Can the digitalization of microinsurance make all the difference?

Assessing the growth potential of digital microinsurance

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Abbreviations

A2ii	Access to Insurance Initiative
ANM	Agent Network Managers
CGAP	Consultative Group to Assist the Poor
DFS	Digital Financial Services
DMI	Digital Microinsurance
FMIA	First Microinsurance Agency (Pakistan)
FSP	Financial Services for the Poor
GIS	Geographic Information System
IAIS	International Association of Insurance Supervisors
IN	Intelligent Network
m-insurance	Mobile Insurance
MFS	Mobile Financial Services
MNO	Mobile Network Operator
NIC	National Insurance Corporation (Tanzania)
OTC	Over The Counter
POS	Point of Sale Device(s)
PSI	Population Services International
SSB	Standard Setting Body
TPA	Third Party Administrator
TSP	Technical Service Provider
VAS	Value Added Service

1. Introduction

Microinsurance or 'inclusive insurance' receives very different reactions from financial inclusion advocates depending on whom one talks to. Some believe that microinsurance has reached the tipping point whilst others claim that the business case is still not proven. Over the last decade, there have indeed been many false starts and failures. First Micro Insurance Agency (FMIA), a microinsurance intermediary in Pakistan, was closed down in 2011;[2] MicroEnsure, a global microinsurance intermediary, showed significant losses and even had to pull out of several countries;[3] the ILO's Impact Insurance Facility initially failed to show that it could support the rapid growth of valuable and profitable products; and the high expectations around weather based index insurance for smallholder farmers were not met. By 2013, there was a growing loss of hope in unsubsidised retail index based weather insurance products.[4]

In addition, Mastercard[5], Fundamo (the payments company bought by Visa), and the Better than Cash Alliance purported a view that insurance was a last order financial product and a 'nice to have' which was only relevant once payments, savings, and credit were in place. All of this begged the question, "Why should donors support this Cinderella[6] of Financial Inclusion when there were so many other priorities in the market?", and would the use of digital mechanisms support its take off and viability?

The focus of this paper is on digital microinsurance (use of technology in microinsurance) and mobile insurance (insurance sold through and with mobile network operators) in particular. It aims to provide an overview of recent developments in this sector, and to assess whether digital microinsurance (DMI) can provide the growth injection that the microinsurance market needs to manage the risk of the poor (and the institutions that serve them).

Several factors account for the lack of a clear sustainable business model to date. Building a profitable insurance business takes time. A founder of an insurance business worth $1bn argues that it takes at least 10 years to build a sustainable insurance business. Mario Wilhelm[7] from Swiss Re's view is that it takes 7 years to build a life assurance business. This is especially true of microinsurance which targets a market that is fraught with distribution challenges and is characterized by clients with low, irregular income and limited experience with insurance. Second, microinsurance has typically been viewed very narrowly.[8] For instance, it has focused on products that have been retailed to low-income clients with the aim of creating an insurance culture, rather than focusing on addressing the needs and risks

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[2]Khan, Farrukh H. "Fail better: First microfinance agency proves the point of 'failure.'" Pioneer Post. May 2013. <http://www.pioneerspost.com/news/20130527/fail-better-first-microinsurance-agency-proves-the-point-of-failure>

[3]Koven, Richard and Michael, McCord. "Microinsurance-only Multinational Intermediaries: The early years." MILK Brief #19. January 2013. <http://www.microinsurancecentre.org/resources/documents/business-case-for-microinsurance/milk-brief-19-microinsurance-only-multinational-intermediaries-the-early-years.html>

[4]FSD Kenya. "Review of FSD's Index Based Weather Insurance Initiatives." July 2013. <http://www.fsdkenya.org/pdf_documents/13-08-12_IBWI_Project_Review_full_report.pdf>

[5]Jain, Amit and Gidget Hall. "A New Perspective on Bill Payment—a Demand-Based Path to Financial Inclusion." MasterCard Advisors *Global Insights*. September 2012.<http://insights.mastercard.com/wp-content/uploads/2012/09/a_new_perspective_on_bill_payment_a_demand-based_path_to_financial_inclusion.pdf>

[6]Leach, J. 2013. Microinsurance: Can the Cinderella of Financial Inclusion Join the Global Ball? (Online). Available. http://cfi-blog.org/2013/09/04/microinsurance-can-the-cinderella-of-financial-inclusion-join-the-global-ball/. (Accessed October 2014).

[7] Interview with Mario Wilhelm, Swiss Re

[8]Leach, J. 2013. Microinsurance: Can the Cinderella of Financial Inclusion Join the Global Ball? (Online). Available. http://cfi-blog.org/2013/09/04/microinsurance-can-the-cinderella-of-financial-inclusion-join-the-global-ball/. (Accessed October 2014).

of the *institutions* that serve them. Whilst market-based language has been used in a number of donor supported microinsurance initiatives, the target segment have often been in hard to reach areas or regions that are arguably beyond the reach of the market or in the *supra market zone*[9] and will therefore require long-term subsidy regardless of product feasibility. In addition, microinsurance has largely focused on complex and expensive products, such as in-patient/out-patient cover, which have not been proven to be financially sustainable to offer to this segment. As a result, these products have contributed to the downfall of institutions such as FMIA and undermined MicroEnsure's growth trajectory at one time. Going forward, providers may need to be willing to test products that may not meet all the needs or risks of this segment but are 'good enough' – at least until one has the technology in place to obtain improved data or cost savings. Covering the portfolio risk of institutions serving the low-income segment, or offering embedded or loyalty models could support a shift to scale which could enhance the sustainability of microinsurance business models. Another key factor has been the prevailing regulatory environments in many countries, characterised either by the lack of regulation and policy supporting the development of inclusive insurance markets or cumbersome regulations that may prevent digital sign up models (for example, regulations requiring physical or 'wet' signatures on policy documents) or use of low cost sales agent models.

Nonetheless, though the last eight years were a time of testing, innovating, and hard learning, they were also a period of significant growth. The Microinsurance Network estimates that the global microinsurance market has grown from 78m clients in 2007 to over 263m clients in 2013. Furthermore, 95 microinsurance initiatives have recently been identified as having reached scale (with greater than 500,000 clients in Africa and greater than 1m in Asia and Latin America).[10] Many of these initiatives received no donor funding or support. On the regulatory side, the International Association of Insurance Supervisors (IAIS) is now widely recognised as the leading global standard setting body (SSB) for microinsurance. And more recently, two microinsurance intermediaries, MicroEnsure and Bima[11], have reached over 10m clients, and have attracted significant private sector and development finance institution funding. Both MicroEnsure and BIMA's growth has been significant and recent – mainly powered by mobile network operators' investment in microinsurance.

[9] See Porteous D, 2002, The access frontier as an approach and tool in making markets work for the poor, http://www.finmark.org.za/publication/the-access-frontier-as-an-approach-and-tool-in-making-markets-work-for-the-poor
[10] Thom, Mia, et al. "Scale: Thinking Big." ILO Microinsurance Innovation Facility Paper No. 30. March 2014. <http://www.microinsurancefacility.org/sites/default/files/mp30%20v3.pdf>
[11] See MicroEnsure and Bima's presentations at the 10th International Microinsurance Conference in Mexico. http://www.munichre-foundation.org/home/Microinsurance/2014IMC.html

2. Overview of Digital Financial Services

2.1 Introducing Digital Financial Services and the potential for scale in microinsurance

Digital Financial Services (DFS) are increasingly seen as a way to address the high transaction costs impeding scale and access in financial services. At the centre of the discussion has been the focus on digitising payments in order to provide the 'rails' to store, transfer, secure and build financial value. This all requires efficient payment mechanisms which has been much of the focus of donors. Furthermore, DFS promises to play a key role in cheaply and effortlessly connecting clients and financial service providers (FSPs) through digital interfaces to facilitate the sale process and provide direct and convenient access to clients, as shown in Figure 1 below.

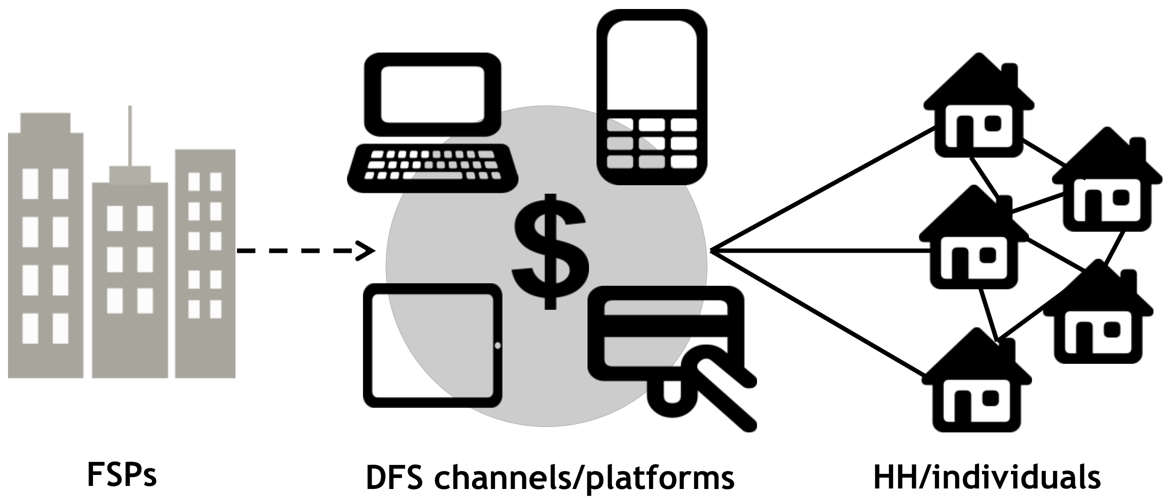

Figure 1. Digital Financial Services
Source: Author's own analysis

As part of this focus on digital financial inclusion, there is growing interest in how *digitization* could impact microinsurance, whether through distribution, scale, collections, or improving the efficiency of the value chain. The term 'Digital Microinsurance' (DMI) is used to encompass the broader role of digital mechanisms to support the delivery of microinsurance. DMI is generally broader and more encompassing than the term mobile microinsurance (MMI [12] or m-insurance) which places a greater focus on the mobile device.

> **Digital microinsurance:**
> Insurance utilising digital mechanisms to improve its outreach and delivery
>
> **Mobile microinsurance:**
> Described by GSMA (2012) and CGAP (2014) as any microinsurance product that leverages mobile technology.
>
> Mobile microinsurance has also been described as **m-insurance** (Leach 2010).

[12] CGAP. "The Emerging Global Landscape of Mobile Microinsurance." CGAP Brief. January 2014. <http://www.cgap.org/sites/default/files/Brief-The-Emerging-Global-Landscape-of-Mobile-Microinsurance-Jan-2014.pdf>

2.2 The rise of Digital Microinsurance

Although the first example of a DMI model showed up in 1997 in India with Bharti's 'Telcassurance,' it was not until 2006-2008 (see Figure **2**) that other models started to appear across the developing world—led primarily by India, South Africa, Thailand and the Philippines. By 2010 however, the DMI marketplace began heating up with new products cropping up across Africa, from Ghana to Kenya. This trend would further increase in subsequent years with 13 models launched in 2012, 16 in 2013 and more than 16 planned for 2014.[13]

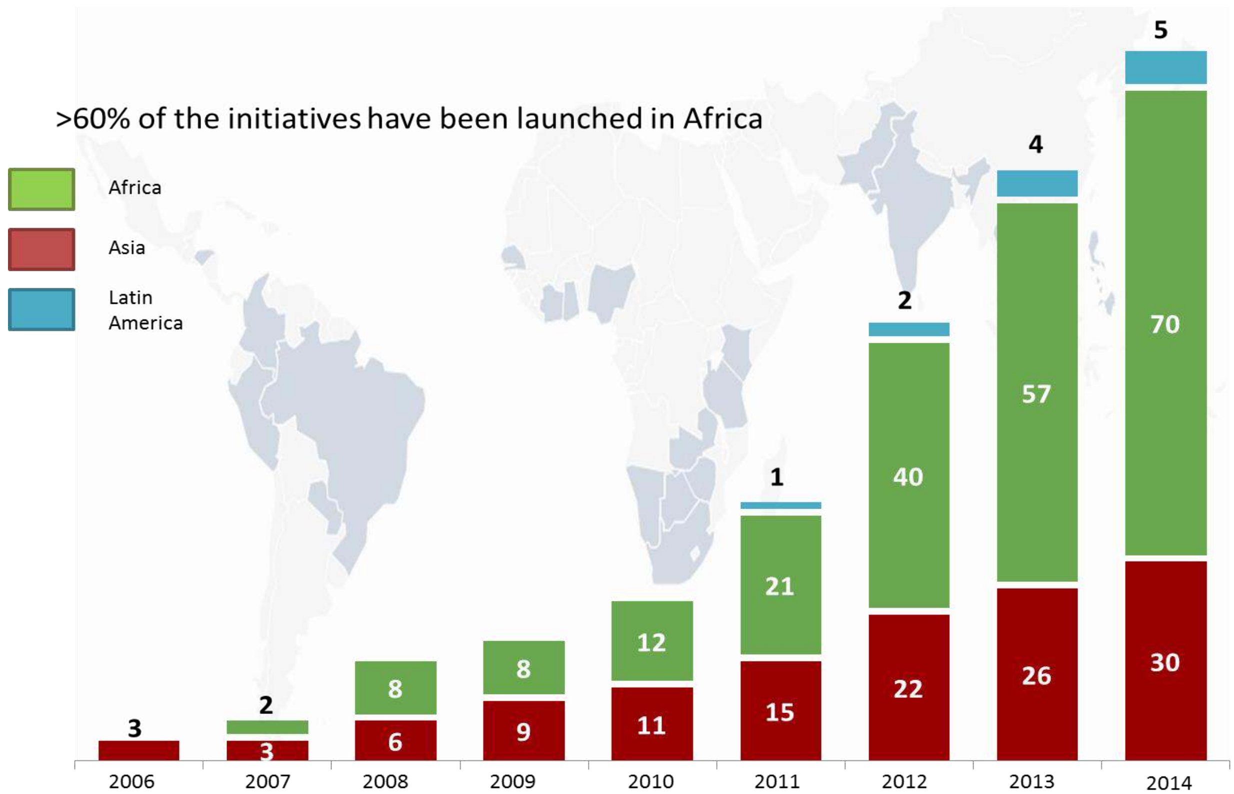

Figure 2. DMI goes global
Source: BFA

While new initiatives continue to launch, Figure 2 above provides an idea of the growth of these models. Interestingly the bulk of DMI initiatives across the world (more than 60%) have been launched in Africa—far ahead of Latin America and Asia. This may partly be driven by the greater challenges Africa has with scale[14] that has driven insurers into using technology and alternative distribution models to cut down operating costs; and the growing need for MNOs to identify new revenue lines and mechanisms to manage their slowing growth.

[13] Data from an internal BFA database and GSMA's state of the 2013 mobile financial services industry
[14] Africa has smaller less densely populated countries which increases operating costs compared to Asia and Latin America.

> **Strategic DMI:**
> Strategic DMI is when the MNO actively drives DMI as a strategic imperative to meet financial and non-financial (adjacent) benefits. The MNO invests their own resources across the value chain from marketing, client acquisition, premium payments, etc.
>
> **Transactional DMI:**
> Transactional DMI is when the MNO acts as a 'dumb pipe' supporting bill payment activities. MNOs will typically provide limited or no additional support or marketing.
>
> *Source: Adapted from Leach & Ncube (2014b)*

Whilst many of these DMI models have yet to take off at scale, we have seen the emergence of 'sprinters' (see Figure 6 on page 20) - initiatives that have achieved significant scale often in short time periods. In many instances these 'sprinters' have achieved success due to easier and cheaper access to the market, enabling regulatory environments, technical support and expertise, and MNOs supporting them through launching loyalty based models.
Sprinters also share the common characteristic of having strong strategic support from a mobile network operator which allows the use of its brand, footprint, and marketing heft. We describe this as '**Strategic DMI**'. On the other hand, many of the slow growing models are primarily focused on using the mobile channel to achieve certain efficiencies in payments and as an interface. We describe this as '**Transactional DMI**'.[15] As we focus on the drivers of scale in microinsurance, our analysis will focus on Strategic DMI.

2.3 Key players in the DMI value chain: who does what?

While DMI value chains and stakeholders are unique to each particular product and partnership, it is possible to identify four main players: the aggregator which is typically the mobile network operator (MNO), insurer (underwriter), technical service provider (TSP), and the client. Each player fills a key role across the value chain in ensuring a seamless experience as shown in Table 1 and Figure 3.

Aggregator e.g. MNO	Plays a critical role in providing the mobile platform that facilitates access to the client base and supports premium payment. MNOs play a key role in driving positive market discovery as the client gets to experience the benefits of insurance. Depending on the nature of the partnership, the MNO may also play other roles beyond facilitating premium payment including client registration, addressing queries and supporting claims payments. It is important to differentiate the MNO's role under strategic and transactional DMI. Under strategic DMI – the MNO drives the provision of the product, whereas with transactional DMI the MNO simply facilitates access to a payment mechanism, for example.
Insurer	The insurer plays an underwriting function including pricing, claims administration, and other related functions, though some of these roles may be allocated to a technical service provider (see below).
Technical service provider (TSP)	TSPs serve as an intermediary linking the client, MNO and the insurer by providing the necessary technology platform, expertise and advice (See Table 2). This is

[15] Leach, Jeremy and Sandisiwe Ncube. "Managing risk while facilitating innovation: The case of m-insurance in Tanzania." Regulation of m-insurances series: case study 2. FinMark Trust. June 2014. <http://cenfri.org/documents/microinsurance /2014/ 27062014_Rep_Tanzania%20m-insurance_FINAL%20DRAFT.pdf>

	especially typical of DMI where both the insurer and MNO may have limited technical knowledge and experience with rolling out such products. Depending on country regulations, the TSP may be licensed as an administrator, corporate agent, broker or surveyor or may not even be licensed at all.
Client	The client is the end user of the product. However the agreement may be structured as a master policy which means the client of the insurer / TSP would be the aggregator (MNO in this case) with the end client being a 'subsidiary policyholder'

Table 1. Stakeholders in the DMI value chain
Source: Author's own

INSURER	ADMINISTRATOR / TSP			INTERMEDIATION / AGGREGATOR			CLIENT
Underwriting risks and product design	Product sign up	Premium collection	Claims processing	Sales	Marketing	Consumer recourse	End user
Model 1: Ecolife Zimbabwe - loyalty							
First Mutual Life (with Trustco – product design)	Econet - sms 31111 with name and ID of main member and beneficiary	Econet - premium to First Mutual Life. Royalty of $1.20 per client per month to **Trustco**.	First Mutual Life	Econet via mobile platform	**Econet** in partnership with First Mutual Life	1. Econet call centre 2. First Mutual Life offices	**Econet subscriber**
All supported by Trustco platform							
Model 2: Mi Life Ghana - mobile money							
UT Life, **Hollard Insurance** (reinsurer and 'owner' of initiative) Compulsory reinsurance.	MTN Mobile Money - agents, Mobile, Outbound. MFS support menu and integration into wallet	MTN Mobile Money – **MFS Africa** creates 'debit order' off Visa's Fundamo platform	MicroEnsure	**MTN**	MTN Mobile Money	1.MTN call centre 2.UT Life 3. MFS Africa (IT)	**MTN Mobile Money subscriber**
All supported by MFS Africa							

Figure 3. DMI value chain
Source: Leach et al, 2014b.

Recently there have been a number of TSPs that have emerged in the DMI market. Tellez (2012) highlights these TSPs as niche players who are ultimately "emerging as specialists in bridging the gap between insurance companies and mobile network operators" in facilitating the development and deployment of DMI. Table 2 below provides an overview of some of the key players.

	BIMA (Milvik)	MicroEnsure	MFS Africa	Trustco Mobile
Established by	Kinnevik, which owns Millicon (Tigo)	Opportunity International	Dare Okoudjou	Trustco Holdings
Other Investors	Leapfrog	Omidyar, International Finance Corporation, Sanlam, Axa, Telenor	Private Investors	N/a
$ invested	$7m in 2012 and $22m in 2014	Est $7m in 2012 and a further estimated $10m in 2014	$2m in 2011 and seeking a further $10m	Not available
# Clients	10m	15m	Not reported. Est. <100,000	Not reported. Est. <100,000
Country deployments	12	13	Est. 5	1 (exited Zimbabwe)

Table 2: DMI Technical Service Providers
Source: Leach J & Ncube S, 2013, Author's analysis

2.4 Product take off

> Successful take up of DMI depends on (a) products speaking to the risk profile and needs of the market, (b) use of the strategic DMI model, and (c) the products were appropriate for the DMI channel which typically supports a lower touch model.

A number of factors influence the potential for insurance. Take up is dependent on the complexity of the product, the cultural acceptance of the risk (for example, funeral insurance is a well understood product in South Africa whereas in Mozambique and Tanzania discussing funerals is considered taboo), and the particular challenge of the sales process and administration. While various DMI products have been launched, only life and hospital cash plan DMI products have achieved scale.[16] This has been due to three contributing factors – (a) the products spoke to the risk profile and needs of the market, (b) the products were provided under a strategic DMI model, and (c) the products were appropriate for the DMI channel which typically supports a lower touch model.

The following provides an overview of the type of products we are seeing in the market.

2.4.1 Life

Just like their non-mobile counterparts, although DMI products span a wide range of coverage types, life products are the most prevalent and most successful. Life insurance accounts for 75% of all DMI products launched on the market.[17] These products have low premium values

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[16] Having 500 000 policies/lives covered in Africa and 1m in Asia and Latin America.
[17] Levin, P, (2014). *Promising starts in mobile insurance*. (Online). Available. http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2014/02/Promising-Starts-in-Mobile-Microinsurance.pdf (Accessed August 2014).

and are relatively simple in structure; they have straightforward enrolment that is often via a mobile device and claims are often paid directly into mobile money wallets.

Box 1. Overview of an m-Insurance Model

Tigo family care insurance is a 30-day life microinsurance product that was developed by Bima and Vanguard insurance company; and provided by Tigo Ghana. As Tigo's aim was to stimulate its declining Average Revenue Per User (ARPU), the insurance cover was linked to the amount of airtime used. It was positioned as a family care product to address concerns about the death taboo. It started out as a loyalty programme and after 12 months a 'freemium' Xtra-Life product was introduced.[18] The product managed to achieve 500 000 registered members in 25 months and more than 400 000 of these converted to the 'freemium' option. Through the product, Tigo has attained greater ARPU, new revenue stream (from freemium option) and customer stickiness. It is considered to be the most successful microinsurance initiative in Ghana (Bima, n.d.). *Success*: High

2.4.2 Health

Although health is often one of the most pressing and costly risks affecting lower-income populations around the world, the complexity of designing health insurance products (particularly inpatient / outpatient cover) that are valuable to the client, simple to administer, and financially sustainable makes offering these products a challenge. Outside of hospital cash plans (a simple form of health cover where a cash payout is paid based on number of days in hospital), there has not been any other health microinsurance model identified from the MILK research or any other reviewed research that has been successful in terms of scale and profitability. However, whilst it is early days, it should be noted that there are some promising non-state health financing models that may be emerging:

- **Savings –** Rather than operating as an insurance model, a number of products facilitate savings for health costs often via a mobile wallet or vouchers. Changamka's outpatient and maternity products in Kenya are one of the more successful mHealth savings products offering a dedicated savings wallet which is integrated with Safaricom's widely used M-Pesa mobile money product. However, the products have yet to reach scale.

- **Payment –**The mobile platform can also be used simply to facilitate health payments. For example, BPI Globe BanKO – a mobile phone-based, microfinance-focused savings bank in Philippines – is used to collect health insurance premiums under the government-owned PhilHealth program. Similarly, other products provide means for individuals to contribute co-payments to insurance policies over the mobile phone.

[18] The 'freemium model', where the clients can upgrade their loyalty (often marketed as 'free' to the consumer) product to a higher value paid product (essentially free → premium = free-mium)

Box 2. Overview of Three m-Health Financing Models

Changamka provides an outpatient and maternity care savings card that allows the bearer to top-up (via MPesa or hospital terminals) and save any amount towards pre-determined price-contracted healthcare packages for outpatient and maternity care at participating hospitals. The outpatient card is distributed via retailer or select supermarkets or other distribution points while the maternity card is distributed via participating hospitals (Changamka, 2012). *Success*: Limited

Safaricom partnered with Britam (insurer), Changamka Microhealth (TSP) and Population Services International (PSI) to launch Linda Jamii, a healthcare insurance plan. The approximately $140 per year premium cover provides clients with access to medical cover including in-patient cover, out-patient cover, maternity cover and a hospitalization income replacement benefit of about $6 per day. The premiums are payable in installments via Safaricom's mobile money platform M-Pesa. *Success*: Limited

Tigo introduced a life and hospitalization cover insurance available via mobile phone in Tanzania. Customers can select the desired level of coverage and make payments through airtime or TigoPesa. Customers can choose between six levels of cover based on personal preferences. The hospital cash plan will cover clients for up to 30 nights via a nightly lump sum cash payout system (or TigoPesa payout) irrespective of the ailment suffered. Prices start at TZS 750 ($50 cents) per month for the Bati package. *Success*: Medium

2.4.3 Non-life and composite DMI

Providers have also begun offering composite[19] and non-life DMI products, such as personal accident cover and motor vehicle insurance. There are limited examples, if any, of non-life and composite DMI models that have achieved scale. This may change with time as the market appreciates the value proposition. In many countries, motor vehicle insurance is compulsory but is characterised as more of a ‘tax,’ with no expectation of any claims payout. Even then, the shift to digital payment models has been slow.

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[19] Insurance products that combine cover for different risks into one product (Microinsurance Facility, 2013).

Box 3. Telesure Zimbabwe – example of a composite DMI

Telecel, a Zimbabwean MNO has partnered with Zimnat Lion (an insurer) to provide its subscribers Telesure funeral insurance cover bundled with a hospital cash plan. Under the partnership, Telecel provides the mobile platform facilitating premium collection while Zimnat Lion underwrites and administers the product. Premiums start at $0.45 per month for minimum funeral cover of $250 and hospital cash plan of $20 a day for 30 days (Gambanga, 2014).

This product is an example of a new breed of 'composite' DMI products, or products that cover multiple risks, that are currently emerging on the market. However success has so far been limited as many have used the transactional DMI model. *Success*: Limited

Source: The Chronicle, 2014

2.5 Sequencing for success: rolling out successful models

As DMI products have continued to evolve, especially over the last five years, a number of models have emerged as can be seen in below:

Loyalty products
Loyalty based DMI model: Subscribers receive "free insurance" or, more correctly, insurance at no direct cost to the consumer[20]. The cover is underwritten by a registered insurer. Cover levels are linked to a behaviour that the distributor wishes to achieve such as increased use of airtime, mobile money transactions or savings in mobile wallets. In such cases, clients can for instance be notified via a text message about how much cover they have qualified for each month. There are a number of examples, which include Econet Zimbabwe, Telenor Pakistan, Airtel Zambia, Tigo Ghana and Tanzania as well as the first versions of Tigo Bima Tanzania and Vodacom Faraja Bima Tanzania. In many of these instances, loyalty based DMI products have achieved significant scale. For example, Ecolife Zimbabwe reached 20% of the Zimbabwean adult population in approximately 7 months. *Success*: High

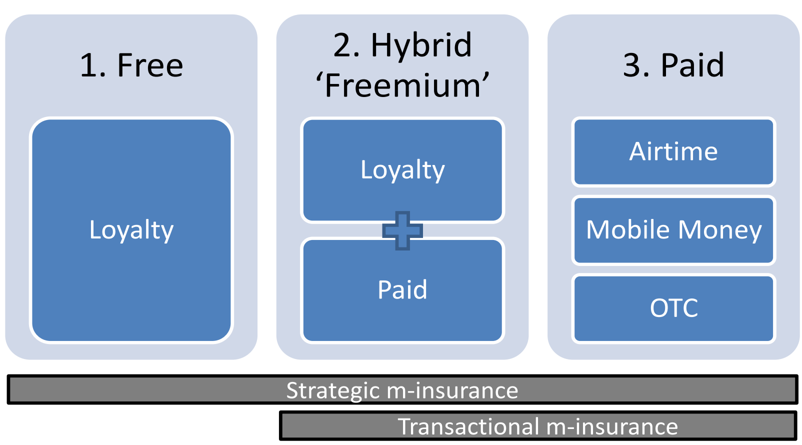

Figure 4 m-Insurance models
Source: Adapted from Leach and Ncube, 2014b

[20] The MNO pays the premium on behalf of the consumer. However, the consumer will of course pay for the product indirectly as the cost of the insurance would need to be paid from revenue that MNO earns.

Paid products
Airtime deduction DMI model. The airtime deduction model is provided to the subscriber on a stand-alone voluntary basis. Premium payment is through the subscriber's airtime balance which allows the MNO to reach their whole subscriber base. For instance, Tigo uses an automatic, pre-approved deduction of a client's airtime balance to cover the premium cost. Other examples include Zong in Pakistan and MTN in Zambia and Nigeria, Airtel in Nigeria as well as Tigo Bima Tanzania. The most successful example has been the sprinters MTN and Airtel Nigeria where the regulator reports they are signing up 100,000 a month between them. *Success*: Limited

Mobile money DMI model. The mobile money model is provided to the mobile money subscriber on a stand-alone voluntary basis, where clients are able to pay their premium through their mobile wallets. Examples include MTN and Hollard's Mi-Life product in Ghana as well as Vodacom's new Faraja Bima Tanzania. MTN mi-Life was the first of the mobile money products, launched in 2010, and has struggled to meet scale – to a large extent due to the slow growth of mobile money in Ghana. Growth could follow if backers continue to invest in marketing and sales campaigns for mobile money. *Success*: None observed

OTC DMI model. This approach uses funds outside of the mobile device to pay for insurance premiums. Some examples of payment collection include cash paid through MNO agents, scratch cards sold at retailers, and mobile apps which link to bank debits. Examples include: MobiSure Kenya; Zong Pakistan; Cover2go South Africa; BIMA/Dialog Sri Lanka. *Success*: None observed

Debit order. Banks debit the premiums from the client's bank account. This has mainly been seen in South Africa with some exceptions such as Equity Bank in Kenya which offers debit orders on the back of its new mobile virtual network operator (MVNO) license, Equitel. *Success*: Mostly limited to South Africa

Hybrid products
Freemium models: The 'freemium model', where the clients can upgrade their loyalty (often marketed as 'free' to the consumer) product to a higher value paid product (essentially free → premium = free-mium) is also seeing some success in driving uptake. In the example of TIGO Ghana, CGAP reports they converted 55% of clients from the loyalty product to the paid model and in subsequent discussions they report that upward of 90% have converted to a paid product (CGAP, 2013). We have seen similar figures in other models, with the lowest conversion ratio being 26% -- which is still very high compared with market benchmarks; a typical conversion of a contact to a sale varies from 2% to 16%.[21] In this approach, the loyalty models mentioned above are used as the 'market maker' to drive market discovery by the clients so they get a 'taster' of insurance. The MNO or aggregator then upsells a voluntary paid product, which allows them to increase their cover. Examples include Tigo Family Care Ghana, Tigo Bima Senegal, Tigo Bima Tanzania and Vodacom Faraja Bima Tanzania. The free option may well fall away leaving the paid model in place as happened in Tanzania with Vodacom's Faraja Bima product. *Success*: Promising

[21] This means that between 2% to 16% of people contacted will buy a product.

Loyalty based DMI models have achieved the greatest success as evidenced by the scale achieved. Whilst this may not be so surprising since they come at no cost to the consumer, a large part of the success has been due to the strategic nature of these models – with the MNO driving or investing in the provision of the product beyond facilitating access and premium payments. The question remains how long the MNO will pay for the loyalty cover before it pursues better alternatives to reward their clients and drive desired behaviour. Where loyalty schemes have been launched, there may therefore be limited time to convert the loyalty to the paid models to grow a sustainable insurance business.

Out of all models, the mobile money DMI models have had the weakest growth, partly due to low activity of mobile money players outside of the few fast growing mobile money countries such as Kenya and Tanzania.

2.6 Sales models

DMI models may also be differentiated according to various sales models. A wide range of sales models in the market vary based on the intensity of the sales process. These models are bifurcated between low touch (digital self-registration, non-advice) and high touch (‘uncertified sales agent’ and ‘certified insurance agents’) as represented in Table 3 below.

Low touch models are typically more reliant on the digital interface (in this case mobile phones) to conduct the sales process and complete the transaction. On the other hand, high touch models are reliant on physical interaction, that is, insurance or MNO personnel and staff (including agents) complete the insurance transaction. Each sales model has its advantages and disadvantages. The main concern with low touch sales models is the potential for consumer misunderstanding and abuse. On the other hand – while high touch models provide clients with face-to-face support – such models are understandably costly to implement.

	Sales model		Examples
Low touch	Digital self-registration	Clients register themselves via the digital platform (mobile phone menu) This models has had some success with the loyalty models – especially Ecolife and Airtel Zambia	Ecolife (Econet and First Mutual Life) – Zimbabwe Farijika (Zantel and NIC) – Tanzania Safari Njema (African Life and Airtel)- Tanzania Airtel (Ghana, Zambia, Burkina Faso, Nigeria) Telenor (Pakistan) *Success*: Positive (especially EcoLife, Airtel Zambia and others) although some mixed results
	Face to face	Clients can opt to register for the product via digital self-registration or face-to-face with sales support e.g. MNO outlets and branch staff. Due to regulatory requirements, the provision of advice is not permitted Nirvoy Life has had some success with this model	Faraja Bima (Vodacom) – Tanzania Nirvoy Life (Grameenphone) - Bangladesh *Success*: positive but typically slower growth

	Uncertified sales agent	Clients can register with sales agents that have been trained by a certified agent but do not have the formal insurance qualification Tigo has had some success but at a reportedly high cost	Tigo Bima (Tigo and Golden Crescent) – Tanzania Success: high
High touch	Certified insurance agent	Clients can register with the assistance of qualified insurance staff Limited success has been achieved with this model so far	Motor vehicle insurance cover – (Reliance Insurance and Airtel) – Tanzania Success: low

Table 3. Various DMI sales models
Source: Leach and Ncube, 2014.

3. Understanding DMI's value proposition

What could be considered the 'growth injection which digital microinsurance can provide to grow the market'? In the aim of driving insurance to scale, DMI can provide a strong value proposition that allows for insurance products to reach groups which previously have lacked access. "Given the high levels of poverty and strong penetration of mobile phones into low-income markets" it is clear that the vast majority will fall within the target group of DMI clients (ILO, 2012). Depending on whether the initiative is treated as strategic or transactional, DMI offers a strong value proposition for expanding microinsurance.

Massive potential for scale: The potential for scaled distribution is second to none. Simply tapping into the broad base of MNO customers is reason enough, but DMI providers can also utilize the broad base of MNO agents to distribute products. For example in Kenya, insurance providers have 6,000 registered insurance agents, but Mpesa alone has over 70,000 mobile money agents. MicroEnsure served 200,000 clients in Africa in 2011, a figure which increased to over 3m by 2013 and 15m in late 2014. In early 2014, approximately 2m clients received coverage immediately with MicroEnsure's launch of a new loyalty life insurance product in collaboration with Airtel.

Synergy: The growth of MNOs has been declining as markets reach saturation and the average revenue per user (ARPU) from voice calls is on the decline. MNOs are thus diversifying operations and seeking other sources of revenue such as value added services, including strategic DMI. Also, by leveraging the existing distribution network and the strength of MNO brands, MNOs offer a relatively low-cost distribution channel for insurance products. In some cases, agents can handle sales, client education, communication, claims handling, and pay-out functions. At the same time, insurance can also help to improve agent viability by increasing the number of transactions that they process.

Lower distribution costs: Distribution costs can be limited through embedding the insurance offering in the menu on the SIM/cell phone or as insurers leverage the MNO footprint. Many insurance products are distributed wholly via the phone—registration, premium payment, administration, and claims payment. In other cases where MNO agents play a role in distribution, these agents can provide multiple service offerings through a singular channel, reducing the per product distribution costs.

Effective premium payment/ collection mechanism: Premium collection conducted via mobile channels is far less costly to the insurance company. Collection is addressed entirely through mobile money, airtime (although use of airtime deduction models often suffer VAT and high commission costs), or voucher models, or in the instance of loyalty or freemium models, by the MNO directly. Furthermore, these collection channels allow customers to spread their premium payments over more favourable time frames, including monthly, weekly, or daily payments, and offer simplified front- and back-end payment dynamics.

Reduced churn: Digital communication through SMS makes it easier for insurers to communicate with clients, send reminders, and so on, decreasing the likelihood of churn.

Improved risk management: One of the major challenges faced by insurance practitioners when designing and pricing new products is the lack of accurate historical data. The real-time rendering of mobile transaction data, GIS tracking and GSM usage can dramatically improve this process by allowing insurers to create products that are appropriately suited to the client's risk profile. In addition to leveraging MNO data, creating networks of health providers through digital systems will improve client choice and address fraudulent claims. In regards to health insurance, the robust data collected can also provide the impetus to shift from fee-for-service that is often lumpy and leads to unaffordable products for the low-income market to a more favourable reimbursement models (like per case, per day, or capitation), which requires good data and analytics on health insurance usage patterns.

Shared administration: Shared administration on a mobile platform reduces the cost of administration for all parties across the value chain.

Leveraging the MNO brand to overcome market distrust: A plethora of market research alludes to the low-income market's distrust of insurance. Insurers can leverage the MNO's brand (which tends to carry greater trust and recognition than financial service providers' brands) and reach to overcome this distrust and expand reach and access to insurance. Research in Ghana by Hollard and MicroEnsure found that 70% of those surveyed would prefer to buy insurance from an MNO than an insurer[22]. This creates conditions for positive market discovery (where clients have a positive experience with insurance resulting in reinforced use) and increased client value through direct, convenient and accessible insurance.

Enabler for financial inclusion: In general, and as noted previously, the dominant thinking around insurance is that it is often a last order financial need. However, with the right conditions, DMI can be an enabler of market development rather than a late-stage financial product.
Figure 5. provides evidence that insurance can drive uptake of mobile money, and increase savings and transactions of other products, ultimately building a market for insurance through enabling individuals to become active financial service users. This indicates that insurance should be considered an early-stage initiative rather than a late stage add-on.

Enabler for market development: DMI can also drive profitability and provide a new source of recurring revenue. It can enable and support other key segments of the economy, such as agriculture and health, and it furthermore can support the roll out of services infrastructure through improved risk management. See
Figure 5. below.

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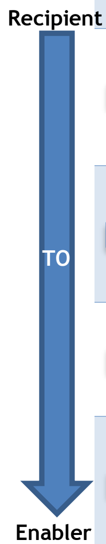
[22] Information provided by one of the authors, Jeremy Leach, who led the Hollard team.

As explained above, Figure 5 shows DMI as an enabler for financial inclusion and market development.



	Pre DMI Client Status	Outcome	Example
Stage 1	Not a client of MNO	Client adopts MNO's service as a direct results of insurance offering	Telenor Pakistan saw a 14% increase in subscribers as a result of Easypaisa launch
Stage 2	Existing client of MNO, but not a client of mobile money	Insurance plays a role in the adoption of mobile money platform	40% of MiLife Ghana clients were new to MTN mobile money
Stage 3	Existing mobile money client but inactive	Insurance incentivizes clients to increase activity	Tigo Ghana reported reduction of churn vs. non-insurance clients
Stage 4	Existing mobile money client but low value	Insurance helps drive client average revenue per user (ARPU)	Unibank's overall deposits increased by 19% in the 5 months after the embedded product was launched.
Stage 5	Active user of mobile money	Insurance helps increase transactions and revenue streams	55% of Tigo Ghana's clients opt for the paid "freemium" product.

Figure 5. DMI as an enabler for financial inclusion and market development
Source: Leach et al, 2014

4. Promising starts – DMI sprinters

Most DMI products, having been recently launched, are still struggling or are in the pilot phase. Nevertheless there are a number of sprinters (see Figure 6 below) that have achieved exceptional scale in a short period. While the bulk of sprinters are characterised as loyalty DMI models there is evidence that voluntary 'paid' DMI models can be successful (Airtel Nigeria and MTN Nigeria) even without the 'freemium' approach that was used successfully by Tigo Ghana.

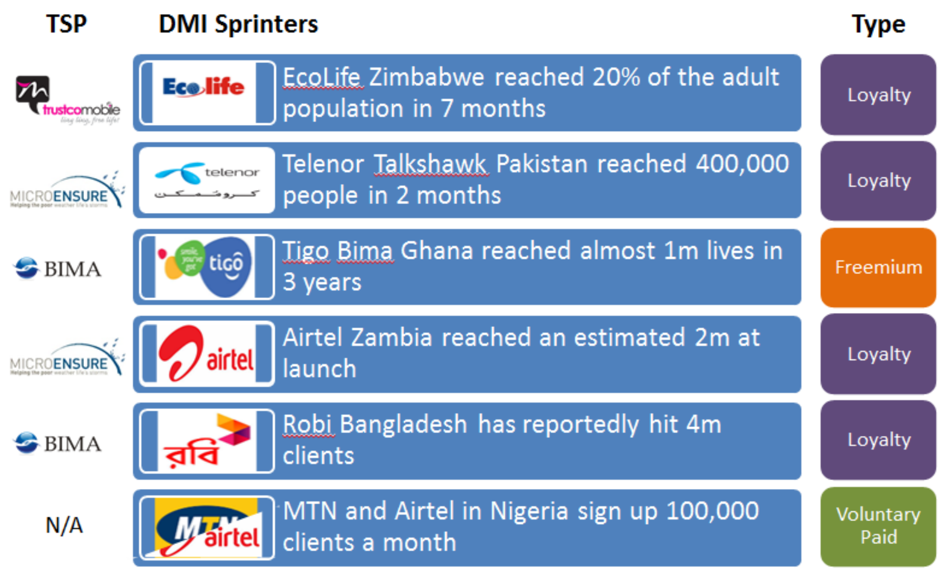


Figure 6: DMI Sprinters
Source: Author

The remarkable growth of these sprinters has been due to a combination of support from the MNO brand, strategic focus, and investment in marketing and client education, amongst other reasons discussed in
Table 4 below. Many of them have been supported by the new Technical Service Providers (TSPs) such as BIMA, MicroEnsure, and Trustco Mobile, who provide technical support and systems to support their take off. All of them are what we classify as 'strategic DMI'.

Table 4 below identifies the drivers behind the m-insurance sprinters and the factors that need to be in place to drive scale in DMI products.

Driver	Explanation	Example (where applicable)
Captive large market and strong brand	Availability of an easily accessible and 'insurance ready' market makes it easier to achieve scale, backed by the largest brands in the market. In particular, successful models have been strategic DMI models where the MNO heavily invests in driving uptake	MNOs typically have a large client base and a strong brand. In Sub-Saharan Africa alone, mobile penetration is estimated to be greater than 60% (Deloitte and GSMA, 2012). Furthermore, research in Ghana by Hollard and MicroEnsure showed that 70% of those surveyed would prefer to buy insurance from an MNO than an

		insurer.
Simplified product design	Clients are able to engage easily with the products due to simplified processes e.g. simplified registration and claims processing	MicroEnsure and BIMA focus heavily on simplified products which drives product understanding.
Multiple sales channels combined with a targeted sales approach	Utilisation of multiple channels (SMS, USSD, agents, call centres etc) suited to the targeted segments provides greater access, and drives up sales.	Telenor Pakistan utilised a) agent force; b) outbound call centre; and c) partnerships with retailers. They also identified the call centre to be the best channel for targeting clients with the higher ARPU.
Focus on both quality and quantity	In as much as quantity is important, providing quality ensures growth especially in a market which is still building an insurance culture – most important is to build a culture of paying claims well, fast and publicly.	Bima (Tigo Kiiray) monitored all agent sales and utilised fixed salary to remunerate agents.
Offering multiple types of cover to subscriber base	A variety of products attracts a wider array of customers.	Telenor Pakistan offered clients both a loyalty and mobile wallet m-insurance offering in order to maximise reach to its entire subscriber base.
Suitable payment mechanisms offered	The payment mechanism should support the market – loyalty models can reach immediate scale (acting as a market maker) and with airtime can reach the whole base. Mobile money and debit orders often only reach a small/er proportion	Loyalty models have reached tremendous scale from Zimbabwe, Zambia and others. Airtime models have been successful in Nigeria but mobile money models have not seen any real scale as yet.
Mix Digital Sales with Low Touch Sales	Digital models can help drive take up but there needs to be a mix with low touch (human) models as well.	BIMA believes strongly in the need for a low touch model using agents in stores to drive quality uptake.
Enabling regulatory environment	Regulatory support is necessary for innovation while also protecting the market.	The regulators in Pakistan and Ghana have supported these models.

Table 4. Success drivers behind mobile sprinters (and scale in m-insurance)
Source: Author's own analysis

With the correct ingredients and the appropriate environment, strategic DMI can provide the growth injection necessary to see DMI achieve scale and build the market. Sprinters also highlight the importance of sequencing, which is critical in supporting take-off at scale.

5. Challenges with DMI

Having determined that only loyalty based, life and hospital cash DMI products have achieved scale, a conclusion can be reached that despite all the potential benefits DMI can provide to MNOs, insurers, and clients, these products do not automatically achieve success or scale. There is no one-size-fits-all model, DMIs are faced by a number of challenges that inhibit them from achieving scale. This are addressed in sections 5.10 and 5.2 below.

5.1 Demand-side and supply-side challenges

Table 5 below examines the challenges that inhibit uptake and provision of DMIs hence contribution to why these products struggle to achieve.

	Challenges
Customer Activation	Effective promotion for complex mHealth financing remains a challenge, so there are limited models at scale. Product understanding remains low, creating roadblocks to activation on non-loyalty models.
Distribution	Alignment of interest between partners can be tricky
Payments: Front End	Mobile money is not ubiquitous in most markets; inhibiting the use of mobile money platforms to facilitate premium payments. Restrictions in certain markets on the automatic debits from mobile money accounts Restrictions in certain markets on the use of airtime for non-mobile services Airtime deduction models remain high-cost but do have promise of scale.
Payments: Back End	Costly integration between MNO and Insurers
Integration	Integration across a complex value chain is costly and cumbersome. With health products, the additional need for the healthcare Third Party Administrator adds additional complexity and administrative burden. Healthcare provider networks are often limited in developing countries and often not digitalised.
Products	Most successful innovations in DMI have been the loyalty models which have quickly reached scale, but these models are not always sustainable over time and require an eventual shift to paid models. Challenging to move beyond simple life or hospital cash plan products Complexity of complex health products limits distribution wholly over the mobile device Limited data for pricing Some existing DMI products offer questionable value to the client as evidenced by low claims ratios and exclusions
Analytics	mHealth financing models typically have high loss ratios requiring new targeting and risk management models Business case for DMI is not always evident, especially to some MNOs where, for example, an incoming executive cancelled MTN Cameroon's loyalty cover due to an unclear business case
Regulatory	Uncertainty around licensing of these new models Inter-regulatory coordination Potential for regulatory backlash upon failure

Table 5: Major Challenges with DMI
Source: Adapted and updated from Bill & Melinda Gates Foundation Digital Money Innovation Framework

5.2 Regulatory Challenges

Although an enabling regulatory environment plays a role in facilitating the development of an inclusive insurance market, regulation requires particular focus when it comes to facilitating the development of DMI because of the risks DMI models can pose at scale. A careful balance must be achieved between enabling innovative new products while also managing their risk. The two examples below illustrate the risk of, and may frame the case for, regulatory intervention.[23]

Ecolife Zimbabwe offered an embedded DMI product which grew to cover nearly 20% of the adult population within a short period of time. It was cancelled abruptly due to a dispute between Econet (the MNO) and Trustco (the TSP). Overnight, 1.6m people lost their coverage. The dent to the reputation and trust of insurance in the market was serious and reached systemic levels.

The Namibian regulator raised serious concerns about the value of a DMI loyalty programme due to the number of exclusions which led to extremely low loss ratios and thus undermined the flow of positive 'word of mouth' stories by clients.[24] Claims are essentially an insurer's shop window, and overly low claims lead to low appreciation of insurance and low client value proposition.

Both examples demonstrate how easily consumer and regulator trust can be undermined, stall market development, or even destroy it. Leach and Ncube's (2014a and 2014b) study on regulation of DMI highlights a number of risk mitigation strategies, but one of the most important is that the initiative should 'fail well':

If you fail, then fail well—creating a living will. It is important to ensure that a failure is managed well and limits the impact on the market – "if you fail, then fail well." Creating a 'living will' ex ante allows one to set the rules around failure in a way that manages the likelihood of a negative systemic impact. Essentially this means that the stakeholders in the value chain need to agree up front with the supervisor how they should wind down a scheme so that it does not have a negative impact in the market. The immediate cessation of an m-insurance scheme in Zimbabwe (Econet's Ecolife) had a market wide impact where the lack of notice to subscribers meant that 63% of those we surveyed ruled out use of similar products in future. As 20% of the adult population had been reached by this loyalty product, this was extremely significant. (Leach, 2013, Leach and Ncube, 2014a, 2014b)

Tanzania offers the best cases of 'failing well.' Failing well is a critical part of managing systemic risk and maintaining market trust. We found two positive examples of cessation of DFI products in Tanzania, which we contrast with the aforementioned Ecolife Zimbabwe product (see
Table 6 below). Although all the three were loyalty products, the cessation of the Tanzanian products were managed well and had limited impact on the market.

	Tanzania		Zimbabwe
Recommendation	Vodacom	Tigo	Econet
Ensuring a sufficient and well-communicated notice period.	Vodacom gave 30 days' notice before ending the loyalty scheme.	TIGO gave 45 days' notice by SMS that the product was ending.	Product cessation was only communicated to clients ex poste.

[23]See Leach, 2013, M-Insurance: Ensuring take off while doing no harm. http://www.cgap.org/blog/m-insurance-ensuring-take-while-doing-no-harm
[24] Interview with Adrianus Vugs, General Manager: Research, Policy and Statistics, NAMFISA

Alternative options are available to clients, including voluntary paid cover, before the scheme is stopped.	Clients had the option to move over to voluntary cover.	Clients had the option to move over to voluntary cover.	No alternatives were available to Ecolife subscribers.
Arrangements are made concerning appropriate payment mechanisms for the alternative schemes.	Clients could pay via mobile wallet for voluntary cover.	Clients could pay via airtime deduction for voluntary cover	N/A as there were no alternative options available.
Ensuring that the MNO and insurer continues to monitor and address complaints for a set period.	Vodacom continues to assess impact	Notified regulator and trained call centre agents to prepare for client queries.	No communication between the parties following the cessation of the scheme due to court cases.
The supervisor is routinely updated on the wind down of the scheme and the levels of complaints	TIRA informed of product cessation.	TIRA informed of product cessation.	Supervisor informed of product cessation ex-post. Supervisor summoned MNO and underwriter.

Table 6. Failing well –comparing the end of three initiatives
Source: Ncube and Leach, 2014

6. Conclusions and Recommendations

Although DMI is poised to continue expanding across the world and there is evidence of scale—leveraging mobile capabilities to further enhance the insurance value chain—it is not a panacea for resolving low insurance uptake in developing countries.

Similar to mobile money, there are still limited examples of DMI 'sprinters' and successes, especially when considering the paid models. Many models are either too new to report definitive results, or they are clearly struggling. In some cases, the distribution strategy has proven too hands off, relying too heavily on low touch digital models for registration. In other cases, premium payments have been linked to mobile money platforms that have yet to flourish, capping the potential insurance client base from the outset. In other cases, the limited knowledge and understanding of insurance products has hampered these initiatives from getting off the ground. The overall challenge for many DMI initiatives to successfully grow indicates a need for an integrated initiative to unpack the demand and supply side barriers to uptake, profitability and client value.

Moreover, while a digital sales model may be the cheapest, it may limit the market trust that can be developed through face to face interaction, especially when considering the implications for reaching a market that has little or no experience with insurance. Sometimes agent based sales may be costly yet necessary. Thus, a hybrid model may be considered when seeking to balance the cost of reaching the market and gaining trust and facilitating positive market discovery. Ultimately, a need exists for further understanding the implications of digital (low touch) distribution versus physical (high touch) agent distribution versus a hybrid model. Consideration of focusing on the needs of the institution is paramount and models which focus on (mobile money or airtime) agent productivity and needs may be valuable ways to extend cover, and build the business case and the market.

Concerted efforts must be made to ensure that DMI products are properly designed, distributed, and regulated so as to provide the highest value to the consumer, managing risks, while remaining viable to the insurance companies, MNOs, and TSPs behind the products. At the same time, a specific focus needs to be placed on better understanding how DMI can shift from simple life and hospital cash plan products to more robust, challenging, and potentially valuable m-health products.

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