurers to be efficient in claims processing and service provision.	In m-insurance, the footprint and client relationships of the aggregator are leveraged for post-sales servicing purposes, implying at least in principle that post-sale risk should be reduced. However, limited upfront disclosure may lead to claims process confusion among policyholders. Technological innovations, like blockchain technologies that automatically lodge claims, are aimed at more streamlined customer service. This could be problematic if the automation is faulty, resulting in reputation damage for the industry.
Data and technology risk	(a) Business data risk: The risk that the underwriters' operational systems do not provide correct, complete and up to date data on how the business is managed; (b) Data protection risk: The risk that client data is lost or not kept confidential; (c) Cyber risks: The risk of cyber criminals compromising data protection, or of digital identity fraud; (d) Data manipulation risk: The risk that the client manipulates data to impact on premiums or claims; (e) Questionable data risk: The promise of big data and digital analytics is better risk assessment and more tailor-made products and coverages. But the resulting drive to generate ever more and ever larger datasets may lead to codification and "datification" of behaviours and natural phenomena that may ultimately produce questionable data; (f) Data information risk: The risk that data is transmitted via sensors and an action is triggered via smart contracting without the client realising which data is being transmitted.	(a) This risk applies to both m-insurance and other digital technology models; (b) The increasing free-flow of data transfer highlights important consumer privacy and data protection questions as this processing may not be done transparently, or may be without the informed consent of consumers; (c) Cybercrime, espionage and sabotage have grown substantially. Immature or badly protected technology platforms are considerably exposed to cyber risks. Furthermore, as the number of social media accounts grows, so does the risk of identity fraud. Insurance that relies on personal data, such as health or life insurance, is strongly exposed to manipulation of digital identities. Reliance on blockchain technology might increase the exposure to cyber risks; [125] (d) Data integrity may become a problem for insurance companies collecting data on consumers, eg via wearables, as there may be an incentive to manipulate input in order to benefit from rate discounts or to escape from regulation. Intrusion into sensors and apps and the manipulation of data will be amplified with the adoption of the IoT. This data manipulation might lead to higher insurance fraud; [126] (e) Where questionable data is used for insurance modelling, risks might be mispriced or claims unexpected; (f) Especially in models using blockchain or other smart contracting it is important that clients know which kind of information is collected about them and how the smart contracting is set up.

[125] Swiss Re, 2016
[126] Swiss Re, 2016

Risk	Definition	Manifestation in digital inclusive insurance
Exclusion risk	The risk that certain prospective customers are unfairly excluded from insurance cover.	There are concerns that using "big data" to select which risks to cover could lead to certain individuals being excluded if they are considered too risky. This ability for more differentiated risk selection, which is arguably the biggest benefit of big data for traditional insurance, would go against the grain of inclusive insurance, which is meant to protect the previously unserved or underserved. M-insurance mostly relies on group underwriting, which reduces exclusion risk.

Source: adapted from the risk framework as outlined in the A2ii Regulating Mobile Insurance briefing note (Wiedmaier-Pfister & Ncube, 2017)*, and the BMZ Responsible Mobile Insurance Discussion Paper* (Wiedmaier-Pfister & Leach, 2015)*, which in turn draws on the risk classification introduced by the A2ii cross-country synthesis report on microinsurance business models and their regulatory implications* (A2ii, 2014)*. Further insights were drawn from A2ii's Consultation Call report on Data protection challenges in mobile insurance (A2ii, forthcoming) and GIZ's mobile insurance risk assessment in Ghana* (Ghana National Insurance Comission, 2015)*. Additional digital technology-related risks are largely drawn from a risk overview compiled by Swiss Re* (Swiss Re, 2016)*.*[127]

[127] Another risk that arises in the context of digital technology but is not included in this table, is basis risk. This risk is particular to index insurance and refers to the imperfect correlation between a customer's potential loss experience and the behaviour of the underlying index on which the insurance payout is based. It is possible that individuals suffer losses specific to them but fail to receive a payout because the index does not trigger. On the other hand, lucky individuals may receive indemnity payments that surpass the value of their losses (IBLI, 2012. How does index-based insurance work? Available at: https://ibli.ilri.org/faqs/). As index insurance is considered as a dedicated topic by the IAIS, this risk is not discussed further for the purpose of this paper.

Annex 3 - Concentration level in Telecoms sector for some developing countries (GSMA data, December 2016)

Country	MNO	Mobile Subscribers	Prepaid Market Share	Prepaid Market Share	HHI
Benin	MTN	3 533 000	34%	34	
Benin	Glo	1 772 000	17%	17	
Benin	Moov	3 719 000	36%	36	
Benin	BBCom	1 122 000	11%	11	
Benin	Libercom	281 000	3%	3	
				101	**2 871**
Burkina Faso	Telmob	5 468 490	43%	43	
Burkina Faso	Airtel	4 911 961	39%	39	
Burkina Faso	Telecel Faso	2 322 000	18%	18	
				100	**3 694**
Cameroon	YooMee	24 485	0%	0	
Cameroon	Nexttel	400 000	2%	2	
Cameroon	Orange	6 237 000	38%	38	
Cameroon	MTN	9 658 000	59%	59	
				99	**4 929**
Gabon	Libertis	1 182 680	40%	40	
Gabon	Moov	404 692	14%	14	
Gabon	Azur	217 000	7%	7	
Gabon	Airtel	1 149 304	38%	38	
				99	**3 289**
Ivory Coast	YooMee	8 897	0%	0	
Ivory Coast	Orange	8 896 000	40%	40	
Ivory Coast	MTN	8 016 000	36%	36	
Ivory Coast	Moov	3 606 000	16%	16	
Ivory Coast	Koz	892 272	4%	4	
Ivory Coast	GreenN	849 565	4%	4	
Ivory Coast	Café Mobile	27 691	0%	0	
				100	**3 184**
Mali	Orange	12 826 000	55%	55	
Mali	Sotelma-Malitel	10 672 700	45%	45	
				100	**5 050**
Niger	Sonitel	325 750	7%	7	
Niger	Orange	1 665 000	35%	35	
Niger	Moov	699 000	14%	14	
Niger	Airtel	2 111 706	44%	44	
				100	**3 406**
Nigeria	Visafone	2 170 000	2%	2	
Nigeria	Smile	240 000	0%	0	
Nigeria	MTN	59 893 000	43%	43	
Nigeria	Glo Mobile	28 219 000	20%	20	
Nigeria	Etisalat	21 103 000	15%	15	
Nigeria	Airtel	27 556 544	20%	20	
				100	**2 878**
Senegal	Expresso	2 904 000	21%	21	
Senegal	Orange	8 097 000	58%	58	
Senegal	Tigo	3 017 000	22%	22	
				101	**4 289**
Sierra Leone	Africell	2 900 000	71%	71	
Sierra Leone	Airtel	1 064 301	26%	26	
Sierra Leone	Sierratel	111 710	3%	3	
				100	**5 726**
Togo	Moov	1 848 000	44%	44	
Togo	Togocel	2 290 000	56%	56	
				100	**5 072**