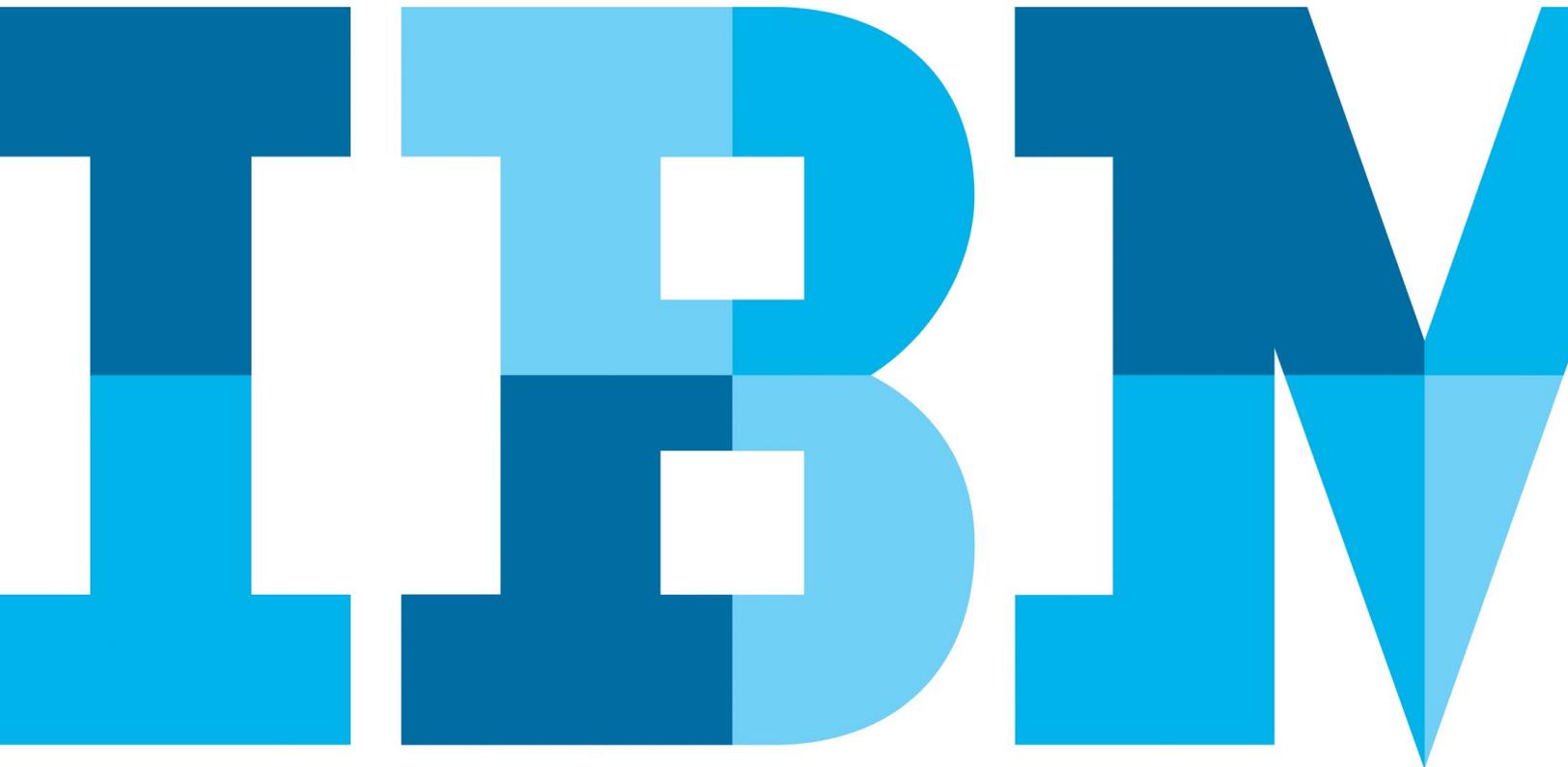# Designing a sustainable digital insurer

Learning from the digital pioneers

IBM

Executive summary

In an era of unprecedented change, technology offers insurance clients greater access to information than ever before. Out of this revolutionary advance, a new class of smarter and more demanding customers has emerged. In tandem, new insurance carriers are moving quickly to offer new compelling digital services. As with every major change triggered by technological advancement, there are clear winners and those who are unable to adapt. Insurers that embrace digitization have an opportunity to generate new business value and better engage with their customers.

Insurance industry imperatives

The insurance industry is undergoing fundamental changes. For a long time, the industry has led an existence sheltered by successful tradition, marketplace stability and regulation causing strong barriers to entry. But the times of relying on investment income to make up for underwriting losses are over. With changes in risk appetite,[1] evolving customer service expectations and the challenges of a less-loyal market, insurers are facing unparalleled external challenges. Additionally, internal pressures include concerns about product profitability. The advent of a fact-based decision-making culture and the challenge of adapting to a new and fundamentally tech savvy workforce, while much of the undocumented knowledge of the previous workforce is lost through retirement, only compound the difficulties faced by the industry.

No longer a phenomenon, but a routine way of life

Over the past decade, the dynamic between insurance customers and providers has changed dramatically. Today's customers are empowered by technology, transparency and an abundance of information at their fingertips. They expect to engage with companies in the manner of their own choosing, using the technology they prefer. They expect value at every stage of the sales cycle and beyond and, if they don't get the value they expect,

they'll find the competition only a click away. In 2005 the Internet was simpler. Twitter didn't exist, the mobile web was just an idea and broadband had only just become more common than dialup. Under these circumstances, the need to change and adapt was minimal.

Fast forward to 2016. New technologies and new ways of communicating seem to appear daily. This rapid growth has many organizations struggling to keep up. Insurers globally are striving to engage empowered customers. Digital transformation is becoming pervasive. With more than 4.88 billion mobile users worldwide,[2] the use of digital, mobile and social media is changing the nature of business for insurers. Insurance customers are fueling the demand for mobile solutions with expectations of direct access to content in a way that was inconceivable just a few years ago. Customers across all industries are demanding a more personalized and convenient experience through mobile technology. Eighty-one percent of car insurance buyers and 50 percent of home insurance buyers use price comparison websites (PCW).[3] For the insurance industry, new market entrants and aggregators, such as Google, are putting innovation front and center of their strategies. Their comparative agility and acquisition techniques have taken many insurance providers by surprise.

Established players are waking up to the possibilities offered by new channels, however. The ability to harness digital technologies to build new business offers and develop effective customer retention tools has the added attraction of a much lower acquisition cost. These companies are electing to build out of their existing IT platforms to create new digital capabilities. New developments like the Internet of Things (IoT), the network of physical objects embedded with electronics, software and sensors to enable them to collect and exchange data, are opening opportunities for disrupters to use an unprecedented level of data precision to identify flaws in the existing value chain and identify opportunities for growth.

Not just in retail, insurance too

Customers are now more willing than ever to share personal information, such as media use, lifestyle choices and location, so that services can be tailored to their individual preferences—but only with companies that offer clear benefits in exchange. On the surface this may seem to appeal exclusively to retail enterprises, with limited appeal to industries like financial services and the life and investment insurance market. IBM's view, however, is that it is highly relevant for the B2C business model and where non-advised product purchases have a very similar process journey to other non-financial services goods. Insurance is only different by virtue of the intermediated model and in being somewhat late to the party, so that other industries are setting both operational standards and expectations of customers.

An example of a turnaround toward the multi-modal direction suggested by recent technological evolution is an all-lines insurer in Germany. The company was perceived by customers as distant, expensive, old-fashioned and "not accessible." It had high churn rates, especially among millennials and Z-groups of 25-to-45 year olds. Its goal was simply to provide a user-friendly Internet platform that would deliver all products and services for everyone everywhere, at any time. Recent IBM Institute for Business Value studies suggest that 90 percent of millennials who would buy or consider a usage-based insurance (UBI) would pay USD 45 or more for UBI value-added services.

Defining the solution, the company decided on its multichannel strategy principles up front. First, it implemented a pilot, which aimed to increase customer convenience and improve agent-customer interaction (for example, a mobile claim app, Facebook Connect,[4] an online quotation function, and personalized recommendations or hand over of data). When the pilot worked, the insurer developed multiple access routes to its services, allowing customers to switch routes without loss of information and to have a holistic, transparent portfolio overview of their individual services and products.

As a result, the insurer can now better anticipate customer needs and target new customers more effectively. Churn rate has dropped, especially among younger customers. Clearly customer interactions and the willingness to share information with other customers through Facebook Connect and other tools helped.

90% of millennials who would buy or consider a UBI policy would pay USD 45 or more for UBI value-added services

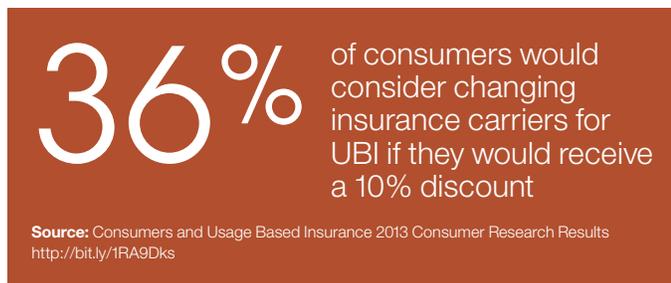**Source:** Millennials' Enthusiasm for Usage-Based Insurance Will Require a Complete Rethink http://bit.ly/1KokSEQ

Customers trust customers, and the intermediary

According to the IBM Institute for Business Value survey data 2007 - 2013, trust in the insurance industry continues to be low. The upsurge in social media has brought a whole new dimension to decisions to buy or switch goods and services providers—the customer review.

TripAdvisor, the travel review and advice website, claims to have over 375 million unique visitors per month and 84 million marketable members. A joint study conducted by Weber Shandwick and KRC Research in September 2012 reveals customer reviews were said to influence 65 percent of purchasers when selecting an electronics brand they weren't originally considering.[5] This behavior is illustrated by companies such as Amazon and Apple, who are successfully using the power of customer approval to "sell" products to other customers. While the practice is still relatively immature for insurance, there is a growing community of people sharing experiences, both good and bad, to assist fellow customers who wish to purchase a fairly priced, credible product.

Comparethemarket.com, launched in 2006, offers price-comparison services across an extensive range of products, including motor, home, life, travel and pet insurance, as well as other financial services and utilities. Its success has positioned comparethemarket.com as the UK's most recognized price-comparison site. While the number of customers seeking quotes from aggregators rose by around 20 percent over one year, 36 percent of customers would consider changing insurance carriers for UBI if they would receive a 10 percent discount. Comparethemarket.com experienced 70 percent growth.

The pragmatic way to respond to this transparency is by staying close to customer needs, ensuring products and services meet and, in places, exceed expectations.

36%

of consumers would consider changing insurance carriers for UBI if they would receive a 10% discount

Source: Consumers and Usage Based Insurance 2013 Consumer Research Results
http://bit.ly/1RA9Dks

IBM's June 2014 study, "Winning Strategies for Insurers," surveyed the use of social media to communicate with customers and found that more than 72 percent of customer respondents used one or more social networks—to chat, to stay in contact with friends and to share and find information.[6] Social networks are a great way to learn about customers' changing needs and behaviors. Using social business tools to involve customers in product creation and improvement goes a long way toward increasing trust.

The future will be integrated, automated and flexible

A March 2013 IBM Institute for Business Value report, "Insurers, intermediaries and interactions: From channels to networks," revealed that when asked about future modes of communication, over-performing intermediaries saw a strong trend away from traditional communication channels toward faster, technology-supported channels, such as online chats and social networks.[7] It's clear from this that speed and flexibility are key value drivers in the communications process. Online and personal contact is substantially improved by today's technology, and when customer insight is combined with a speedy and appropriate process the customer should have a better experience. We believe that channel integration will drive loyalty in the insurance industry as a whole, and that it is critical for insurers to address the relationship between intermediaries and customers to slow the decline in trust and loyalty.

The IBM Institute for Business Value found that personalization drives higher loyalty for insurers, and that intermediaries who have the tools and information to personalize consistently across channels outperform the average of their peers by 25 percent.[8] Customers who stated that channel integration for their personal insurance shopping was high were almost three times as satisfied as their peers who experienced low integration. As well as increasing customer confidence and loyalty, survey data showed that insurers who have better channel integration sold more. High levels of channel integration resulted in 10 percent more sales. Put simply, customers do not want to be forced to buy where they search. The easier it is to switch channels, the less likely they are to switch companies. Customers want insurers who are easy to do business with.

Customers are motivated by speed, flexibility and control

If insurers are to become integrated and interconnected providers, then they need commit to becoming technologically, organizationally and culturally flexible. Often, organizations and systems supporting their various channels have grown more or less randomly and can be understood only from a historical perspective.

In the direct-to-customer world, the UK-based Nationwide Building Society is a prime example of a company that has recognized the increased competition in the sector and the need to give greater control and information "on demand" to its customers. Nationwide states: "As a mutual, we focus on creating a lifetime-value relationship for our members, rewarding most those who give us the greatest commitment. We wanted to increase crossholdings and deepen our relationship with members, and we knew that investing in the Internet channel would be a highly efficient way to achieve those aims."

In a similar example, the US-based provider, Celina Insurance Group, improved flexibility and developed an integrated partnership with its agents. Reacting to high agent turnover, Celina felt it needed to improve agency communications. Celina started with an easy-access communication system that allowed agents to conduct most transactions over the web. Building on its existing IT platform, agents were able to log in and do everything from the portal, from viewing current policies and accessing rates to engaging in instant chats with underwriters about specific policies. As a result, most of the agency's communication is now digitized and tied to enterprise business analytics that allow Celina to quickly share new intelligence.

Even with the economic market disruption of the last few years and continued regulatory change, there is considerable opportunity for "smart insurers" to adopt similar approaches and drive new business growth.

107 million

Telematics subscriptions could exceed 107 million in 2018, up from 5.5 million at the end of 2013

Source: Global Insurance Telematics Subscriptions to Exceed 100 million by 2018, but Auto Insurance Faces Dramatic Changes, ABI Research http://bit.ly/1QiyoSi

Customer insight—so much more than a marketing tool

Propositions that combine a credible product, trusted service, integrated channels and distribution reach will be critical to making the most of market opportunities. There is a wealth of customer information provided in transactional exchanges that can help insurers develop improved customer propositions. When behavioral data is used to deepen understanding of the customer's motivation in the quote-and-buy process, insurers are then able to target the right products at the right time to the right people. Insurers who approach this as an integral part of their strategic roadmap, and take the "smart" route to automating and integrating data and processes, will be the ultimate winners, as their customers will enjoy a seamless, consistent experience across the whole supply chain.

Telematics, the use of wireless devices and "black box" technologies to transmit data in real time back to an organization,[9] is also enabling the collecting of masses of data for analysis, and this is becoming a new core competency. Insurers are actively exploring how insurance telematics can assist both insurance providers and intermediaries with greater insights about their customers. Recent research from Allied Business Intelligence, Inc. (ABI Research) suggests that telematics subscriptions could exceed 107 million in 2018, up from 5.5 million at the end of 2013.

Strategic investment is critical to success

The digital investments that firms are now making are undeniably the result of hard-fought battles in boardrooms. Often, the required changes dig deep into in-flight strategies and challenge traditional practices.

For many, the success of digital initiatives is threatened by a lack of focus on the customer experience. How successful the insurance providers can be in growing market share in this environment will depend on having clear strategic direction and an accepted and funded plan to acquire and retain the target audience. Customers' preferences are constantly shaped by their experiences with a vast range of other industry products and services. Insurers need to understand this influence and respond accordingly by providing, at a minimum, the technology services (online, mobile, social communications) and transactional capabilities that are now expected as routine trading tools.

Three imperatives that drive competitive advantage for digital insurers

Global insurers are striving to engage more empowered customers and to connect them seamlessly with their ecosystem, as shown in Figure 1. Digital transformation is becoming pervasive, and insurers are trying to understand how they need to change. This section describes three factors that will drive competitive advantage and differentiation for the digital insurer:

- Creating a truly customer-focused enterprise
- Optimizing multichannel interactions
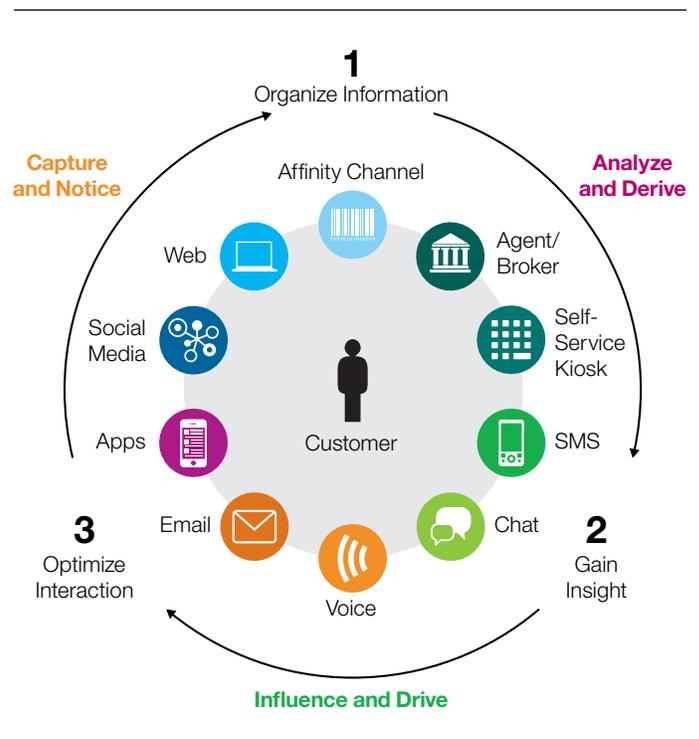- Increasing flexibility and streamlining operations

Figure 1. Customer-focused insurer

Creating a truly customer-focused enterprise

Successful companies have an institutional awareness of every customer interaction. Insurance providers that are serious about getting closer to their customers focus on high-quality interactions. They understand who the customer is (the insured, not the distributor) and work to build trust with that customer. Leading firms adapt to changes in their customer base, such as graying in mature markets, and to the development of broader channel expectations, and they foresee new trends through smarter analytics. Insurers now have the ability to predict customer behavior and lifetime value effectively. Improving how customer data is gathered, analyzed and acted upon can also guide product development and more-nuanced sales and

follow-on services. The most successful customer strategies are built on an acute awareness of each and every customer interaction, from initial search results to reading a review of an agent or paying a bill. The ability to predict customer behavior and harness customer insight in the pursuit of innovative product development can be a key differentiator, while optimized claims and improved policy servicing capabilities will drive customer retention and profitability.

Optimizing multichannel interactions
Today's customers expect to see their information online in real time, to reach call centers quickly and to engage with insurers through multiple media, including Facebook and Twitter.

Offering more communications channels and providing customers with a consistent experience leads to more satisfied customers. And satisfied customers mean more business and stable growth. Insurers must engage their customers in the manner preferred by the customer. Companies must also respond and adapt to changes in and around their customer base, such as the widespread adoption of mobile technologies, as shown in Figure 2. Integrating and expanding distribution channel options requires insurers to provide consistent and coordinated experience across all channels. Customers are looking for a seamless experience through the channels of their choice.
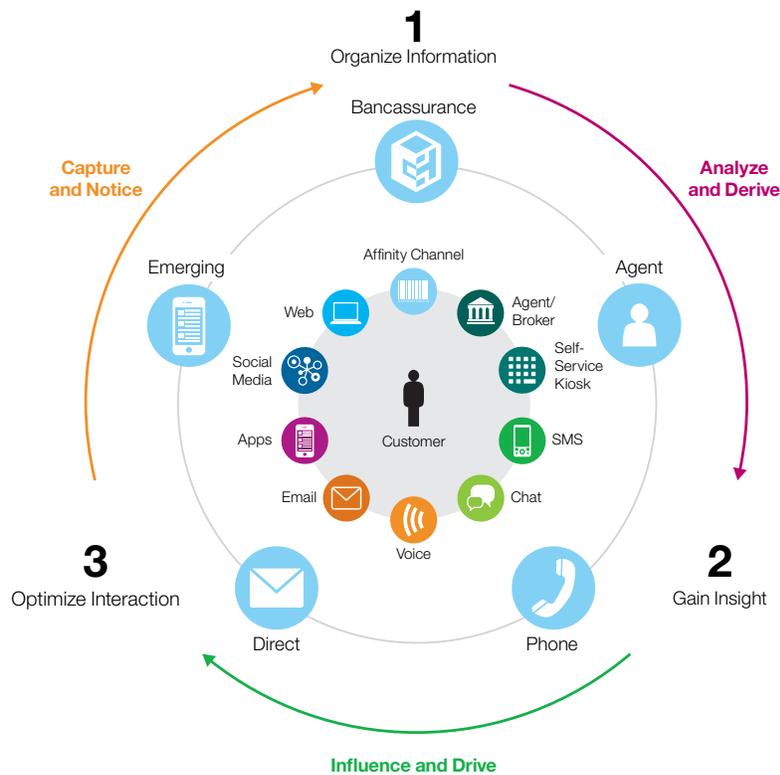

Figure 2. Multichannel interactions

Increasing flexibility and streamlining operations

Smarter technology must replace outdated IT systems. In a proactive insurance environment, leaders dynamically realign to market challenges and actively manage their customer base, resulting in an increase in revenue per customer and reduced operating costs. They streamline their businesses by looking for opportunities to combine processes along functional and geographic boundaries. They develop an operating model that is responsive in terms of people, process tools, technological progression and insurance product innovations. There are clear short-term benefits to this approach, such as the elimination of redundant resources and simplification of the business.

These changes can only occur when IT systems are modernized and made more flexible. Current systems used by many insurers are costly and limit the full potential of data analytics. In an industry rife with consolidation, corporate acquisitions have added to the complexity of many firms' information infrastructure, creating a patchwork of manually intensive business processes and IT functions.

A scan of the digital insurer landscape

The transformative potential of digital technologies in the next decade is immense, and huge technology breakthroughs are expected in the insurance industry. The value chain will be optimized fully or in parts across sales, service and operations, as digitization in the marketplace presents both threats and opportunities. To this end we classify three waves of response.

The first digital wave is mainly about "another channel" or e-commerce through which to sell and communicate. This is already happening and even the most traditional insurance providers are adopting it. Global insurers are developing applications on tablets to communicate or to improve productivity and speed of service. IBM Interactive Experience,

in partnership with Apple, has developed several applications that can be readily integrated and used. Examples of front-end digital apps include:

- Retention apps
- Advisor alerts
- Case advice

The second digital wave is tied to the enablement of new business models to facilitate an economy of outcomes. Information is shared through connected devices, and helps customers achieve the outcomes they care about. IBM has developed telematics-based solutions for "accident emergency calling services" that trigger a call to a call center through a telematics device and mobile apps when an accident occurs. These can be sold to policy holders as an add-on. Some insurance providers offer devices that customers install in their car. These monitor driving and if the driver is judged safe, then he or she benefits from a reduced premium. Similarly, insurance providers are monitoring Apple Watch applications that monitor how people sleep, how much they exercise, and what they eat. If certain guidelines are followed, health insurance premiums decrease.

The third digital wave is about having automation and efficient operations in place. Real-time analytics providing platforms can then manage digital footprints and consumption. IBM's Insurance Service Hub is one example of a data exchange.

IBM Insurance Service Hub connects different industries together—a healthcare provider or car repairer could communicate with the insurer to offer personalized and digital services to their customers. This approach improves customer engagement, while reducing cost per claim and speeding up the process. It also brings into play accurate and timely data from third parties like pharmacies or car repairers.

Clearly, the second and third digital waves are opportunities that need significant investments in both the insurance technology backbone and the strategic intent to change the business.

Lessons learned from the digital pioneers

Digital transformation in insurance is just beginning, and we see different and interesting characteristics for global and regional insurers. They can be summarized in the following three paths.

- **Path 1:** Create and integrate digital operations and processes to deliver the customer value proposition. Operations are optimized, but the insurer is not effectively tapping into new revenue opportunities.
- **Path 2:** Enhance, extend or reshape the customer value proposition with digital content, information, insight and engagement. This path generates transformation in customer value, but it's a challenge to deliver the value proposition efficiently, while continuously innovating.
- **Path 3:** Build a new set of capabilities around the transformed customer value proposition and operating model in lock-step. This path creates a "wow" factor—excellent value improvement is delivered effectively, efficiently and sustainably.

Several insurance providers are creating the basic digital delivery capability required to improve operations and engage customers across multiple touch points. Insurance providers have also tried to enhance or augment physical products or services with digital content, information, insight and engagement. In fact, most traditional insurance carriers are creating mobile apps and are starting to position themselves in the digital world.

Some companies have found that they can obtain customer data through, for example, wearable devices (Fitbit, for example), and then use that real-time data for life underwriting and pricing. The capability can then even be sold to other insurers as a way of recouping some of the investment.

There are insurers who are integrating digital capabilities with physical elements of the value delivery around the customer touch points. For example, some insurers are offering telematics products digitally, while some are embracing social business and models. They have all built a new set of capabilities around the transformed customer value proposition and operating models in lock-step. Some insurance carriers have even redefined the value that is delivered to customers by redefining the "system"— for example, by replacing physical with digital (where applicable) or building fully integrated digital or physical value propositions and revenue and pricing models.

One UK-based insurer uses social media sites for recruiting, and their mobile apps not only integrate for a single view of policies, but also offer some retail-like features, such as rewards—for example, free coffee Mondays and other retail rewards. This insurer has also developed an exchange that allows a driver involved in an accident to exchange, by way of text or email through the app, policy information with the other driver. This illustrates another growing part of digital in this area, especially for life insurers: new partnerships. Partnerships extend brands and increase customer engagement, encouraging the customer to think of the insurer as a partner for life—not just for discrete moments (death, accident, floods and so on).

Defining the true digital insurer

A digital insurer is not defined by number of agencies, apps or user experience. Launching a new mobile app does not necessarily turn a traditional insurer into a digital insurer. Neither does closing down a few or even all of its agencies. A true digital insurer is built on its value proposition that most of its products and services are delivered digitally. Its customers expect to use digital channels for their day-to-day insurance activities. The digital insurer's infrastructure is optimized for real-time digital interactions, and its culture embraces rapidly evolving digital technologies.

Designing a sustainable digital insurer

A true, digital insurer has a sustainable business model, optimized through digital technology for its customer interactions, products, processes and data. Successful digital insurers are appealing at the customer-facing side, and efficient on the administrative side. They use mobile and digital technologies to lower their cost to serve and, at the same time, enhance their services.

The three paths to digital transformation come with challenges. Realizing the value of optimized operations by extending into new revenue models and transforming the customer experience is a challenge in Path 1. Delivering innovative value propositions effectively and efficiently, and being able to innovate in lock-step with customers, is a challenge in Path 2. In Path 3, the most difficult challenge is how to balance and stay aligned across the dimensions.

What, then, should insurance providers prioritize? Typically, companies will look first to define their value proposition, then their operating model and, finally, how to package and go to market.

However, most insurers are already on their journey of digital transformation, and yet they have different levels of maturity. Some insurers are very mature, while many are in varying phases of using, extending or redefining their business models. We recommend that insurance providers first package what is available, then design newer operating models and deliver the value proposition. Delivering value is a continuous process and should be seen as a journey. IBM can assist insurance providers in:

- Digitally optimizing interactions with insurance customers, affiliates and providers to give an edge to newer add-on services
- Digitally optimizing processes, which enables the integration of all different user types through different interaction technologies into one operating environment
- Digitally optimizing insights, using smarter analytics methods to align, anticipate, act and learn to either fight fraud or develop better pricing
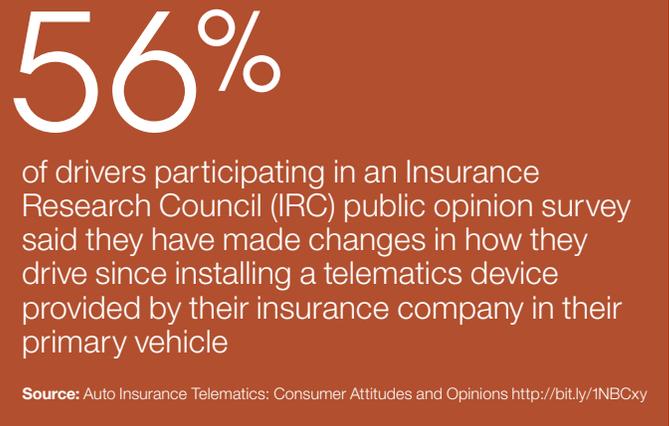
56%

of drivers participating in an Insurance Research Council (IRC) public opinion survey said they have made changes in how they drive since installing a telematics device provided by their insurance company in their primary vehicle

Source: Auto Insurance Telematics: Consumer Attitudes and Opinions http://bit.ly/1NBCxy

Digitally optimizing interactions

Digital channels are where customers conduct most of their basic insurance buying and payment transactions and should be at the center of every insurer's distribution strategy. For customer convenience, insurers should provide security-rich services through digital channels. When a personal touch is

more important, insurers can also use digital technologies to aid the interactions. Such interactions may also change the behavior of customers and users. A recent Insurance Research Council (IRC) public opinion survey suggests that drivers have made changes in how they drive since installing a telematics device provided by their insurance company in their primary vehicle. Also, some leading insurers today differentiate themselves by offering document management apps. Customers do not need to go to the post office to send documents in, but instead they just take a photo of evidence like receipts and the app sends them to the insurer. For the insurance provider, this reduces scanning costs, aids integration with core processing systems and reduces data errors.

Digitally optimizing processes

High operating costs contributed to the failure of early digital-only pioneers. Many processes were still manual. Customer experience was inconsistent and fragmented because business processes took too long, were prone to errors and lacked transparency. Because insurers need an end-to-end view of the customer journey beyond initial digital interactions, they should invest in digitizing user signatures and forms to create a paperless environment. Leading insurers consolidate and streamline back-end business processes onto an enterprise business process management system and eventually achieve straight-through processing. Insurers can then create business value by integration with partners, including agencies, intermediaries, garages, hospitals and so forth. For example, the insurance operations of the future architecture from IBM provides a common platform that enables this next generation of customer interaction. The platform optimizes processes for quality, efficiency and cost, while improving controllability and transparency by bringing all user groups onto the same platform.

Digital optimizing insights

Direct contact and a handshake are still the most effective way to deepen the insurance customer relationship, but not all insurers can afford to do this for all of their customer segments. Through better customer insight, insurers can invest in personalization without expensive face-to-face interaction. For example, IBM Watson™ uses multiple algorithms and cognitive computing systems, which could enable insurance providers to perform better semantic searches, better content analytics, federated search and analytics-fueled personal services to create more-personalized experiences for their customers.

Conclusion

Digital insuring is about branding to some insurers. For others it is all about digital channels. Transformation into a true digital insurer is much broader and deeper. Across all channels, insurers must weave face-to-face intimacy into digital interactions, in addition to adding digital convenience to personal engagements. Digital insurance organizations are expert in the digitization of processes and the extraction of insight from data. The company's strategy, business model and culture are infused by digital thinking. The wave of new entrants, game-changing technologies, and customers moving to digital services and platforms represent both challenges and opportunities. Insurance providers must evolve and adapt or be left behind. Those that are most adept at harnessing digital technologies can become industry leaders.

For more information

To learn more about the concepts discussed in this paper, please contact your IBM representative or IBM Business Partner, or visit the following website: **ibm.com**/industries/insurance/

Additionally, IBM Global Financing provides numerous payment options to help you acquire the technology you need to grow your business. We provide full lifecycle management of IT products and services, from acquisition to disposition. For more information, visit: **ibm.com**/financing

About the authors

Dr. Indranil Nath, IBM VP and Executive Partner, Insurance, Industry Solution & Sales, IOT Europe, has more than 25 years of experience in IT and has performed a number of major engagements particularly relevant to digital insurance, information technology delivery, process transformation and automation and operational excellence in the insurance industry. Before his current position, he was the insurance sector leader for Japan. He is a Fellow of the Chartered Management Institute, a Chartered Fellow of BCS, the Chartered Institute of IT, and a member of the Chartered Insurance Institute in the UK. Indranil has many articles to his credit in the areas of training and development, business and technology management and software engineering in the insurance industry. Indranil can be reached at Indranil.nath@uk.ibm.com

Other contributors are Dr. Juergen Huschens, Edith Phillips, Praveen Velichety and Mark Gill.

[5] Bradford Williams, Bradley Honan."Buy it, Try it, Rate it - Study of Consumer Electronics Purchase Decisions in the Engagement Era". Joint study by Weber Shandwick and KRC Research, September2012

[6] Christian Bieck and Dr. Andrea Cornelius. "Winning Strategies for Insurers: How Industry Leaders are excelling outside the comfort zone". June 2014

[7] Christian Bieck, Prof. Dr. Peter Mass, Dr. Des. Tobias Schalager. "Insurer, Intermediaries and interactions: From channels to networks". December 2012

[8] Christian Bieck and Anthony Marshall. "Digital reinvention: Trust, transparency and technology in the insurance world of tomorrow". January 2014

[9] http://www.gartner.com/it-glossary/telematics

[1] According to the Eight Biennial Global Insurance Enterprise Risk Management Survey, June 2015 -The Rise of ERM as a Strategic Partner by Tower Watson; Many more insurers across the globe now consider risk appetite and risk tolerance statements, the foundational elements of enterprise risk management (ERM), highly important to their company's ultimate vision for their ERM program—a sizable 15-percentagepoint increase compared to 2012 (76 percent versus 61 percent). Only risk culture (78 percent) ranked higher in importance

[2] Number of mobile phone users worldwide from 2012 to 2018 (in billions) - The statistic shows the total number of mobile phone users worldwide from 2012 to 2018. For 2017 the source projects the number of mobile phone users to reach almost 5.3 billion. For 2015 the estimate shows at 4.88 billion. Source: Statista Inc. is one of the leading statistics companies on the internet.

[3] Kate Downer, Aino Pietikäinen and Charlotte Crichton with Sania Haq, Rhiannon Jones and Fiona Pannell. "Price comparison websites: consumer perceptions and experience", A report by RS Consulting for Consumer Futures. July 2013

[4] Facebook Connect is a set of authentication APIs from Facebook that developers can use to help their users connect and share with such users' Facebook friends (on and off Facebook) and increase engagement for their website or application. When so used, Facebook members can log on to third-party websites, applications, mobile devices and gaming systems with their Facebook identity and, while logged in, can connect with friends via these media and post information and updates to their Facebook profile.