



March 23, 2015

Insurance and Technology

Insight: The Emerging Role of Ecosystems in Insurance

A disruptive force: The emergence of ecosystems could threaten insurers all along the value chain – we see a risk that other industries profit from a deeper client relationship and better control of the risk object, whilst insurers are marginalized as mere providers of capital to shrinking risk pools.

In this follow-up to last year's [Insurance and Technology – Evolution and Revolution in a Digital World](#) we undertake a deep dive on ecosystems: A digital ecosystem is a network of companies, individual contributors, institutions and consumers that interact to create combined services and mutual value – we think they will become pivotal in 'future' insurance.

We define three distinct insurance ecosystem archetypes and present detailed case studies of each. We have categorized ecosystems as “segment of one”, “one stop shop” and “connected object” – our case studies look at Bought By Many, Alibaba/Ant Financial, Tokio Marine/ NTT Docomo, Ping An, Discovery, Insure-the-box / Toyota and British Gas/Hive.

Multiple catalysts for growth of ecosystems: We believe growing consumer expectations for tailored and sophisticated products and the rapid adoption of technology – such as Internet of Things and wearables – will drive the need for insurers to co-operate with others to deliver novel products and services.

Risk of marginalization for slow movers, but opportunities for those that respond: Insurers are at risk of losing customer relationships to those organisations with greater insights into needs; however, we see opportunities for those that specialize, re-engineer business processes / technology and partner intelligently.

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Insurance and Technology: Evolution and Revolution in a Digital World



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Digital Ecosystems in Insurance – Executive Summary

In this report, we undertake a deep dive on Digital Ecosystems in Insurance. We believe ecosystems are a disruptive force that could threaten incumbents all along the value chain. We see a risk that other industries (e.g. web companies, car manufacturers, utilities) profit from deeper client relationships and better control of the risk objects that these ecosystem models enable, whilst incumbents are marginalized as providers of capital to shrinking risk pools.

We see 3 types of ecosystem models emerging, in many cases driven by new entrants

- *Segment of One distribution ecosystems:* delivery of personalized offers based on deep customer insight. In many cases, these are driven by (e) retailers (e.g. Alibaba) or start-ups (e.g. Bought-by-Many).
- *"One-stop-shop" ecosystems* that orchestrate a broad set of services around an integrated set of customer needs (e.g. everything I need to lead a healthy life – Discovery's Vitality programme).
- *Connected object ecosystems* that offer a real-time monitoring proposition on key risk objects, such as cars or homes. These models have the potential to significantly reduce risk exposure for insurers.

These models show rapid growth (e.g. Ping An's one-stop-shop for second-hand car trading has grown 8x since launch) and others (e.g. Vitality with 5.5M members) are already at scale.

Multiple catalysts for ecosystem growth

Although there are some key inhibitors (e.g. privacy concerns, high investments in smart sensors relative to premiums), we believe there are 3 key catalysts that will accelerate the trend:

- **Consumer expectations:** ~50% of consumers would definitely switch or consider switching to new innovative insurance models, based on consumer research in our previous report.
- **Technology adoption:** device connectivity is growing at an exponential rate. By 2020, we expect that 80-100% of all shipped cars will have embedded connectivity and that nearly everything in a home could be monitored online. Many tech giants

(Google, Apple and Samsung) have launched B2C platforms that can manage these connected devices.

- **Regulation:** safety regulation will further accelerate the adoption of connected devices. A clear example is the eCall EU initiative that requires all cars from 2017 to be equipped with a system that automatically generates an emergency call.

Threat for insurers across the value chain

- **Distribution:** we expect that ecosystem models will trigger a shift to non-traditional channels with deeper levels of customer engagement.
- **Underwriting:** we expect underwriting to become a data-driven game as ecosystem models will increasingly leverage their insight from novel data sources, such as connected devices.
- **Claims management:** we expect ecosystem models to have an advantaged position to control and minimize their risk exposure. Focus will shift from reactive management of a claim to the provision of services that monitor and manage risks in real-time.

Five key actions if insurers are to compete

- **Understand the economic opportunity and threat** – what is the potential for new revenue streams and better cross- and up-selling of existing products?
- **Prioritize offerings based on company strength** – where can the company add real value to the ecosystem and produce the highest returns?
- **Transform the operating model to foster innovation** – does the current organizational structure have the right capabilities and structure?
- **Strategic partnerships** – what are the key partnerships needed and how to ensure they will deliver value five years from now?
- **Test ideas in the market and scale up quickly** – Can ideas be taken to market quickly in a small scale, and how to determine as soon as possible whether they are worth further investment?

Brief recap – Insurance is on the brink of technology-driven change

On the brink of major technology driven change

In our view, the significant impending change creates major opportunities for insurers that are looking to embrace it, but also poses significant risks for the laggards.

Specific technology challenges for insurance

While some aspects of technological change – such as better operating efficiency, the need to engage creatively with consumers and increased disintermediation – are common to many industries, others are insurance-specific.

Internet of Things and Big Data likely to be important

Fundamentally, insurance is about the pricing and selection of risk. We believe that the Internet of Things (IoT) and Big Data will change the type of information that insurers use to assess risk, the way in which information is analysed and ultimately the size of actual risk pools.

Ecosystems drive the need for partnerships

Cheap, connected sensors have the potential to transform the insurance offering – be it in motor, home or health insurance, or industrial settings. However, we believe insurers will need to orchestrate or join ‘ecosystems’ (networks of companies, individuals and institutions that interact and provide services) in order to fully promote and exploit these services. ***Ecosystems are the focus of this follow-up report.***

Overview – focus on ecosystems and recap

In September last year we published an in-depth report exploring the likely impact of technology on the insurance industry “[Insurance and Technology: Evolution and Revolution in a Digital World \(10 Sep 2014\)](#)”. In preparing the report we conducted 56 interviews with senior executives of insurers and technology providers globally. We also commissioned a proprietary global insurance consumer survey in 12 countries.

In this follow-up piece we explore in more detail one aspect of our work which met with particularly strong interest from both the industry and investors – the growing role of **ecosystems** in delivering novel products which meet consumer demands; and the consequent need for insurers to partner with a wide range of companies from auto manufacturers, to utility providers, to tech firms.

We describe the current emergence of ecosystems (proposing a new segmentation into three different types) and explore the potential implications for the insurers in the medium term. We also present 7 case studies which should vividly illustrate how ecosystems are already changing the industry.

However, first a brief recap of our principal findings from the original report.

Lagging consumer expectations

We argued that the insurance industry has been slow to respond to the growing threat from technology and in general is falling short of consumers’ increasingly high expectations.

As we highlight in Exhibit 1 insurers typically have less interaction with consumers than in any other industry – with around half of customers having one or less interaction per year. Furthermore, when contact is made the experience is typically disappointing relative to other industries – see Exhibit 2; especially so at a “moment of truth” such as making a claim.

We believe that a step change in consumer engagement is needed – insurers that are slow to implement new technology run the risk of anti-selection (we note that the worst quintile of risks in a market can produce 9x more losses than the best quintile).

Encouragingly, our research showed that consumers are willing to consider innovative products, with younger and more affluent consumers showing the greatest propensity.

‘Digital natives’ could threaten incumbents

Companies born in the digital age can operate at substantially lower cost – due to automation, self-service and efficient distribution models. Currently, digital natives have much more compelling customer propositions than traditional models, and with scale this could lead to significantly lower loss ratios driven by better risk selection, claims management and loss prevention techniques.

Business models with sufficient scale to support the fixed cost of building the infrastructure, as well as marketing investment, are proving highly competitive.

Risk pools are likely to shift, and shrink

We expect current technological trends to drive a profound shift in risk pools. New risks are emerging, such as cyber risk – but, in parallel we see greater loss prevention (especially in traditional business lines) that could lead to a sharp contraction in non-life premiums (10-20%).

However, we note that new digital models for consumer engagement, as well as more flexible, on-demand types of insurance cover, could also boost demand and accelerate penetration in emerging markets – offsetting some of the likely reduction in premiums.

We have analysed the risk pools for the personal home and motor segments, and tentatively calculated that technology available in the near term could reduce risk pools across the 12 major countries that we surveyed as part of our 2014 global consumer survey, by \$32bn (or 7%, from \$460bn to \$429bn) in motor and \$29bn (or 21%, from \$140bn to \$111bn) in home, at the mid-point of our estimates.

If scaled globally, risk pools could shrink by \$62-102 billion – equivalent to 5-9% of global non-life premiums (excluding health). We think a similar argument can be made for commercial lines, although we did not quantify this.

New entrants can cause disruption

We see a risk that new entrants will disrupt existing equilibriums. Companies with strong customer relationships and hence a deep knowledge of their needs may be able to proactively identify and meet specific insurance requirements.

We believe that ‘adjacent’ players (operating in industries with high customer engagement) are well positioned to embed insurance cover in the products and services they sell (Exhibit 3).

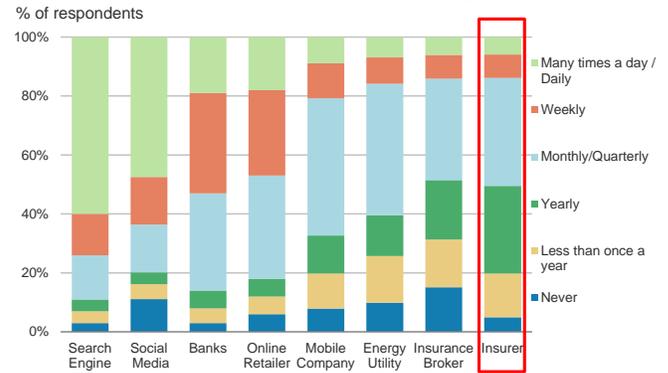
Ecosystems drive the need for partnerships

Cheap, connected sensors have the potential to transform the insurance offering. These devices enable insurers to collect new datasets, gain a much better understanding of their customers and assess risk in a completely different way.

However, we believe insurers will need to orchestrate or join ‘ecosystems’ (network of companies, individuals and institutions that interact and provide services) in order to maximize the benefit from these services. Ecosystems are the focus of this follow-up report.

Exhibit 1

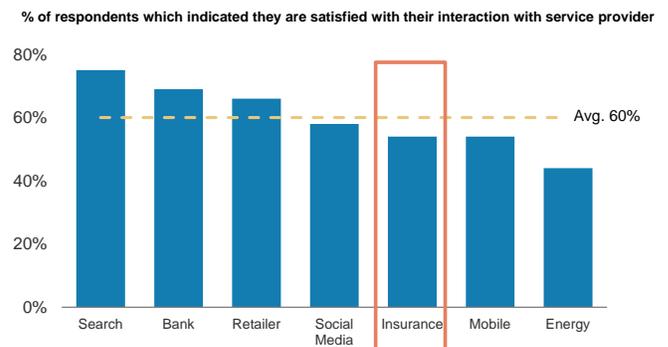
Up until now, consumers have interacted less with insurers than with any other industry...



Source: Morgan Stanley/BCG Global Consumer Survey 2014, BCG e-intensity index, Morgan Stanley Research

Exhibit 2

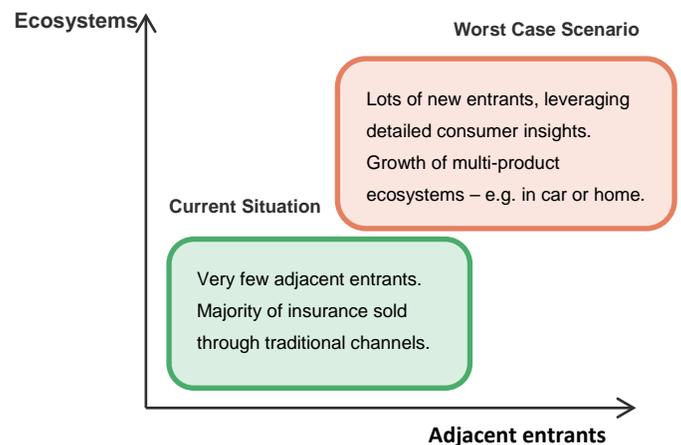
...so the consumer experience with insurers tends to lag behind others...



Source: Morgan Stanley/BCG Global Consumer Survey 2014, BCG e-intensity index, Morgan Stanley Research

Exhibit 3

Ecosystems and the risk of adjacent entrants



Source: BCG Analysis, Morgan Stanley Research

The disruptive nature of ecosystems

A growing trend in insurance

We believe the development of ecosystems will have a significant impact on the industry – enabling the delivery of innovative digital products, but also raising risks to the current economics enjoyed by the insurers. **We define three distinct archetypes of ecosystem.**

1) “Segment of one distribution” ecosystem

Delivery of personalized, targeted offers based on deep customer insights. Insurers partner with other organisations that have a high degree of customer engagement.

2) “One-stop shop” ecosystem

Orchestration of various services to deliver a seamless experience around an integrated set of customer needs.

3) “Connected object” ecosystem

Application of Internet of Things to deliver products such as connected home, connected health and connected car. Using sensors to pro-actively monitor and mitigate risk – for example, we think the growth of sensor technology creates significant opportunities in areas such as home insurance.

Meeting customer expectations

We believe the emergence of ecosystems will enable the industry to meet growing consumer expectations for more tailored and responsive products. Our global consumer survey conducted last year indicated widespread willingness to try novel products.

- 1) **Platform owner:** creating a standards-based technical foundation that allows the components of the ecosystem to collaborate and interconnect
- 2) **Providers of products and services:** ecosystems can create new markets for products and services that do not yet exist, through multiple industries collaborating and competing to create value
- 3) **Data aggregators and custodians:** managing data created by devices as well as consumers, to provide insight based on advanced analytics

Three types of ecosystems possible

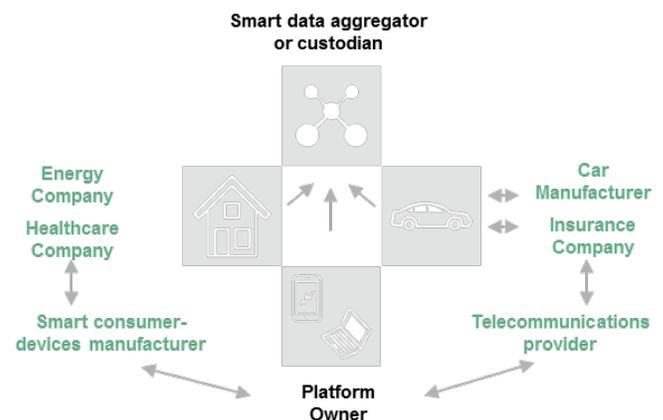
We see three main ecosystems archetypes emerging in insurance:

- 1) “Segment of one” distribution
- 2) “One-stop shop”
- 3) “Connected object” ecosystems

These are summarized in Exhibit 5. We refer to examples of various ecosystem types in the following sections – please refer to page 16 and onwards for the detailed case studies.

Exhibit 4

An example of a digital ecosystem – we believe these will become increasingly important for delivery of insurance products. The arrows represent a flow of services and data.



Source: BCG Analysis, Morgan Stanley Research

The rise of digital ecosystems

A digital ecosystem is a network of companies, individual contributors, institutions and consumers that interact to create combined services and generate value. It is enabled by a standard technical platform (usually an operating system or an appstore), which connects devices applications, data, products and services across the value chain which together form an ecosystem– see Exhibit 4.

The platform allows components in the ecosystem to work together more easily than if the individual products operated alone.

We think that there are three key roles an ecosystem has to play:

Exhibit 5

We see three ecosystem archetypes emerging in insurance

	"Segment of one" distribution	"One-stop shop" ecosystems	"Connected object" ecosystems
Customer Value Proposition	<p>Personalized, targeted offers based on deep customer insight Through high engagement channels enabling early detection of needs and rich, real time profiling</p>	<p>One-stop shop services addressing integrated set of need domains, incl. insurance E.g. "Services for 50+", "All for second-hand cars", etc.</p>	<p>Pro-active, sensor-based management of risk object E.g. home-sensors to prevent and mitigate fire or water leakage</p>
Key capabilities	<p>Real time, context-sensitive lead generation</p> <p>Customized offering based on deep customer analytics</p> <p>Individual pricing based on client value and preferences</p>	<p>Service orchestration to deliver consistent and seamless customer experience</p> <p>Service platform for supplier management and service activation</p>	<p>Prevention and claims services leveraging sensor-data</p> <p>Predictive modelling and differentiated pricing based on sensor-data</p>
Examples	<p>Bought by Many: social network to connect people with similar needs for customized insurance solutions</p> <p>Alibaba: targeted insurance plans integrated in e-commerce "journey"</p> <p>Tokio Marine / NTT Docomo: location-based, one-time insurance (e.g. golf, ski)</p>	<p>Discovery Vitality: Integrated wellness program that incentivizes its 5.5M members to pursue healthy behaviour</p> <p>Ping An: one-stop-shop trading platform (Hao Che) for buying or selling used cars</p>	<p>Insure-the-Box/ Toyota: telematics solution provider bought by Toyota insurance to build strategic capability in connected car solutions</p> <p>British Gas/Hive: broad portfolio of (smart) home services e.g. smart energy management platform and home insurance (in partnership with AXA)</p>

Source: BCG Analysis, Morgan Stanley Research

1) Segment of one distribution

Consumers interact with each component in the ecosystem to fulfill their daily needs (be it in insurance, banking, or driving, etc.). Such a high level of consumer engagement allows the ecosystem to collect numerous data points in real time, gaining a deep customer insight.

This means that the ecosystem can create a “single customer view”, and offer services tailored to each individual consumer based on their *specific* needs. Furthermore, in contrast to traditional insurers, customer needs are identified at an early stage – with the help of information acquired from adjacent players in the ecosystem. For example, an e-commerce company can record shopping behaviour, which an insurer can use to identify the most appropriate insurance products.

We believe that such an ecosystem can offer consumers individual pricing and products based on their values and preferences. Insurers may be able to offer products specifically tailored to the needs of their customer, insuring risks that otherwise might be un-insurable.

For example, **Bought By Many** uses social media and search data to connect people with similar insurance needs, and obtains a quote for the whole group. Therefore, the group is able negotiate a discount, saving money for each individual and fulfilling tailored needs that would otherwise not be met.

We think that the competitive positioning is attractive. Bought By Many benefits from lower distribution costs driven by higher conversion and retention rates; as well delivering its insurance partners an improved loss ratio and higher capital efficiency (due to the diversified nature of risks originated).

Here, mining of unfulfilled search data is used alongside targeted search engine, social media marketing and a consistent end to end experience to grow the customer base.

Tokio Marine in Japan has partnered with mobile operator **NTT DoCoMo**, offering ‘one time’ insurance through a platform, covering travel, golf, skiing and driving amongst others, aiming specifically at an underinsured younger demographic. Customers need to register a credit card, their ‘network PIN code’ and date of birth to buy a policy.

The partnership model allows for Tokio Marine to leverage from NTT’s ~60 million-strong customer base, as well as using the mobile network’s location based information. Distribution costs are low, as consumers are invoiced via their regular mobile phone subscription.

Alibaba’s ecosystem covers several fields, including e-commerce and entertainment, amongst others. Its affiliate, Ant Financial, offers a range of financial services, including insurance. The businesses are complementary – leveraging from a large customer platform, and offers targeted insurance plans that are integrated into the e-commerce “journey” – for example, offering insurance for the safe transportation of sold or returned packages bought from Alibaba’s online retail website Taobao.com.

2) One-stop shop ecosystems

Innovations in an ecosystem could eventually evolve to offer a whole suite of products for a targeted group, where the services address an integrated set of customer needs, including insurance.

For example, **Ping An’s Hao Che** platform provides a one stop shop for buying and selling used cars. Hao Che is an online trading platform that facilitates trades by auctions. There are also branded stores which operate as points of sale and service centres. So far, Hao Che has expanded quickly, growing the number of stores eight times within a 1.5 year timeframe.

As Exhibit 24 shows, Hao Che is one of the five upstream digital platforms which create a lead flow into Ping An’s traditional financial services offering through cross selling of products. After purchasing or selling a second hand car, customers are introduced to the Ping An ecosystem where they are encouraged to buy Ping An car insurance and loans at the point of purchase.

We believe that economies of scale have a role to play in the ecosystem offering. A larger ecosystem is able to offer more products to a larger customer base, with more spending and more relationships – creating barriers to entry and gaining more and more market share over time.

We think the ‘one stop shop’ concept is also applicable in health insurance. South African insurer **Discovery** operates **Vitality**, a “wellness” programme aimed at targeting health conscious customers.

Members pay a monthly membership fee and sign a data sharing agreement on lifestyle and health, in return for a discount on insurance premiums and gym membership. In our view, there are three main advantages to this business model: 1) better customer insights due to the breadth of client data, 2) cost reduction and increased efficiency as health conscious consumers have a better risk profile and lower mortality rates, and 3) higher customer lifetime value, where there is a perceived ‘high’ switching cost.

3) Connected object ecosystems

The Internet of Things and connected objects could open the door for new ways of selling and serving insurance products. It could change the way that risk is priced and managed, since these devices can monitor risk in real time.

Telematics in car insurance is the obvious example, but connected ecosystems can reach the home too. For example, water sensors could detect a leak in the home, alert the consumer's smartphone and contact the insurer's emergency response team.

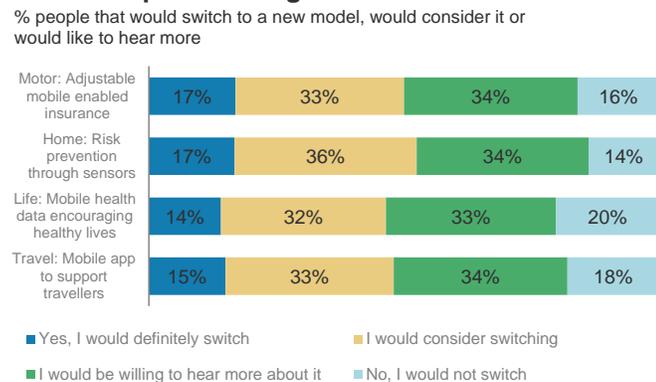
Not only are connected devices able to prevent potential claims, the data collected from a sensor can feed into predictive modelling analytics – allowing for differentiated pricing based on more accurate, and real time, data.

One example is **British Gas** (a subsidiary of **Centrica**), which owns Hive, a remote heating device controlled by a smartphone or tablet. Separately, British Gas also offers connected boilers with automatic fault detection, and a home security service with connected devices, such as a motion sensor and smart key fobs.

Multiple catalysts for growth of ecosystems

We believe growing consumer expectations for tailored and sophisticated products, and the rapid adoption of technology – such as the Internet of Things and Big Data – will drive the need for insurers to co-operate with others in an ecosystem to deliver an integrated set of solutions for consumers.

Exhibit 6 Consumer willingness to adopt innovative insurance products – greatest in home insurance



Source: Morgan Stanley/BCG Global Consumer Survey 2014, (n=500 p. country; Australia, Canada, China, France, Germany, HK, India, Italy, Japan, S.Korea, UK, US); BCG e-Intensity; BCG analysis. Question: "Through technology, there are some new ways insurers could make insurance policies more adapted to your needs and more affordable (between 10-15% discount). Would you change your insurance purchasing decision if offered one of the options below "

Consumer expectations

As Exhibit 6 shows, ~50% of consumers would either definitely switch or consider switching to a new innovative insurance model, according to our 2014 Morgan Stanley BCG global consumer survey.

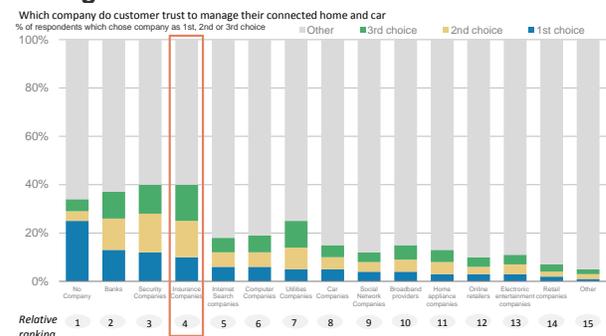
Consumer willingness to share information over privacy issues remains one concern. However, consumers reported a higher level of trust in insurance than in other industries – 40% picked insurers as one of their top-three choices as a trusted handler of their sensitive information – double that of internet search engines. See Exhibit 7.

Technology adoption

Technological change, driven by the Internet of Things and device connectivity, is growing at an exponential rate. This creates a huge opportunity for insurers to interact with consumers in a novel way, as well as assessing and managing risks and claims. We think this point is particularly important for 'connected object' ecosystems, which rely on sensor based management of risk.

For example, in the recent Morgan Stanley report [Wearable Devices: The 'Internet of Things' Becomes Personal](#), we forecast that wearable shipments could grow at 154% CAGR from 6 million in 2013 to 248 million in 2017 (double that of industry estimates), and could become the fastest ramping consumer technology device to date.

Exhibit 7 Insurance companies ranked fourth on the list of industries that consumers voted first choice to manage their connected home and car



Source: Morgan Stanley/BCG Global Consumer Survey 2014, (n=500 p. country; Australia, Canada, China, France, Germany, HK, India, Italy, Japan, S.Korea, UK, US); BCG e-Intensity; BCG analysis. Question: "In the future one single platform could control all automated items in our homes and motors. Which of the companies below would you trust the most to manage them ?"

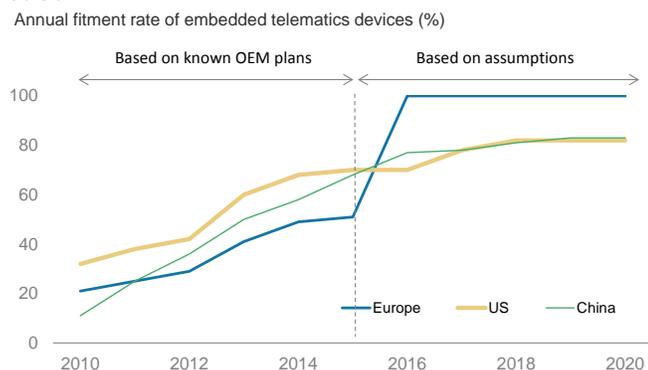
In the home, we think that 60% of homes in the European Union could have smart meters by 2019, and that by 2020 nearly everything in a home will be capable of generating data that can be monitored online and through a device (BCG: Making Big Data Work: Retail Energy).

We observe that the large technology players are introducing open B2C (business to consumer) connected object platforms. We note Google’s recent acquisition of Nest, which could create a very interesting ecosystem, as well as Apple’s Home and HealthKit frameworks, which will allow users to use its iOS8 system to control third-party devices from vendors such as Philips and Honeywell. Samsung also acquired home-automation company SmartThings in August 2014 as part of its smart home initiative.

The drawback from all of this technological change, however, is on the insurers’ side. Many management teams find it difficult to make a business case for connected object propositions, where an investment in sensor technology for connected home may cost two times annual premiums received. We think it reinforces the need to partner with other providers – for example utility companies, in order to equip the sensor with several applications in addition to insurance (security, assistance, maintenance services, etc.).

In our original report from last year, we questioned the current business case for insurers to use telematics, and found that it is much harder to make the case for the mass market given costs of the technology, the requirement to offer an upfront discount, and the still uncertain benefits on the loss ratio.

Exhibit 8
We think a steep increase in shipment of connected cars could fuel demand for telematics based solutions, making for a more compelling business case



Source: SBD global end user survey 2012, BCG analysis, Morgan Stanley, Company Data

However, we see two accelerators for the business case. Within the next five years, the vast majority of newly shipped cars will have embedded connectivity. Secondly, last year Google launched the Open Automotive Alliance to integrate in-car systems with its Android platform.

For example, in Exhibit 8 we show current and projected estimates for annual fitment rates of embedded telematics solutions in connected cars across Europe, the US and China, which could reach 80-100% by 2020.

Regulation

Regulatory change could boost consumer adoption of new technology. In Europe, a new regulatory initiative “eCall” will require all cars from 2017 to be equipped with a system that, in case of an accident, automatically generates an emergency call to an eCall operator. Basic data, such as location, will be shared, and the operator will be connected to the passengers through an audio link.

Elsewhere, changes in regulation such as the Retail Distribution Review in the UK (which prohibits commission payments to advisers) has, perhaps unintentionally, prompted a move towards digital channels of customer engagement.

We would note that an inhibitor of technology adoption is potential public resistance, where insurers may be able to use new data to select the risk they want to insure, leaving less attractive risks uninsured. The chairman of the Association of British Insurers had recently warned that “the industry will have to take great care to ensure we’re not creating, because of big data, sectors of society that can’t buy insurance”. (Source: FT, “Insurers warned to use ‘big data’ responsibly”, 1 Feb 2015).

Furthermore, data privacy legislation is giving users more control over how their personal information is used. Whilst we think this is positive for the consumer to exercise control, it could constrain insurers in using that personal information (such as shopping behaviour) for underwriting or marketing purposes.

Impact on the insurance landscape in 2020

Ecosystems are a significant potential threat

In our view, the emergence of ecosystems presents a significant long-run threat to the insurance industry – across the entire value chain.

Insurers could emerge with a diminished role

There is a real risk that insurers could be limited to elements of the value chain that others find unattractive – for example, provision of capital / underwriting and compliance.

New entrants with deep levels of customer interaction could benefit

We believe that organisations with a deep level of customer interaction – for example retailers or OEMs in the future could take the client “relationship” value at the front-end.

Risk pools will also shrink, further squeezing insurers

Not only do we see believe that insurers could be limited to providing capital, we think the need for capital could also shrink and risk pools decline due to better risk prevention (for example, autonomous vehicles).

Insurers’ competitive advantage under threat from ecosystems

New emerging ecosystems could threaten insurers all along the value chain. Exhibit 9 lists the competitive advantages of *traditional* insurers along each point in the value chain – we believe that the advantages highlighted in yellow are most at risk from new ecosystems.

In the following section we consider each of the ecosystem archetypes in turn and their competitive advantages in the value chain.

Exhibit 10 is an example in motor insurance where we think new ecosystems could marginalize the role of incumbents. It maps out companies which we think may be at risk, and the types of organizations which could benefit in the future.

‘Segment of one’ ecosystem

A segment of one ecosystem enables one to identify micro-segments of clients with specific needs, fulfilling the first step of the value chain. In the marketing and product development stage, this model can offer tailored products for those micro-

segments, with targeted digital marketing – for example through social media.

In the distribution stage, we think a ‘segment of one’ model will see a higher conversion rate and lower attrition due to better links to customer needs.

There are also underwriting advantages, where customer analytics mean that insurers in this ecosystem can underwrite *individual* risks, and price accordingly.

‘One stop shop’ ecosystem

At the first stage of the insurance value chain, we think a one stop shop is able to offer an insurance product as part of a wider offering which addresses an integrated set of needs.

Marketing and product development costs also become cheaper as individual components within the ecosystem can split costs with adjacent products. The added competitive position we think is that partners within the ecosystem can cross-sell between divisions and partners by combining distribution capabilities. For example, Ping An insurance has a ‘single customer view’ across all of its business functions, which improves cross selling across divisions in the group.

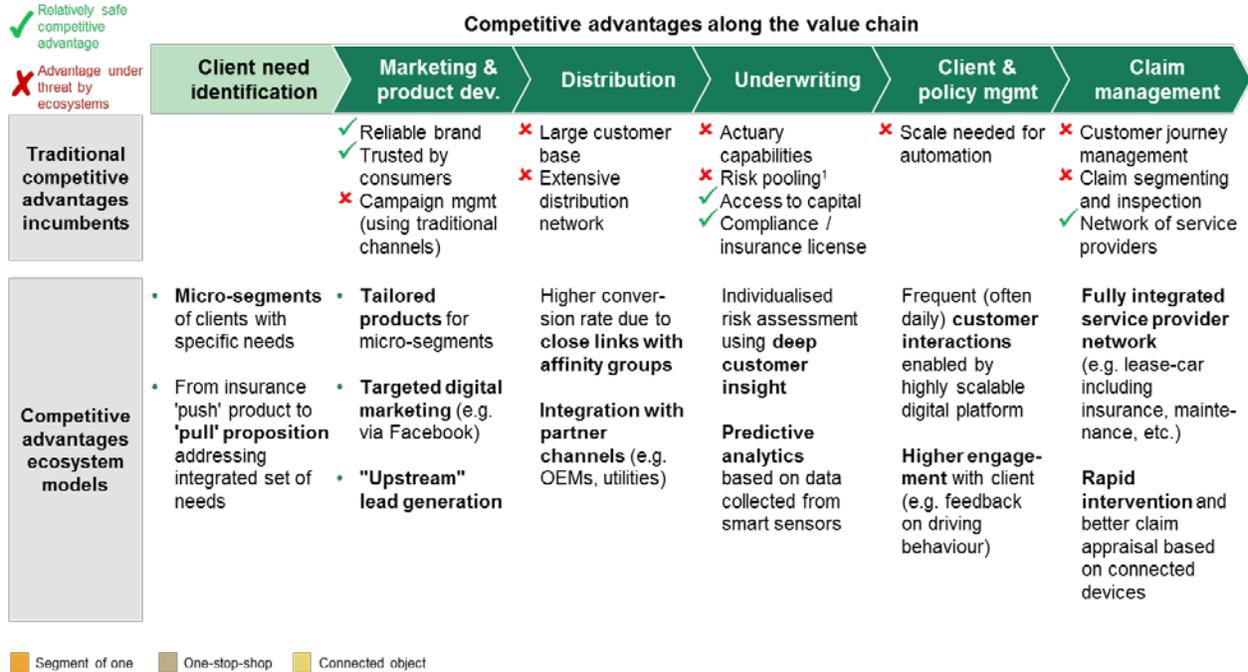
Perhaps the most important advantage for a one stop shop ecosystem is that it is a fully integrated network that can also manage and service claims. For example, an insurer in this ecosystem may be able to underwrite and distribute policies, whilst the car manufacturer or maintenance company can service any claims.

‘Connected object’ ecosystem

At the underwriting stage, various connected devices can pick up data (for example, through a sensor) on risk behaviour (such as driving, smoke detection), and help an insurer more accurately assess the level of risk insured. Crucially, connected devices can also help prevent risk (for example, a sensor which automatically detects boiler or pipe leaks and contacts the user as well as a service centre) – which could help materially improve loss ratios.

Exhibit 9

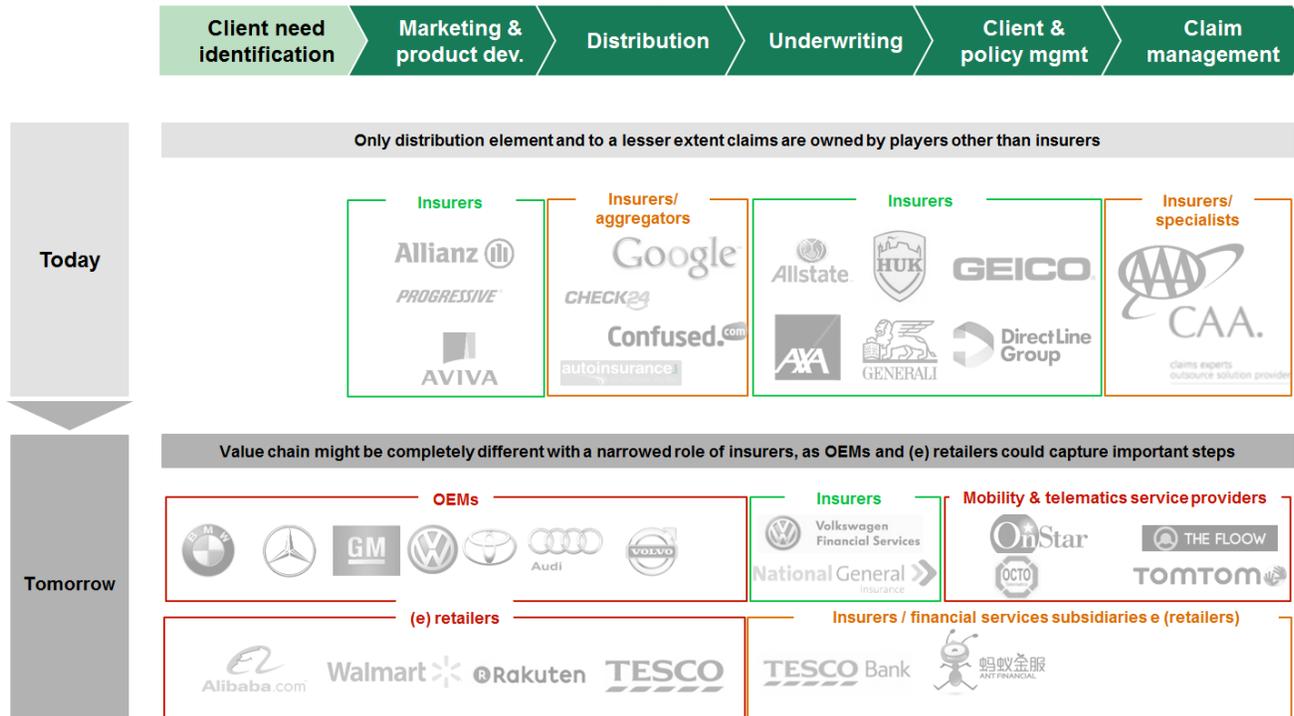
Emerging ecosystems could threaten traditional insurers along each point of the value chain



Source: Morgan Stanley Research, BCG Analysis. Risk pooling partly under threat due to loss of lowest risk clients to e.g. segment of one and connected-object ecosystems.

Exhibit 10

Emerging ecosystems threaten traditional insurers along each point of the value chain



Source: Morgan Stanley Research, BCG Analysis.

Exhibit 11

British Gas, a subsidiary of Centrica, has a connected boiler offering which detects faults and automatically contact the service centre.



Source: Centrica, Morgan Stanley Research, BCG Analysis.

Connected devices maintain a high level of client engagement, boosting interactions at the client and policy management stage of the value chain. For example, telematics data can provide continuous feedback on driving behaviour.

We think that a connected object ecosystem is also advantageous in the claims management stage. The device can rapidly identify and even intervene in the event of an accident, leading to better claims appraisal. For example, British Gas, a subsidiary of **Centrica**, offers a connected boiler which detects problems and diagnoses them remotely – see Exhibit 11.

The boilers send data to British Gas in real time using a “cloud diagnostics engine”. Any fault will be received at the service centre, which contacts the user to arrange an engineer visit. The engineer is more likely to correctly fix any damage in less time, as the fault is already diagnosed. The connected boiler service is currently in trial and due to be deployed later in 2015.

We think this could considerably reduce claims costs - it could also provide additional opportunities to reduce investigation costs and avoid fraud.

Key implications for insurers

Significant challenges for insurers...

We think that the development of ecosystems could further challenge the economics for insurers – particularly as the lucrative customer relationship is most at risk, with insurers potentially relegated to providers of capital (c.f. the pattern already observed with bancassurance).

...but opportunities for those that respond fast

While we are bearish about the future for those that do not react we are more positive about the proactive. We think that investing in technological capability now is of vital importance.

Scarcity of relevant global partners

As we argued in our original piece, we think that for many of the emerging ecosystem products – connected car for example – there are only a limited number of relevant global partners. Demonstrating capability and agreeing partnerships here is crucial.

Recognise strengths and transform operating model

We think that re-inventing traditional processes is crucial – in particular, embedding an ability to work flexibly with novel partners – both from a management and systems view.

The insurance industry has been slow to react to new emerging technologies, and we think that the rise of ecosystem models will have three key implications for insurers:

1. Shift to non-traditional channels
2. Data driven underwriting
3. Evolving and shifting risk pools

We explore these implications in detail below, with reference to points along the value chain most at risk. Furthermore, we build on how insurers could respond and address technological change.

Shift to non-traditional channels

The distribution stage of the value chain becomes increasingly important, as technology and changing consumers drive a real need to evolve traditional distribution channels and incorporate these changes.

For example, consumers are more willing to use online channels when interacting with insurers, and less willing to pay for face-to-face interactions. Additionally, consumers would like more speed, ease of use and personalized services, importing expectations from other industries (see Exhibit 12).

Therefore we think that distribution of insurance products is likely to shift over time to high engagement channels. In particular, to channels that offer a more tailored experience and better integration in the broader “customer journey”.

We think this is already occurring in other industries – and may pose a risk to traditional insurance models. For example, we have seen e-retailers such as Alibaba already offering insurance in its “financial supermarkets”, or OEMs who are increasingly selling mobility packages that include insurance (although it is from a low base – the OEM share for motor insurance does not exceed 5%).

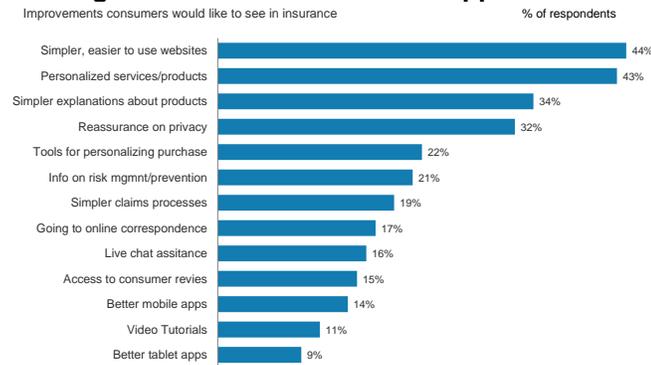
Data driven underwriting

Insurers have traditionally measured risk using actuarial-style analysis of risk proxies, such that underwriting is based on backward looking data, where changes in behaviour take a long time to reflect in the statistics.

Moving forward, we think that new technologies could fundamentally change the way that risk is assessed, and drive the underwriting part of the value chain to become a “data driven game”.

Exhibit 12

Consumers seek simpler processes & personalised offerings rather than mobile/tablet apps



Source: Morgan Stanley/BCG Global Consumer Survey 2014, BCG e-intensity index, Morgan Stanley Research. Question: "Please select three types of improvements you would like to see on insurer's offers and interactions."

This means including information from non-traditional sources, such as consumer behaviour, or real time monitoring data collected from various connected devices.

An example would be a telematics-based car insurer that can identify the lowest risk customers based on its insight into individual driving behaviour, and share the benefits with customers in the form of a discount.

Evolution of insurable risk pools

Technological advances and emerging ecosystems are likely to have a profound impact on insurable risks pools in the future.

The composition of risk pools is likely to change – on the one hand, exposure to traditional risks may reduce with negative implications for premiums, but emerging ecosystems enable flexible, low-threshold offerings that could increase penetration. New technologies may also introduce new risks, but could similarly enable insurance companies to benefit from much lower loss ratios and an increased penetration in terms of distribution. Interestingly, the type of end insured risk could change – for example, in the case of autonomous cars the risk may shift towards being a product liability insurance product, rather than insuring driving liability.

Factor 1: reducing risk pools over time

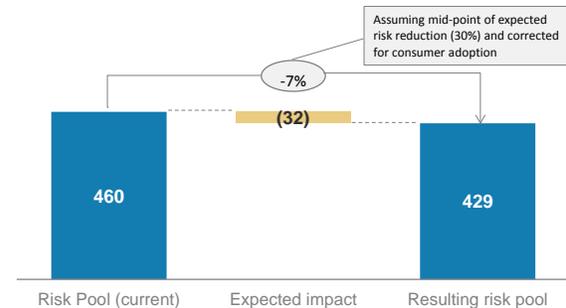
In motor, we think that a connected car could reduce risks by 15-25% through real time monitoring of data. Through new technologies, we could see a combination of reduced accidents and fabricated bodily injury claims, as well as the

elimination of fraud by identifying suspicious claims at the earlier opportunity.

Exhibit 13

We estimate that at the midpoint \$32bn of motor premiums could be lost at the current level of likely adoption of telematics technologies

Motor insurance risk pool for top 12 countries, 2013 \$bn



Source: Morgan Stanley/BCG Global Consumer Survey 2014, Sigma, BCG Analysis, Morgan Stanley Research. Note that countries on the chart represent ~76% of global motor premiums.

Combining this with an expected consumer adoption rate for new novel insurance policies of ~37% (based on our 2014 global consumer survey), we estimate that motor risk pools across the countries we surveyed could shrink by \$32bn, or 7% from 2013 levels – see Exhibit 13.

In home, we think the impact of new technology is more profound, where risk reduction through adopting smart devices could potentially reduce risks by as much as 40-60%.

Not only could new technology prevent risks, some currently insured homeowners will be able to trade down to covers that attach to the specific time period they are worried about – such as leaving the house empty on holidays. On the other hand, currently uninsured people may be attracted in. The overall impact could fall either way.

We think that in the home the risk pool of \$140bn in 2013 could shrink by 21% (at the midpoint) to \$111bn (Exhibit 14), across the 12 countries in our global consumer survey.

Factor 2: new risks will emerge and penetration could increase

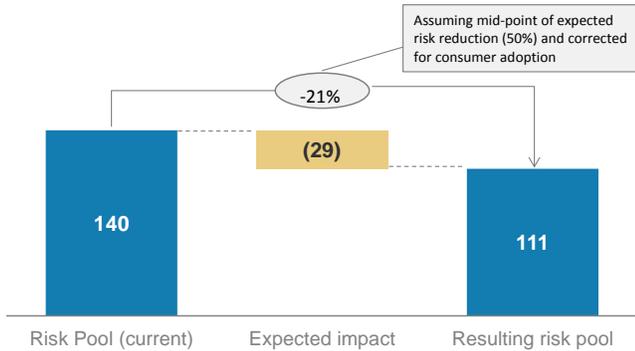
As technology evolves, we could see new classes of risks emerging, such as cyber risk. Throughout history, the industry has adapted to insure new risks – for example, motor risk would have been new when cars were first popularized.

Furthermore, we believe that new ecosystems could boost demand and accelerate penetration in under-insured markets.

Exhibit 14

Technology could have a more profound impact in home, where the risk pool could shrink by 21%

Home insurance risk pool for top 12 countries, 2013 \$bn



Source: Morgan Stanley/BCG Global Consumer Survey 2014, Sigma, BCG Analysis, Morgan Stanley Research

For example, 'pay-per-use' insurance policies become possible in a connected object ecosystem, where non-car owners have the option of buying 'one day' motor insurance.

In a 'segment of one' ecosystem, new tailored policies can fulfill the insurance needs of niche groups that would otherwise be under-insured or unmet.

How could insurers respond?

In order for insurance companies to stay competitive in a rapidly changing industry, we would highlight five areas:

1) Understand the economic opportunity and threat

We think it is firstly important to understand how existing products and services can add value in the ecosystem. This could pave the way to explore potentials for new revenues and profits, as well as second-order effects from better cross selling and up selling of existing products.

Likewise, it is possible that insurers create scenarios exploring how existing offerings could be threatened by ecosystem models, understanding the time horizon by when these models could become mainstream.

2) Prioritize offering based on company strengths

We believe this is where a company could add real value to the ecosystem and produce the highest returns. For example, we could envisage a situation where a motor insurer with 'connected car' offering leverages a car repair network in the ecosystem.

3) Transforming the operating model to foster innovation

This may include assessing the current organizational structure of the firm, and whether capital should be allocated to start a greenfield organizational unit.

We also think that companies that invest in key capabilities (e.g. service orchestration, partnership management, management of data from smart devices) stand to benefit the most.

4) Strategic partnerships

We would look for players that are selective in potential partners in an emerging ecosystem, particularly those making conscious 'make-or-buy' decisions regarding the ecosystem

platform – and that the partners are still delivering the value five years from now.

Given the risk of becoming disintermediated at the distribution stage, we think that the best positioned insurers would be ones that establish partnerships with ‘upstream’ channels, in order to mitigate the disruptive risk of losing the customer relationship adjacent players.

We think partnerships are also important to form at an earlier stage to avoid anti-selection. As underwriting becomes increasingly technology-driven using real time data, insurers who use it effectively in underwriting are likely to be able to select the best risks from a pool – while the rest of the market experiences worsening claims.

5) Test ideas in market and scale up quickly

In our view, insurers most likely to succeed are ones with a ‘Venture Capital’ model for digital initiatives. That is, taking ideas to market quickly, on a small scale – and then testing whether it is worth further investment. Otherwise, we would see diminishing returns to capital if an unsuccessful initiative continues.

We think large investments in ecosystem infrastructure may be too capital and cash consumptive, and could produce negative returns. Furthermore, it is important to firstly build up the right set of capabilities, such as training employees on the logistics of connected devices and the Internet of Things to develop the right product.

“Segment of One” Case Study: Bought By Many

A personal lines and SME distribution model

Bought By Many (BBM) uses Big Data to identify and fulfil niche insurance needs. It takes advantage of social media (Facebook and Twitter) and search engine optimization to identify individuals with particular needs (for example, insurance for a particular breed of dog, travel insurance for those with a specific medical condition, home insurance for owners of specialist sporting equipment) – and build communities around these needs.

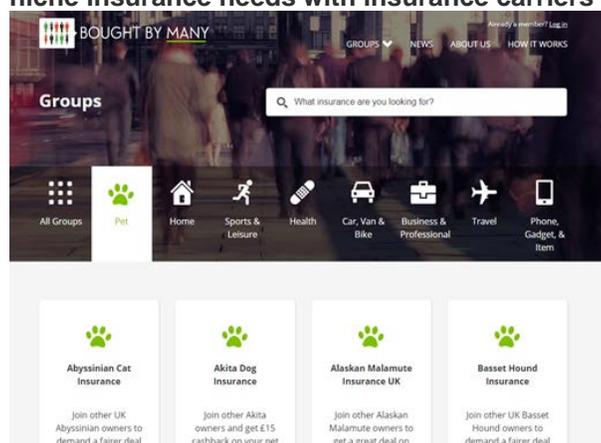
BBM then matches these communities or ‘groups’ to specific insurers, using its purchasing power to negotiate a discount for the group and saving money for each individual.

We think its highly tailored offering is a great example of the “Segment of One” ecosystem archetype.

Insurance under this model is often niche, as sometimes individuals may not be able to obtain cover elsewhere. At other times, policies may be available for their needs but are hard to find. In both cases the access and clarity that BBM brings mean persistency and premium levels are high. Other benefits include low acquisition costs (pure online model), higher customer advocacy and greater risk diversification on a Solvency 2 / economic capital basis.

This makes BBM an attractive partner for insurers – allowing them to source profitable business that is not accessible via traditional distribution channels.

Exhibit 15
Bought By Many matches consumers with specific niche insurance needs with insurance carriers



Source: boughtbymany.com

Interest has grown rapidly – since launch in September 2012, Bought By Many currently has over 58,600 members.

How does the ecosystem offering work?

BBM seeks to address the specific insurance needs of **micro-segments** (e.g. people with diabetes looking for access to travel insurance).

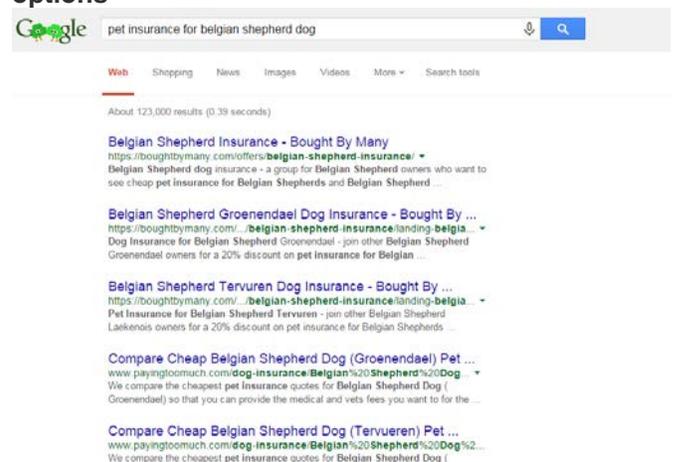
It has a customer base of around 58k members, which is growing at around 9k per month. BBM currently works with 17 insurance carriers in the UK, including major players such as RSA and Allianz but also with many small players as many large insurers are currently reluctant to write very niche risks.

BBM attracts members via interest groups on social media, affinity marketing (for example charities) and through search engine optimization – BBM has a top ranking on Google for 6,100 *niche* insurance search terms. For example, Exhibit 16 demonstrated a Google search for “Belgian Shepherd dog” insurance, and Bought By Many shows up as the first three search items.

Competitive positioning

BBM started with pet insurance and has since moved into other P&C segments such as travel and home. The business has started in the UK, but is expanding internationally – and will shortly go live in the Netherlands.

Exhibit 16
A Google search for “Belgian Shepherd Dog” insurance returns Bought By Many as the first three options



Source: google.com

It believes that its addressable market is up to 40% of the overall P&C insurance market (based on Swiss Re market sizing) – as even in major segments such as motor there are many micro-segments with unfulfilled needs (for example older drivers, modified cars, individuals with bad claims history and young drivers) – see Exhibit 18.

BBM's competitive advantage is driven by:

- **higher premium levels per customer** (due to the focus on consumer education and coverage options).
- **lower distribution costs** driven by higher conversion and renewal rates, supported by minimal overhead (BBM currently has just 8 employees)
- **superior loss ratio**, driven by better risk selection.
- **delivering capital efficiency to insurance carriers** – due to the economic diversification advantage of a large number of micro segments

We believe that the model is difficult to replicate for the incumbents as they are strongly geared towards pricing commodity products, driven by the needs of the aggregators and IT constraints.

Partnership model and economics

BBM aims to deliver a win-win for both the policyholder and the insurer.

Personal lines business typically has a distribution cost of around 30% of premium – which under the BBM model is redistributed equally between customers (as a discount or cover improvements), the risk carrier and BBM. See Exhibit 17.

BBM typically earns ~10% of the premium - ~£25 for an average policy, both at the point of sale and at renewal. Given how attractive the business is in terms of persistency and policy size, some carriers choose to forgo their 10% of premium and instead increase the discount/terms offered to the consumer.

From its revenue, BBM has to deduct its own (modest) overheads and its cost of customer acquisition (for e.g. through Facebook, Twitter and Google). At the core, BBM is a distribution business and has built a range of partnerships with risk carriers for specific micro segments. It negotiates rates with the risk carrier on behalf of each community / group

and monitors that discounts are being consistently met (particularly at the time of renewal).

Each group's website is co-branded between BBM and the risk carrier which underwrites the policy.

Key capabilities and success factors

In essence the BBM model is a simple one – matching groups of individuals with similar unmet niche insurance needs with insurers, however in order to achieve this consistently BBM has had to develop some key capabilities:

- **Big Data analytics** – assessment of unmet consumer need and risk profiles of specific micro segments (based on social media profiles lined with claims data of risk carriers)
- **Targeted marketing** – BBM bids on a daily basis for specific positions on Facebook or Twitter. BBM also consistently ranks highly on Google search for niche insurance terms.
- **Enhancing insurers' service** – BBM uses its deep customer insight to help insurers enhance the customer experience – e.g. they identify well-connected customers in a particular micro segment, and ensure these customers get extra care during key moments-of-truth (for e.g. policy renewal, claims).
- **Consistent end-to-end customer experience:** for example, co-branding of customer communication and consistent implementation of discount schemes. We note that some insurers are keen to work with BBM but struggle due to IT legacy constraints.

Exhibit 17

Under the Bought By Many model, distribution costs which are typically ~30% of GWP are redistributed to customers, risk carriers and BBM

Source: Company Data, Morgan Stanley Research

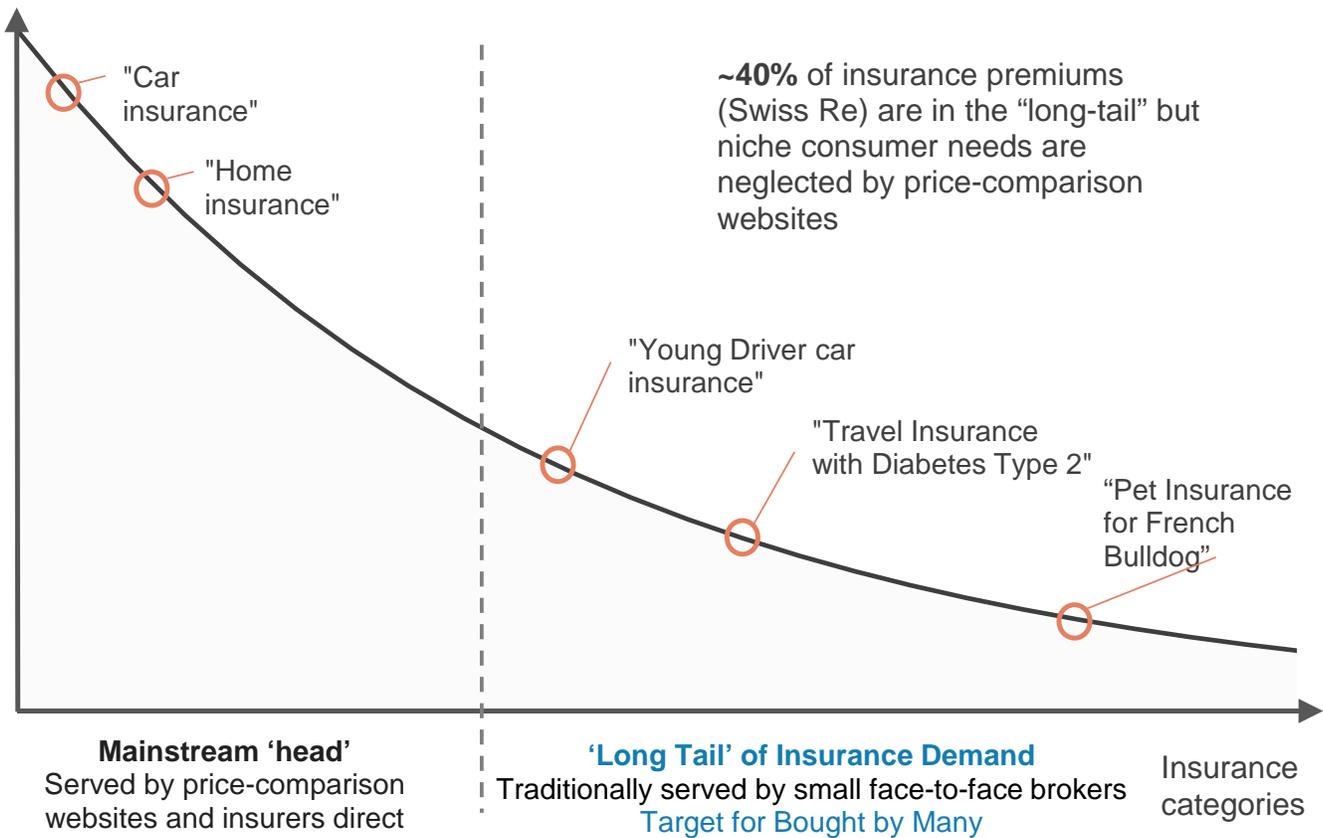
Split of reallocation of distribution costs in personal lines (30% of GWP)



Exhibit 18

Bought By Many uses data analytics and social media to address specific insurance needs in the 'long tail' of insurance demand

Volume per category



Source: Bought By Many, Morgan Stanley Research

“Segment of One” Case Study: Alibaba/Ant Financial

A global e-commerce giant

Alibaba is one of the largest online and mobile commerce companies globally by gross merchandise volume, having reached Rmb 1.7trn (US\$274bn) in fiscal year 2014. The business provides e-commerce, entertainment and other services.

In this ecosystem, the financial services are provided by Ant Financial, which is an affiliate of Alibaba (it was previously the financial arm of Alibaba, but separated in 2011). It is partly owned and controlled by Alibaba’s CEO.

Ant Financial is the largest online financial services platform in China. We summarise the services covered by Ant Financial and Alibaba in Exhibit 19 – we think there are significant synergies between the two.

Ecosystem offering

Ant Financial’s core business is Alipay, the largest third-party payment provider in China. However, its insurance presence has increasingly expanded. The model has moved from third-party distribution to a more integrated sales channel, therefore

offering targeted insurance cover that is embedded into the e-commerce “journey”.

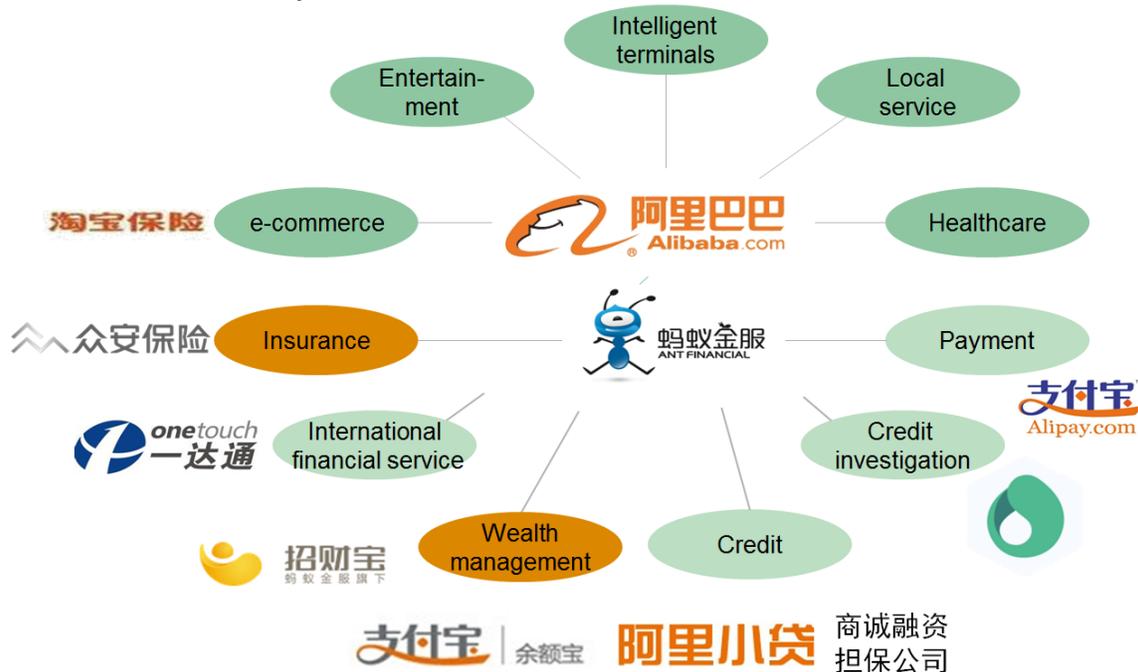
Ant Financial’s insurance presence was initially established from Alibaba’s e-commerce platform, Taobao, in 2010. Several third-party insurance companies set up direct shops on Taobao, providing mostly accident insurance in the beginning, but now offering a wider range of products, such as motor, property and health.

Moving on from third-party distribution, in 2013, Ant Financial set up an online insurance company named Zhong An, with Tencent (a social media and entertainment company) and Ping An Group – boosting its presence in the online financial services sector. Zhong An underwrites risks and also manages the policies.

The key product for Zhong An now is Merchandise Returning Insurance, which is to cover the return shipping cost for merchandise purchased through Alibaba’s Taobao. On November 11, 2014 (China’s Online Shopping Festival, similar to the US’s Black Friday), Zhong An sold 150 mn policies and generated ~ 100 mn Rmb premium.

Exhibit 19

Alibaba and Ant Financial’s ecosystem covers several fields



Source: Alibaba, Morgan Stanley Research, BCG Analysis

More recently, Ant Financial established Zhao Cai Bao, a peer-to-peer platform that allows SMEs and individuals access to loans, structured funds, and universal life insurance. There were around Rmb11bn in transactions with >500k users since the soft launch in April 2014.

Competitive advantage

We think Alibaba and Ant Financial's products are highly complementary to each other in offering a 'segment of one' ecosystem.

For Alibaba this includes:

- **Marginal marketing & distribution costs:** the integrated e-commerce platform has a market share of over 80% in the last four years. Therefore, the marginal costs of distribution will be minimal.
- **Cloud and data analytics:** Alibaba's data insight is a key advantage leading to a better information position on the customer. It has a vast cloud enabled database, providing deep insight into consumer behaviour, such as shopping habits, social network data and financial transactions.
- **A larger merchant and consumer base that needs financial solutions**

Ant Financial's competitive advantages include:

- **Higher persistency of user base:** users are likely to check their wealth management and account balances more frequently than shopping online with any single retailer.
- **"Blue ocean" internet-based products,** Ant Financial is not competing in the traditional insurance space, but has created a "blue ocean" of new ecosystem based products, like the Merchandise Returning Insurance. In China, this is referred to as "micro online products". We believe that more new products like this could be created in the near future.
- **Service:** In 2013, Alipay (Ant Financial's online payment platform) announced plans to move into the medical care and pharmaceutical industry, by leveraging its mobile platform and enabling users to register for consultations, monitor queues and conduct payments.

Over the next 5-10 years, the service will allow mobile prescriptions and medicine delivery, incorporating medical care insurance reimbursements, commercial insurance and damage claims.

Partnership model

Currently, there is a profit-sharing agreement between Alibaba and Ant Financial whereby Alibaba receives 37.5% of Ant Financial's pre-tax profits. Ant Financial pays Alibaba technology fees, and Alibaba pays Ant Financial fees for payment platform Alipay. Seven of Alibaba's 30 partners hold executive positions at Ant Financial.

Ant Financial's joint venture Zhong An is a good example of a partnership that benefits from the competitive position of three companies, such as operational experience from a traditional insurer like Ping An and access to Tencent's marketing channel and user base.

Key capabilities

Data collected can be leveraged across the insurance franchise, for example in underwriting policies or targeting specific users.

Alibaba's integrated platform is another key capability, in our view. For example, the purchase of Merchandise Returning Insurance is integrated in the checkout process on the retail platform (see Exhibit 20). This means Alibaba can sell low-cost "micro-insurance" products – we note that the cost of a transportation policy is typically ~\$0.08.

Exhibit 20
When a user purchases a product from Taobao.com, there is an option that allows the seller to purchase Back Freight Cost insurance (see the grey box)



Source: Company Data, Morgan Stanley Research

“Segment of One” Case Study: Tokio Marine & NTT Docomo

Partnership between traditional insurer and mobile operator

Tokio Marine is the oldest and largest insurance group in Japan. In 2010 the group partnered with NTT Docomo, Japan’s largest mobile service provider with more than 60 million customers to offer insurance through a platform.

Ecosystem offering

Both parties work together to create “One Time Insurance” products distributed through mobile apps for a wide range of occasional activities. The app targets younger people that are not yet regular customers but have specific shorter term insurance needs.

There is a range of policies available under two brands, which can be paid *per use* or bought on a *monthly* basis. For risks that can be insured on a ‘one-time’ basis, such as travel, golf, or ski insurance, this is lower priced (typically in hundreds of JPY per use) and sold under the Docomo brand. The majority of policies are bought either on the day of the activity or the evening before.

Risks covering longer periods such as medical coverage, bicycles cover, are typically sold at around thousands of JPY / month and is branded under Tokio Marine.

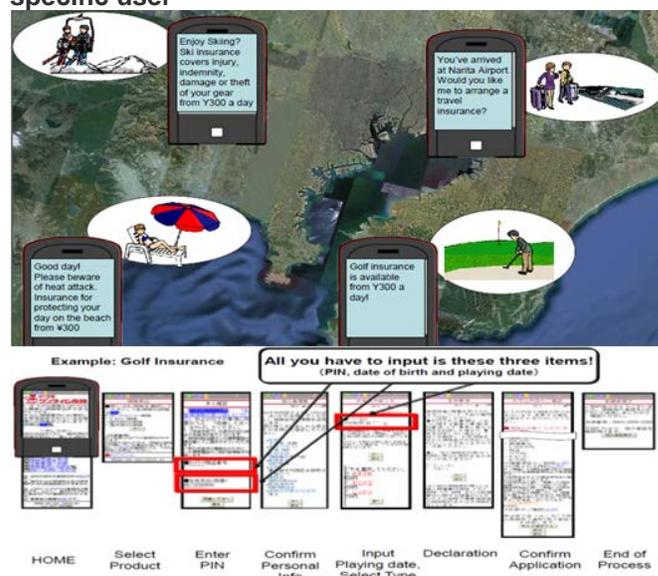
One day motor insurance is also available for non-car owners who may occasionally drive – this is distributed via the Tokio Marine agencies.

Competitive positioning

The partnership is attractive for Tokio Marine, as the key strategic objective is to build a suitable engagement channel for young people, which in turn creates a lead flow to up-sell regular insurance products.

NTT Docomo also benefits from this ecosystem as insurance becomes a value-add service on top of the more basic mobile phone subscription which supports daily activities of customers. For example, in Japan there are ~7 million young drivers that do not own a car, but occasionally borrow a car from friends or parents, so would not require a long term insurance policy. 10% of this segment have the intention to buy a car within a year.

Exhibit 21
Insurance underwritten by Tokio Marine and distributed via NTT Docomo – policies targeting the specific user



Source: Company Data, Morgan Stanley Research, BCG Analysis

We think that there are four key sources of competitive advantage:

- **Targeted marketing, leveraging mobile based location information.** For example, the phone will alert the user that they have arrived at their destination and display recommended insurance for the type of activity (Exhibit 21)
- **Low threshold product** that can be bought “at any place and at any time”
- **Large customer reach** – NTT Docomo has more than 60 million customers (~3x that of Tokio Marine) and has a bigger footprint amongst younger customers
- **Low distribution costs** – one time insurance is purchased and invoiced via the regular mobile phone subscription

Economics and the partnership model

We believe the economics are attractive as the partnership can effectively service consumers along the insurance value

chain. Tokio Marine can offer its experience in risk underwriting and claims management, whereas NTT Docomo has the marketing, distribution front end (as well as branding for low-end policies).

Key capabilities, success factors and risks

In order to ensure the partnership could successfully deliver in its initiative, the two companies have built up capabilities in the following areas:

- **Top-down decision making** – the initiative was led on a Vice-President level in both companies, allowing for faster execution of processes
- **Suitable positioning between usability and underwriting** – firstly, information gathered from a mobile user interface can be limited, which results in less data to use in underwriting risks. Generally,

consumers are attracted to buying mobile-based insurance as it is viewed as a simpler and more convenient product to buy. If the purchase process involved a lengthy questionnaire, this could deter sales.

Secondly, there is a risk of self-selection – where individuals buy insurance coverage with an emerging risk in mind.

We think that choosing the right trade-off between each aspect is important to boost future returns.

- **Avoidance of channel conflict** – the ‘one time insurance’ product is positioned as a lead generation channel towards the agents (for example, young driver who become a prospect for an annual motor insurance policy)

“One-Stop-Shop” Case Study: Ping An Hao Che

Early ecosystem leader

Despite its roots as a P&C insurer, Ping An offers a broad range of financial and non-financial services. The traditional businesses include a banking service (it acquired Shenzhen City Commercial Bank and Shenzhen Development Bank), wealth management and traditional insurance.

Newer business lines offer products outside of financial services – these include peer-to-peer lending, social networking and an online car trading platform known as Hao Che.

In this section we will focus on the Hao Che trading platform as a “one stop shop” ecosystem which has the potential to disrupt the insurance value chain.

Ecosystem

Hao Che’s proposition is to provide an online car trading platform with an integrated set of financial services (motor insurance, loans, and peer-to-peer lending) from Ping An.

The trading platform allows buyers and sellers to search for and sell vehicles, with Hao Che having tested all vehicles prior to sale. Sellers can sell the vehicles either at a fixed price or auction them via a sealed bid auction.

There are also branded stores across China, operating as points of sale such that no sale can go through without store interaction. The store also acts as service centres where vehicle testing is carried out.

Hao Che has grown quickly since its launch in March 2013, with 320,000 customers up to September 2014 - and the number of stores growing 8x since Dec-13 to Feb-15 (Exhibit 22).

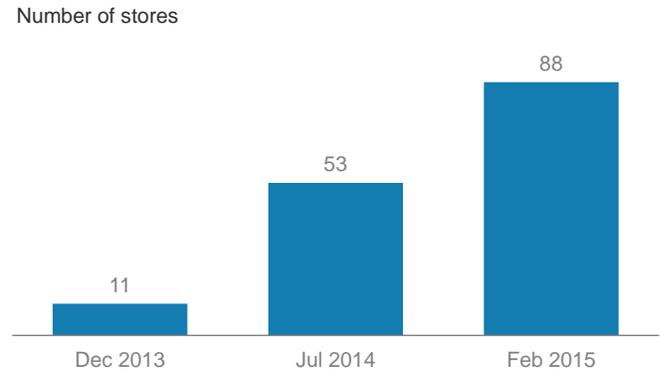
Competitive Advantage

As we show in Exhibit 23, Hao Che is one of the five upstream digital platforms to create a lead flow into Ping An’s traditional financial services. The advantages include:

- Upstream lead generation:** customers are encouraged to buy Ping An car insurance and loans at the point of purchase (points 1 and 2 in Exhibit 23). We note that ~20% of car insurance sales for Ping An is generated via the car dealer channel (including Hao Che).

Exhibit 22

Ping An’s Hao Che Trading platform has grown rapidly since launching in March 2013



Source: Company Data, Morgan Stanley Research, BCG Analysis

Exhibit 23

Hao Che’s website contains links to other services offered by Ping An



Source: www.pahaoche.com, Morgan Stanley Research, BCG Analysis

- Cross selling into the wider Ping An ecosystem and other businesses:** for example, there is a direct link from the Hao Che website which links to Lufax (the peer-to-peer lending platform) with financial incentives to join from this page (100RMB gift pack) (point 3 on Exhibit 23).
- Better information position for underwriting decisions:** The platform collects a wealth of car-related data, such as frequency of servicing, and type of car bid for. In the future Hao Che aims to use this “Big Data” to disrupt other products and underwriting (on the insurance side), as well as offering data services to participants. Although use of data for these purposes is currently restricted, we expect the regulations to be eased in future.

We think there are two partnerships in this ecosystem. Firstly, the car trading platform connects with various car traders and sellers, allowing for trades to be executed online and backed by a network of branded stores.

Secondly, the wider Ping An group is able to provide other financial services to customers who buy a car, through its banking and insurance divisions.

Key capabilities

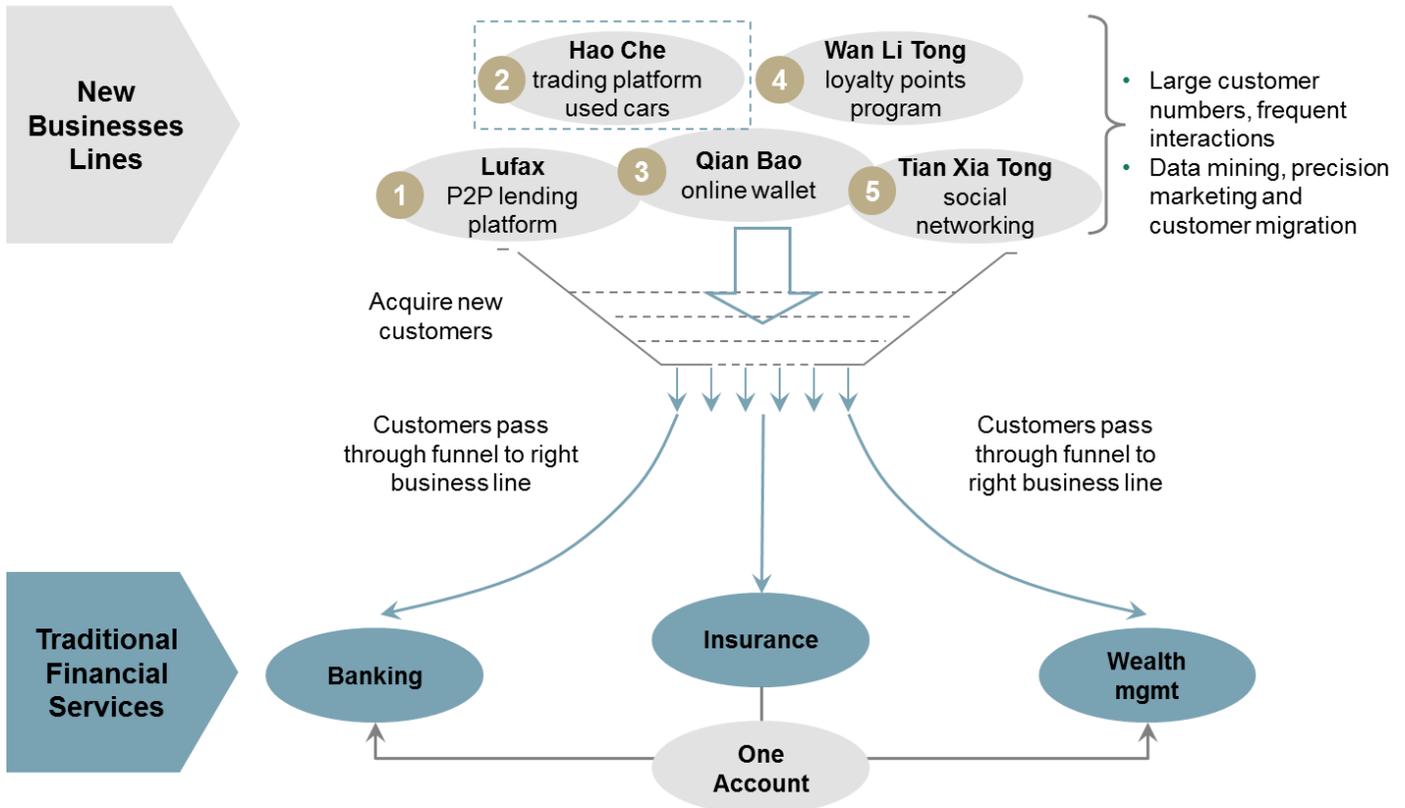
Hao Che benefits from high traffic volume to the website (supported by online and offline services, the latter via the branded stores) and frequent interactions with customers. It is a platform for ‘customer migration’ into traditional product lines.

Partnership model

The ‘migration journey’ is made easier as Ping An offers a single customer account across all of its products.

Exhibit 24

Hao Che is one of the five upstream digital platforms to create lead flow into Ping An’s traditional financial services



Source: Company strategy report 2013, Morgan Stanley Research, BCG Analysis

One-Stop-Shop Case Study: Discovery / Vitality

Wellness programme providing incentives

South African insurer Discovery is transforming the traditional insurance model into a behavioral life insurance model.

In exchange for access to a significant volume of personal data, customers get a better value proposition – for example, discounts on insurance premiums, and cash back rewards incentivizing them to pursue healthy behaviours.

The data collection is operated through a loyalty programme operated by a separate business unit of Discovery – called Vitality. Vitality collects a significant volume and variety of data which is then analysed;

- Clients' lifestyle and medical information
- Using more than 20 data providers
- Applying dozens of health and medical studies to model health and mortality impact of healthy behaviours

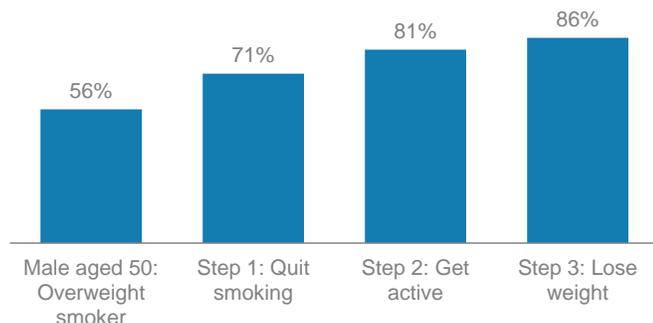
As shown in Exhibit 25 there is a strong linkage between healthy behaviour and life expectancy. Discovery started the programme in South Africa in 1997 and has since been rolled out internationally – with an acceleration in recent years.

In 2007, Discovery launched a joint venture in the UK with Prudential plc – which Discovery has recently taken 100% control of. In 2011, Discovery entered the United States with Humana followed by a link-up with ADP in 2012.

Exhibit 25

There is a strong linkage between healthy behaviour and life expectancy

Probability of 15 year survival*



* Without coronary artery disease, stroke or diabetes. Source: BCG analysis, Morgan Stanley Research company interviews ; Company Presentation; Life style and 15-year survival free of heart attack, stroke, and diabetes in middle-aged British men. Archives of internal Medicine (1995), SG wannamethee et al,

Ping An became a partner in China in 2012, with AIA following in 2013 in Singapore and Australia in 2014. Generali signed an agreement with Discovery for continental Europe in 2014. Discovery now has around 5.5 million members worldwide.

Ecosystem offering

In order to deliver the programme, Discovery has built an ecosystem of different providers and partners.

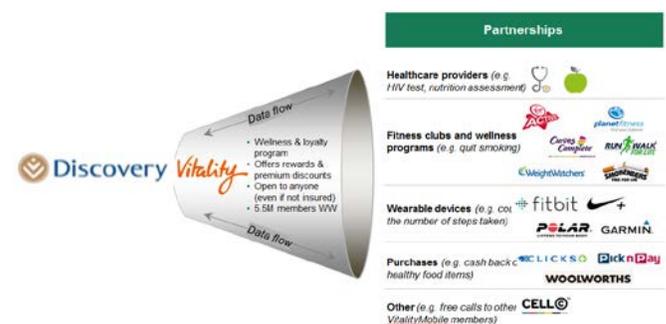
The core of the offering incentivises members to pursue healthy behaviour – for example, by receiving cash back on healthy food items or by collecting loyalty points based on an amount of exercise (measured through a wearable device). Members pay a monthly fee and sign a data sharing agreement.

There are more than 20 partners that provide products and service to members and feed data into the Vitality programme – Exhibit 26 shows some of the principal partners by category. Discovery has partnerships with healthcare providers that administer tests to set base line assessments of health and fitness. It also has multiple relationship with chains of gyms and health clubs in all the markets where it operates.

Increasingly, wearable devices are used in order to monitor fitness activity and provider incentives – Discovery uses a range of devices from various manufacturers. Finally, in South Africa Discovery offers cash back on healthy food purchases through local retailers such as PickNPay – it is also possible to make free calls to other VitalityMobile members.

Exhibit 26

More than 20 partners provide products and services to members, and feed data into Vitality program



Source: BCG analysis, Morgan Stanley Research, Company Interviews ; Company Data

Through orchestrating these various providers Discovery is able to provide a personalised and interactive insurance product which is very differentiated from competitor propositions.

Competitive advantage

The Discovery product delivers significant advantages for the insurer through lower claims costs and higher customer retention.

Discovery's incentive programme is self-funded – in South Africa members pay around \$15-20 per month, which covers marketing and administrative expenses – including the subsidized discounts.

As shown in Exhibit 27 there are five bands of status within the programme – with 'Diamond' status for those that achieve 'Gold' for three consecutive years. Members earn points for certain activities – see Exhibit 27 for examples. For example, having a nutrition assessment could earn up to 5,000 points.

Based on these tiers, members can then save up to 80% on gym membership, 30% on life insurance (with an additional 30% if combined with other products such as health cover) and 25% cash back on fitness equipment, personal care products and healthy food items.

The economic benefits for Discovery are also considerable versus a traditional product – a 'highly engaged' policyholder could exhibit half the mortality rate of a typical non-Vitality customer for example, see Exhibit 28. Whereas even for a moderately 'engaged' (bronze) member the lapse rate is 60% lower than typical.

Exhibit 27

There are five bands of status in the programme, and members earn points for certain activities

	Blue status	Bronze status	Silver status	Gold status	Diamond status
Main member	You start at Blue Vitality status	15,000	35,000	45,000	Reach Gold Vitality status for three years in row

Activity	Vitality points
Vitality Health Check	Earn up to 12,000 points
HIV test	Earn up to 5,000 points
Vitality Nutrition Assessment	Earn up to 5,000 points
Fitness session	Earn 150 points (limit 15,000 points/year)

Source: BCG analysis, Morgan Stanley, Company Data

Partnership model

Discovery has chosen to expand outside its South African home market by partnering with other insurers – the only exception to this is the UK, where it has recently bought out its former JV partner Prudential plc.

The insurers that Discovery partners with provide local market knowledge (for example in areas such as regulation), strong brands, distribution networks and capital. Discovery brings its unique experience in product design, data management and the detailed operation of its behavioural insurance product. It also typically participates in part of the underwriting.

One of the principal challenges of the partnerships relates to IT – it is not also easy to 'plug' the Vitality systems into the legacy architecture of the partner. Furthermore, adapting an insurer's traditional distribution networks to sell the new-style product is not straightforward.

However, we note that Discovery has increasing experience in this area and has partnered with some of the leading insurers in each region where it operates.

Key capabilities

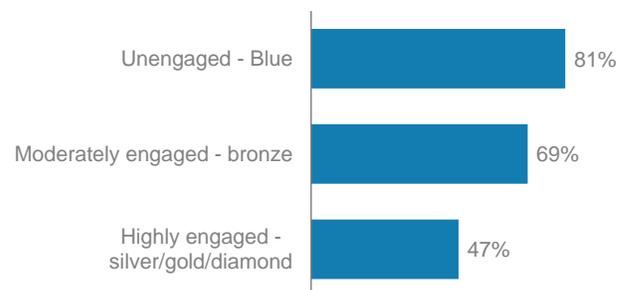
In order to deliver the Vitality programme, Discovery has had to build a significant capability in accessing and analysing data – this involves the aggregation of data from multiple sources and turning it into useful pricing information.

An associated key capability is the ongoing clinical and scientific development of the programme – which continues to refine the allocation of loyalty points.

Exhibit 28

A 'highly engaged' policyholder could exhibit half the mortality rate of a typical non-Vitality customer

Vitality member mortality ratio as % of non-Vitality mortality ratio



Source: BCG analysis, Morgan Stanley, Company Data

Connected Object Ecosystem Case Study: Insure-The-Box / Toyota

Connected cars offering motor insurance

Insure-the-Box, a UK based motor insurer, offers 'usage based insurance' policies, a type of motor insurance which is dependent on driving behaviour, miles driven, time and location of driving. It is enabled via a telematics box which is fitted in the vehicle.

The majority of Insure-the-Box was sold to Japanese owned motor insurer Aioi Nissay Dowa in December 2014, a transaction of £85m for 75% of the company, originally owned by Catlin.

Aioi Nissay Dowa is part of the Japanese MS&AD insurance group, of which Toyota is the largest shareholder.

Post-acquisition, Insure-the-box will be integrated into the European operations of Toyota Insurance Management, a JV between Toyota and Aioi Nissay Dowa.

Ecosystem Offering

Insure-the-Box analyses the data and awards a discount to consumers who drive less, more safely and during safer times of the day. The offering is predominantly aimed at young drivers, and has 150,000 customers in the UK to date.

Whilst the company is currently a 'standalone' offering, as we discuss in this section we anticipate further integration with Toyota, for example in adding connectivity services to Toyota cars – we note that historically OEMs have struggled to monetize their embedded telematics platform.

The model differs from traditional insurance in that risk behaviour is monitored in real time, compared to using 'proxies' of safe driving behaviour such as age and past driving patterns. Real time monitoring of risk allows an insurer to monitor changes in driving behaviour almost instantaneously.

The telematics-enabled box also provides service led propositions for the driver. The box will alert the driver of an 'accident' if it senses strong impact, and may attempt the contact emergency services. It can also help in theft recovery, for example using location services to find the car if it is stolen.

Competitive advantages

For Aioi Nissay Dowa and MS&AD, owning a telematics enabled motor insurer will provide expense and loss ratio improvement (e.g. from automation, better risk selection, less fraud etc.), as well as a competitive positioning in the connected devices market.

The main advantage is the potential to achieve cost savings through use of technology. In our original paper, we concluded that such a 'digitally born insurer' could achieve a 20ppt lower combined ratio. The key aspects were:

- Fraud reduction and better claims handling (9ppt)
- Improving driving behaviour through constant feedback (4-5 ppt)
- New pricing variables (3-4 ppt)
- Higher retention and brand value (2 ppt)
- Back office efficiency (1 ppt)

We also believe that future mobility trends are expected to lead to a strong increase in demand for connected car solution and services over the next 10 years. In Exhibit 29, we show the expected annual fitment rate of various connected car offerings in Europe, USA and China – with embedded and smartphone based telematics the most popular.

Partnership model

In the combined offering, Insure-the-Box will continue to provide a telematics solution as well as data analytics. However, Aioi Nissay Dowa can leverage its capital position and diversification advantage under Solvency II, and capability to underwrite the majority of the policies.

We think that Insure-the-Box also stands to benefit from the integration into Toyota's European Insurance arm. This would include Toyota's active presence in continental Europe (where Insure-the-Box is not yet active), strong brand, as well as a potential lead flow into the insurance product from future car purchasers.

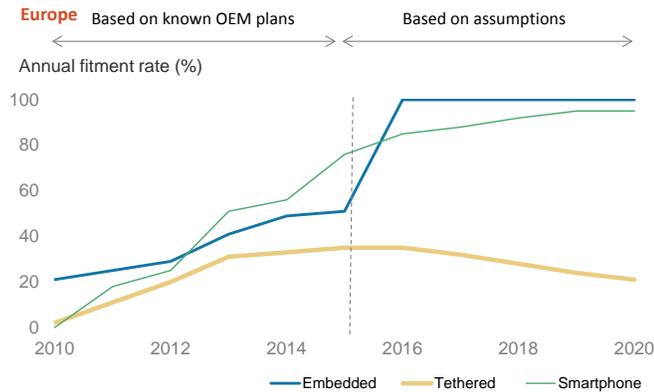
Key capabilities

Insure-The-Box and Aioi Nissay Dowa offer two key capabilities that benefit both players in the ecosystem:

- **Compliance and local regulation expertise** – Aioi Nissay Dowa has knowledge of local markets, with appropriate licenses, to ensure compliance with country-specific regulatory regimes
- **Linking telematics data with relevant underwriting variables** – this is a key capability of Insure-The-Box which has experience in using telematics data in the underwriting process. In contrast, most Original Equipment Manufacturers (OEMs) that produce telematics equipment do not have the same advantage.

Exhibit 29

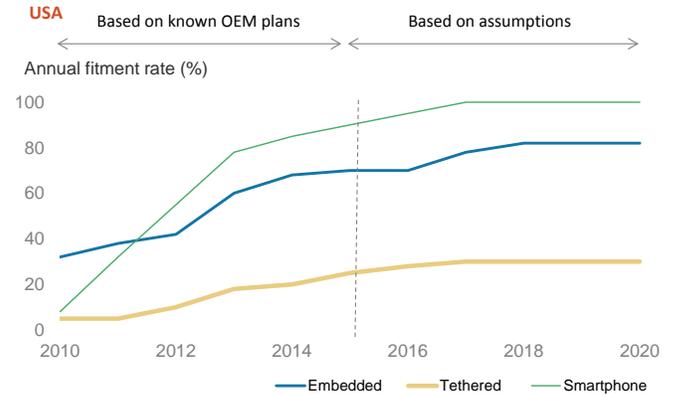
We think a steep increase in the shipment of connected cars...



Source: SBD global end user survey 2012, BCG analysis, Morgan Stanley, Company Data

Exhibit 30

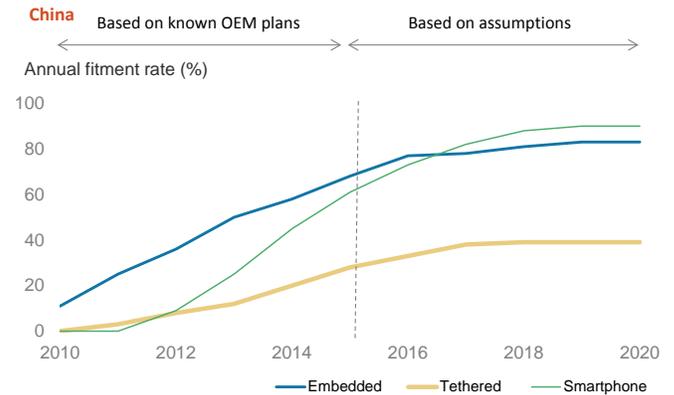
...will fuel demand for telematics based solutions...



Source: SBD global end user survey 2012, BCG analysis, Morgan Stanley, Company Data

Exhibit 31

...in particular, embedded telematics boxes and smartphone offerings



Source: SBD global end user survey 2012, BCG analysis, Morgan Stanley, Company Data

Connected Object Ecosystem Case Study: British Gas/Hive

Energy and home services provider

British Gas, a subsidiary of Centrica, is the largest energy and home services provider in the UK. It has a workforce of ~10,000 engineers that install, maintain and fix boilers, heating systems and household appliances. Total revenues in FY14 reached £12.8bn, of which 65% was derived from residential energy supply, 12% from residential services and 23% from business energy supply and services.

In September 2013 British Gas launched a new remote heating control proposition under the Hive brand. To date, this proposition has been rolled out to ~160,000 customers (~1.5% of its total customer base), and sales are running at around 3,000 per week. It has established retail partnerships with Apple, John Lewis and Amazon. Hive has been received very positively, with over 92% of customers recommending the product and 96% saying they feel more in control of their heating than before. In addition, British Gas has launched an energy insights report for customers to help them understand their energy consumption and hints and tips on how to save energy.

Centrica Group has been investing heavily in its Smart Home capabilities. In February 2015, it announced that British Gas will acquire AlertMe, the company that provides the technical platform for Hive, for £65m. Management has stated that this will 'enable further development of connected homes products and services across the Group', and 'will enable ownership and control over a scalable technology platform, software development capability, data analytics and a patent portfolio.'

Centrica has also said that it has a strong development pipeline of further innovative products with a 'connected boiler' and 'virtual in home display', both currently on commercial trial and with planned launch dates in the second half of 2015.

The Connected Home is potentially a sizeable business opportunity for Centrica/British Gas. In the Residential Energy business, with an annual gross churn rate of approximately 10%, it has the potential to reduce churn rates through increased customer satisfaction.

For example: (1) A 1% reduction in churn rate would mean savings of £5-10m pa. (2) Increasing customer stickiness can materially enhance the value of a customer – we estimate a 1% reduction in churn rate would increase the value of an energy customer by around 8%.

In addition, there are potential new revenue streams from the Connected Home, for example by offering a risk-based insurance model or wellbeing monitoring services for elderly people.

Ecosystem Offering

British Gas has a broad portfolio of smart home offerings:

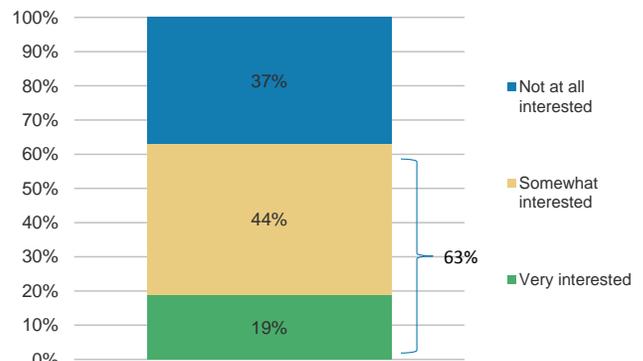
- **Hive remote heating control** – it allows the user to remotely control heating and hot water from a smartphone, tablet or laptop. The device has a fixed cost of £199 (£159 for British Gas customers), but claims to save the user up to £150 a year.

Hive requires a heating kit (wireless thermostat, receiver and hub) that is professionally installed by British Gas engineer, but it is compatible with 99% of UK boilers.

As we show in Exhibit 32, our AlphaWise Energy Supply Survey of over 2000 UK consumers showed that 63% of respondents were interested in using a smart system which monitors and controls gas and electricity consumption, and that of those without Hive (or Google Nest), 37% would be either quite or very likely to get it.

Exhibit 32

63% of respondents are interested in using a smart system which monitors and controls gas and electricity consumption



Source: Alphawise, Morgan Stanley Research, BCG Analysis

- **HomeCare boiler insurance** – depending on the level of cover, there is a fee of £9.50-£17 per month that covers repair costs for broken boilers, faulty electrics or leaking pipes.
- **Home Security service** – this is marketed under the ‘Safe & Secure’ product name and British Gas brand, and in essence is a security kit containing smart devices such as a motion sensor, door/window contact sensors, and smart key fobs. These devices can be tracked remotely, for example alerting the user to when the alarm was disarmed or how many people are currently home (Exhibit 34). British Gas is likely to revamp this service under the Hive brand at some point in the future.
- **Home insurance** – in partnership with AXA, which distributes and underwrites the insurance.

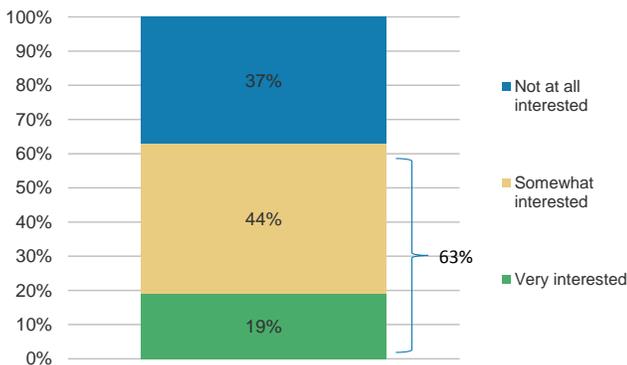
To date, these are standalone services, but we think it is possible to integrate in the future to combine services and add value. For example, a discount for home insurance is already offered to British Gas customers, but we can see a scenario where there are further discounts for customers who install the Hive smart controls.

Competitive Advantages

We see two key competitive advantages that give British Gas a strong position to take a leading role in the UK smart home market. There is also a potential to ‘export’ this model to other markets, similar to the international roll-out of Discovery’s Vitality programme.

Exhibit 33

Of those without Hive or Nest, 37% would be either quite or very likely to get it



Source: Alphawise, Morgan Stanley Research, BCG Analysis

- **Customer engagement model** – we believe that through its residential services and loyalty program (with Nectar, the largest loyalty card scheme in the UK), British Gas has a much deeper customer engagement model, relative to other utility and insurance companies.

This would enable British Gas to build insights into the specific risk profiles and customer preferences of the household – which could also lead to higher persistency levels.

As we show in Exhibit 35, our AlphaWise Energy Supply Survey of over 2000 UK consumers showed that customers were most loyal to Centrica (British Gas) and SSE.

- **Risk prevention capabilities** – we think British Gas’ range of smart home devices including security and heating controls is able to manage to monitor almost all home-related risks in real time. As we have discussed previously, we think risks in the home could reduce by 40-60% from the adoption of smart home technology.

The acquisition of AlertMe brings a proprietary platform to connect smart devices. Furthermore, we think the infrastructure is in place to install new devices and respond to alert, as British Gas has the largest engineer workforce in the UK. At FY14 British Gas had installed 1.3m residential smart meters in the UK.

Exhibit 34

British Gas’ smart home security system can detect the number of people home and when the alarm was disarmed



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Source: securityalarms.co.uk

Partnership Model

British Gas provides all HomeCare boiler insurance services in-house. For its main home insurance, British Gas has partnered with AXA whereby all users who opt to buy the product will be redirected to an AXA website, which distributes and underwrites the policies.

Today, the Hive product is a remote heating control, a separate product from the smart meter proposition and energy insights report.

Key capabilities

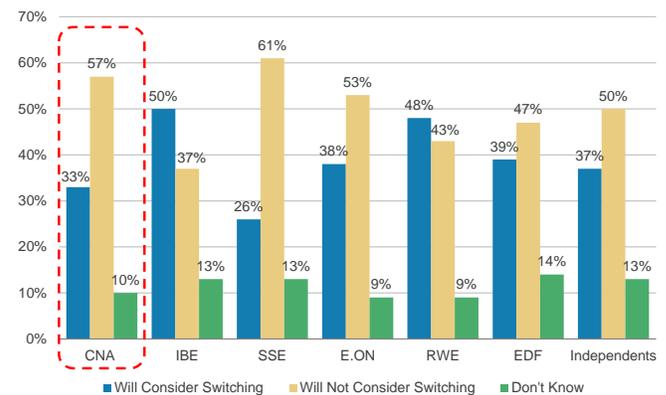
British Gas already has some standalone services that offers real-time monitoring and intervention. Any fault will be received at the service centre, which contacts the user and arranges an engineer visit. This connected boiler service is currently in trial and due to be deployed later in 2015.

For example, its connected boiler detects problems and diagnoses them remotely using a “cloud diagnostics engine”.

However, we think that an integrated feedback loop between all smart home sensors would be a more positive move towards a ‘connected object’ ecosystem. In future, predictive modelling analytics based on data collected from smart home sensors may allow for differentiated risk models and insurance pricing.

Exhibit 35

Centrica has one of the most loyal customer bases, after SSE



Source: AlphaWise, Morgan Stanley Research, BCG Analysis

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