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Accenture Technology Vision
for Insurance 2015

Digital Insurance Era: Stretch Your Boundaries

High performance. Delivered.

INTRODUCTION

A new "We Economy" is bringing change to the insurance industry whether carriers are ready for it or not. Those that welcome this collaborative new economy have an opportunity to embrace, enable and monetize disruption, placing them on a path of higher growth for the future.

Last year, we began to see the industry leaders respond positively to this disruption and start to reimagine their businesses for the digital era. We predicted that insurance's "Digital Transformers", many with deep resources, huge scale and process discipline, were about to rewrite much of the digital playbook. They would use technology not just to improve their internal processes, but also to create and exploit entirely new opportunities for growth.

This year, our Technology Vision shows how these pioneering insurers are fundamentally changing the way they look at themselves; leading carriers are quickly mastering the shift from "me" to "we." They are stretching their boundaries by tapping into a broad array of other digital businesses, digital customers, and even digital devices at the edge of their networks. In the process, these forward-thinking companies are not just transforming insurance, but are looking to reshape entire markets and change the way we work and live.

Every year, Accenture's Technology Labs collaborates with Accenture Research and a large number of business and technology specialists to pinpoint the emerging technology developments that will have the greatest business impact on insurers in the next three to five years.

This year's Accenture Technology Vision highlights five themes that will catalyze the growth and transformation of the insurance industry's digital power brokers of tomorrow.

1. **The Internet of Me** is changing the way people around the world interact through technology, placing the end user at the center of every digital experience.

2. Digital devices at the edge, where the digital and physical worlds meet, are powering an **Outcome Economy** and enabling a new business model that shifts the focus from selling things to selling outcomes.

3. **The Platform (R)evolution** reflects how digital platforms are becoming the tools of choice for building next-generation products and services—and entire ecosystems in the digital and physical worlds.

4. **The Intelligent Enterprise** is making its machines smarter—embedding software intelligence into every aspect of its business to drive new levels of operational efficiency, evolution, and innovation.

5. **Workforce Reimagined** sees advances in more natural human interfaces, wearable devices, and smart machines extending intelligent technology to interact as a "team member," and working alongside employees.

Beyond insurance

The emergence of the new "We Economy" is sure to bring profound change to the insurance industry. The transition has already started, led by those carriers that welcome disruption as an opportunity to outpace their less agile competitors and to discover new paths to growth.

Shaping a positive response to such far-reaching change is not a trivial issue. Insurers face extensive transformation as they seek to redefine their role in the face of rapid advancements in big data, robotics, nanotechnology, genetic engineering, artificial intelligence, and many other technologies that promise to change our world dramatically in the next decade.

75 percent of insurers believe that, in the future, industry boundaries will dramatically blur as platforms reshape industries into interconnected ecosystems.

Most insurers are still tied to a business model based on pooling risk, calculating average pricing and generating gross premium income. This model will come under increased threat in the future as the Internet of Things, big data, digital channels, and artificial intelligence enable carriers to assess and price risk directly and individually.

But the leaders are already thinking about what their role will be in an economy where service is personalized and real-time, measured by outcome and delivered through powerful digital ecosystems. They are preparing to use their digital advantage to stretch their businesses beyond the boundaries of the enterprise—and of traditional insurance.

35 percent of insurers are comprehensively investing in digital technologies as part of their overall business strategy; 29 percent are investing in selected business units only.

For brave insurers, digital technologies and new sources of rich data also bring new possibilities for underwriting, opportunities to take out significant costs though machine learning and other automation strategies, and powerful ways to differentiate by finding new sources of customer value and enhancing the customer experience. The Digital Transformers are thus taking a two-speed approach to exploiting new technologies.

They're addressing their short-term needs by improving specific processes and products, while at the same time investing in their future by exploring the transformative potential of digital. They tend not to have a digital strategy as such, but a business strategy that is altogether digital. Their digital investments are directed less at specific processes or operations than across the enterprise value chain.

These pioneers have realized that digital technology is not just about driving market differentiation, stronger customer relationships and better quarterly returns. It is also about collaborating with other organizations to effect long-term change and shape business outcomes in ways that were not possible before. And it is about insurers revisiting their core purpose within society and what that means in the digital world.

The objective of insurance has always been to manage the risks inherent in growth, progress, and innovation, and that is a purpose that is more relevant than ever in a world of accelerated change. When automobiles upended the ways that societies and economies worked in the 20th century, insurance helped smooth the risks and make the horseless carriage a safe reality. Now, with the first driverless vehicle poised to become a commercial reality, insurers once again have the opportunity to be the enablers of a disruptive technology that will change the way we live.

Here, as before, it is insurers who should mediate the changes and mitigate the risks. There is no innovation without regulation, and no industry better placed than insurance to take on the responsibility of governing the dangers of disruptive new technologies.

Everything is connected

Consider the rapid growth of the Internet of Things. It is potentially bringing every insurable asset, life, and activity into the digital realm, creating a new world of possibilities for insurance. Forward-thinking insurers are using these connections to offer new services, reshape customer experiences, and enter new markets by creating digital ecosystems.

In the emerging vision for the connected home, the entire home will soon become a single connected entity, both internally and with an ecosystem of service providers, each of which monitors and reacts to data that's relevant to itself. This includes the security team, emergency services, and of course, the insurer.

Home owners will receive a variety of data, from energy consumption levels to alerts and even surveillance video feeds, on their mobile devices or any other channel they prefer. In this ecosystem, how can the insurer go beyond offering cover to help customers manage risks and prevent accidents that would lead to a claim? And how can it mitigate the risks of this technology breaking down or malfunctioning?

BNP Paribas Cardif in Italy already offers Habit@t, an insurance package that uses technology to secure customers' homes. Habit@t employs sensors to monitor the home, even when no one is in. In case of danger—fire, smoke, flooding, lack of electricity—it alerts the customer and the operations center.

According to BNP Paribas Cardif: "These types of offers will typify your future relationship with your insurance providers: they are no longer there simply to assist you after an incident. They now help you anticipate incidents and limit their consequences, while improving your comfort and security on a daily basis."[i]

In healthcare, Apple and Humana in the United States have partnered to let consumers share Apple HealthKit data with the Humana Vitality app[ii]. HealthKit brings together wellness data from wearable devices and apps, letting consumers track and share their daily steps walked, calories burned, heart rate readings, and other data.

In exchange for their data relating to healthy behavior, customers receive financial incentives such as discounts on their monthly healthcare premiums. Here, the insurer's role isn't simply to provide health insurance but also to help customers lead healthier lives. What does it mean for society when the focus is on monitoring patients to keep them healthy rather than on treating them when they're ill?

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And in the auto insurance sector, the connected car is bringing disruption and opportunity. Many insurers already use car telematics to personalize risk assessment and pricing, or even to offer usage-based products. Some are using it to offer a range of value-added services like roadside assistance and traffic alerts, vehicle security, driver coaching and so on.

Looking a little further into the future, driverless cars have the potential to turn the auto insurance industry on its head. Again, leading insurers are starting to forge new partnerships and build ecosystems that will allow them to remain relevant in a world where personal auto ownership will be rarer and where the nature of the risks they manage will be vastly different.

BMW and Allianz have agreed to offer usage-based insurance underwritten by Allianz for the car manufacturer's i3 and i8 electric vehicles in the UK[iii]. And State Farm, the US's largest personal lines auto insurer, is collaborating with Ford on autonomous driving research[iv]. Together, the companies are assessing whether driver-assist technologies can lower the rate of rear collisions.

And in many segments of the market, the need for traditional insurance cover is slowly evaporating. In auto insurance, for example, the imminent arrival of autonomous vehicles together with a trend away from owning cars might shrink the size of the addressable market. Similarly, a combination of hardier, high-yield crop varieties and big data for more accurate forecasting of crop yields is starting to erode the market for crop insurance. Insurers must think about new business models and revenue streams to compensate for those that slow down to a trickle or even disappear in the years to come.

Tomorrow's digital insurance leaders

As the earlier examples illustrate, forward-thinking insurers see great potential to make a difference—and to make a profit—by operating within ecosystems, not just as individual corporate entities. Working in concert with players from other industries, leading insurers are considering how to tackle significant challenges that societies, organizations and people will face in the future. Whether under their own brands or as partners for other companies, they will play a role in transforming centuries-old modes of transportation; in raising the quality of healthcare by tackling it holistically, across many industries from hospitals to insurance and robotics; and much more besides.

Insurers have an opportunity to embed themselves in tomorrow's customer-centric digital ecosystems, become the regulators of the disruptive technologies of the future, and help to enable progress. This is an opportunity they should not squander.

64 percent of insurers plan to engage with new digital partners in the insurance industry.

45 percent of insurers aim to find partners outside of insurance.

2015 Technology Trends

TREND 1

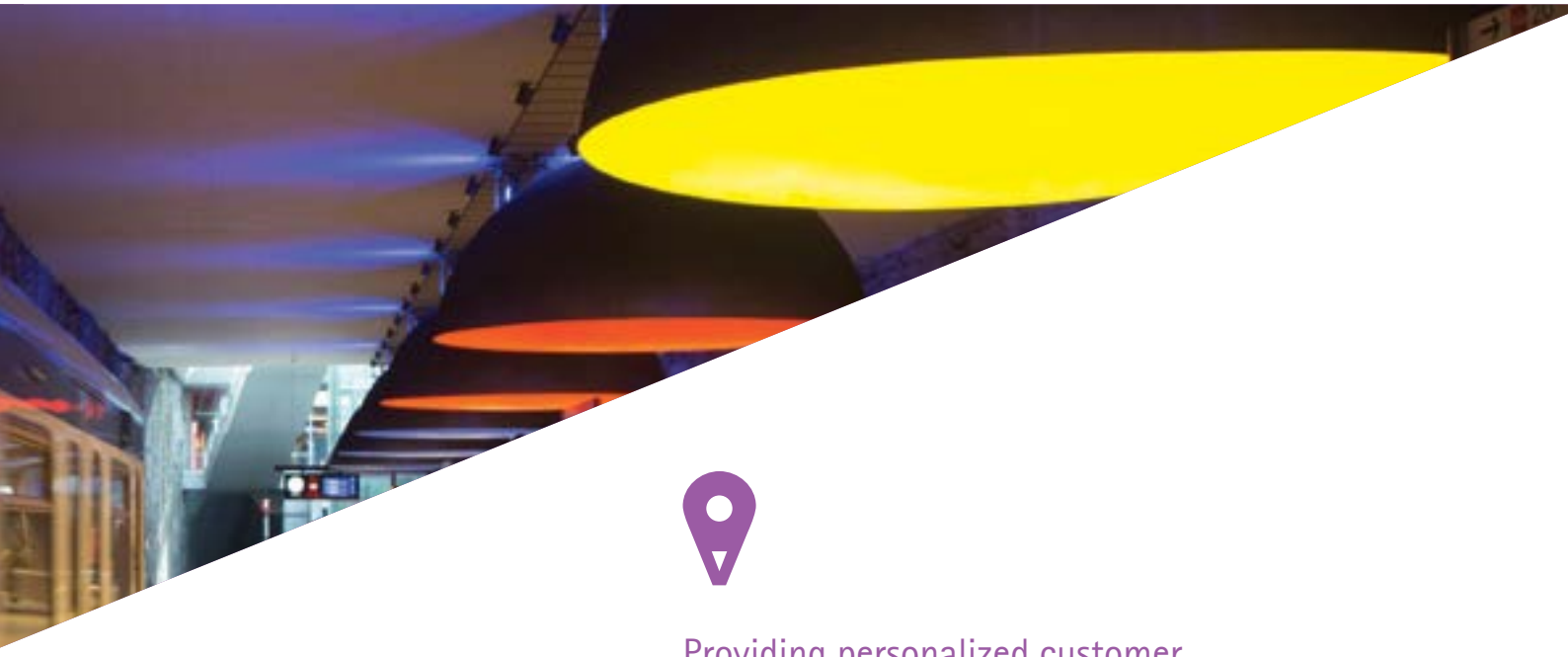
The Internet of Me:
Our world, personalized.

As everyday objects are going online, so too are insurance customer experiences. A proliferation of digital channels is reaching deep into every aspect of individuals' lives and organizations' businesses. Forward-thinking insurers are changing the ways they build new applications, products, and services.

To gain control over these points of access, they are creating personalized experiences that engage consumers and satisfy them at higher levels than before—without breaching the customer's trust.

The insurers that succeed in this new "Internet of Me" will become the next generation of industry leaders.

Much of the internet's appeal lies in the way it enables us to personalize our lives. My newsfeed. My playlist. My book recommendations. But we are just at the start of a personalization revolution that will see every experience become a digital experience as ordinary "things" become intelligent devices.



Providing personalized customer experiences is a top three priority for 73 percent of insurers.

Today, there are digital parking meters, smart refrigerators, adaptive security systems, connected cars, and much more. Enterprises across industries are using these devices to create connected worlds in which their customers' preferences, habits, and context are woven together to make daily experiences simple, more interesting, and personal.

In this trend lies both danger and opportunity for insurance carriers as emerging channels such as wearables, connected TVs, connected cars, and smart objects coalesce into the "Internet of Me." Today, the handful of variables carriers use for underwriting and pricing seems severely limited.

In the emerging interconnected environment, insurers have the customer insight (from big data analytics) and the customer interfaces they need to build tailored products and services and to more accurately price risk for individuals, specific businesses and their contexts. It is their opening to change the perception that insurance is a commodity product that offers little value until the consumer makes a claim. Instead of simply selling cover, insurers could form part of a hub of services that contribute to people's day-to-day lives.

In the process, providers that are criticized for their infrequent and impersonal interactions with consumers could embed themselves in a range of customer-centric offerings and become a more regular, proactive and positive part of people's daily lives.

Personalized or commoditized?

One danger is that rivals from industries that have mastered personalization technologies will take control of these new customer interfaces and the data they yield before insurers do. Consider the fact, for example, that Google has obtained licenses to sell insurance in 48 US states[v], and in the UK provides auto and travel insurance quotes as well as mortgage quotes and even credit cards. As it expands its reach, it is gathering an ever-broader set of data on consumer preferences, as well as risk underwriting and pricing information.

Another risk is that insurance could continue to become more and more commoditized—look at the dominance of aggregators in the UK's auto insurance market who now account for 60 percent of new motor insurance policies,[vi] or how retailers such as Walmart are taking on insurance distribution.[vii] Thus, to thrive and ensure optimal profitability, insurers must focus on the customer experience and put customers at the center of their business decisions.

Features and functionality must reflect what individuals are trying to accomplish, enabling them to control, measure, and even automate parts of their lives in both the digital and physical worlds. The convergence of the digital and physical worlds through the Internet of Things is creating hundreds of potential channels that reach deep into every aspect of people's lives.

Each insurer must ask itself how it can leverage technologies such as the connected car, wearable computers, home automation, sensors in commercial environments, and more, to create compelling new experiences for its customers. Since customer needs are not dictated by the boundaries of the industrial economy, it must also consider which partnerships will help it to deliver digitally enabled, highly personalized, and acceptably secure solutions to its customers.

Some insurers—particularly in the auto insurance sector—are already starting to take steps in the right direction. For example, Direct Seguros, AXA Spain's direct arm, has added innovative features such as remote renewal of parking tickets and automatic accident detection to its mobile app for auto insurance customers.[viii] Direct Assurance, a direct subsidiary of AXA in France, has also launched a connected driving product targeted primarily at good, young drivers. Its telematics-based YouDrive (www.youdrive.fr) offering adjusts drivers' monthly premiums based on their driver scores.

Privacy matters

As insurers create personalized experiences, they will necessarily gather and store massive volumes of personal data about consumers, their habits, and their preferences. To be comfortable sharing their data, consumers must have trust in their insurers and in other partners in the insurance ecosystem. However, as the Accenture Consumer-Driven Innovation Survey (2014) found, 78 percent of insurance customers would be willing to provide their insurer with more personal information if, in return, they were offered more personalized products, advice and risk management.

Since data collection and sharing have direct implications for an insurer's ability to compete for mindshare in the Internet of Me, digital carriers must improve their competency within three components of trust: security, privacy, and transparency.

Why now?

The customer experience matters more and more: 65 percent of consumers switched at least one of their providers in 2014 due to poor service, according to the Accenture Global Consumer Pulse Survey. This figure has been increasing steadily year by year, up from 49 percent in 2005.

Beyond mobility: Intelligent connected devices—including cars, homes, and wearables—are creating a rapidly expanding world of access to the insurance customer.

Rising consumer demand: Two-thirds of consumers are expected to purchase a connected home device within the next five years, and the ownership of consumer wearables is expected to double year over year by 2016.[ix]

Contextual experiences: Big data analytics solutions, combined with the proliferation of edge devices collecting highly contextual data, are allowing businesses to craft experiences that are unique to each user.

Personalization everywhere: Insurers integrating personalization with their core product or service are finding a significant competitive advantage. Fifty percent of insurers we surveyed indicate they are seeing a positive ROI on their investments in personalization technologies.

73 percent of insurers agree: Companies have a long way to go to achieve the level of trust needed to access personal data at the level needed to make an impact.

This demands that they invest in security-related precautions designed for the age of big data. They must also be willing to demonstrate their adherence to their privacy policies—third-party audits are one way to build trust. And carriers must also be transparent about which consumer data they gather and how they use it. They should also allow their customers themselves to manage the data they are willing to share with their insurer.

Above all, insurers must demonstrate what the benefit is to consumers of sharing their data with their insurance carriers. Today's consumer knows that data is a currency and expects to see a fair exchange of value in return for sharing her personal information. Personalized pricing of motor insurance from telematics data is just a start. Insurers must give more convincing answers to the question, "What daily benefit is there for me in sharing my private data with you?"

At a strategic level, carriers may need to decide whether they want to own and manage the data themselves, or do so in partnership with brands—Amazon, Google, and Facebook, for example—that already control deep pools of personal data and have earned the trust of a vast proportion of consumers.

Who's in control?

Controlling Internet of Me experiences is a lucrative role that is entirely up for grabs. It's for each insurer to evaluate whether it will take this leading role in the Internet of Me or play a quiet but essential role in enabling tomorrow's personalized digital experiences by managing and underwriting risk in a highly personalized manner on behalf of ecosystem partners.

Insurers that embrace the Internet of Me concept will find themselves sustaining higher levels of engagement, and in turn, opening up whole new vistas for growth. They will become embedded in customer experiences that make everyday life and business smoother and better. Those that don't, face a future of commoditization and a steady erosion of revenues and market share.

The trend in action—"sorta-me" is no longer good enough

"We believe insurance can be sleek, modern, technologically savvy, and as in-step with your life as, say, your smartphone, your Spotify playlists, or your Fitbit." [x] That's the manifesto that Esurance launched with a 2015 brand campaign called "Sorta You Isn't You"—an effort to position the carrier as a provider of services that are tailored to the needs of each customer.

The wholly-owned subsidiary of Allstate has, over the years, introduced programs like DriveSense and DriveSafe, which allow customers to customize aspects of their auto cover by using telematics. Its latest offering is CoverageMyWay, which helps individuals choose insurance coverage options that make sense for them.

Using complex algorithms and data from millions of insurance shoppers, CoverageMyWay strives to deliver a better quoting experience. It uses the information customers provide—including vehicle data, driving history, and family details—to prioritize the available options.

The controversial, car-wrecking actress Lindsay Lohan appeared in the first Esurance advertisement during the 2015 Super Bowl in the role of "Sorta Mom"[xi]. What better way to illustrate how limited and inappropriate the traditional model of pooling and pricing risk is in a world where insurers have access to the big data and customer interfaces they need to price risk by usage and by person in real-time?

YOUR 100-DAY PLAN

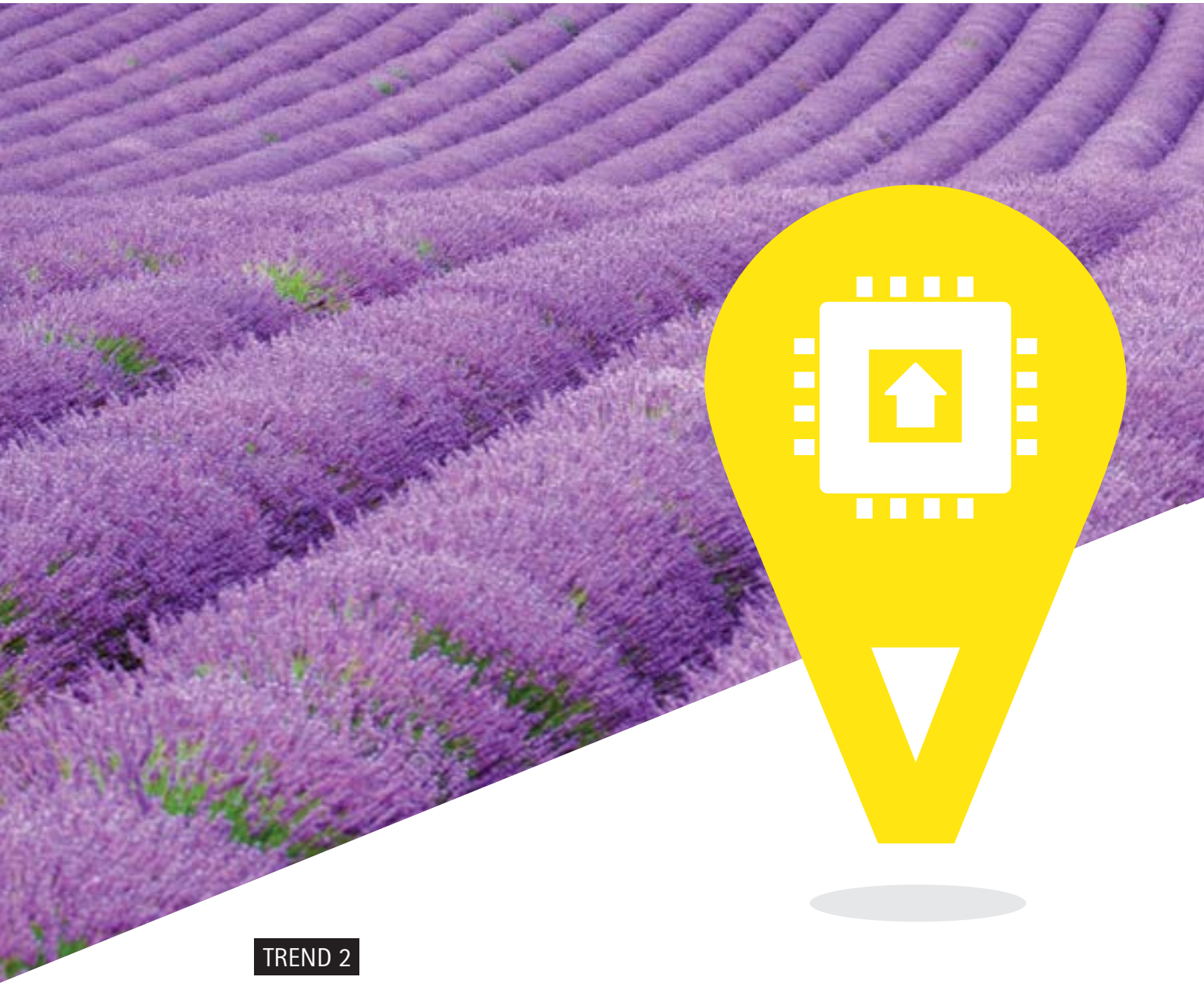
Over the next 100 days, seek a deeper understanding of who your customers are and identify opportunities to better serve their individual needs.

- Conduct extensive research into your customers' primary needs; using analytical micro-segmentation approaches, re-segment your customers on the basis of their broader needs and intentions; and identify opportunities for gaining a competitive advantage by personalizing your products and services and the customer journey.
- Start using your customer data to discover what connected devices they currently use and intend to purchase, and what their goals are with the new technology.
- Evaluate the risk of other big-data players eroding your pooling and underwriting business by replacing it with real-time mass-personalized risk management.
- Determine what your company could offer in return for customers sharing more data with you. Do not focus only on discounted premiums, but also on other value that you could offer.
- Launch a formal review of your current ecosystem of partners and define your next generation ecosystem strategy. Make this a key objective for your company at senior leadership level.
- Review and begin to update your consumer engagement processes and governance strategy. Prepare to shift toward a world where every customer has a unique view of your product, and where your product is increasingly influenced by ecosystem partners.
- Identify edge technologies that can supplement your existing products or services by providing either new channels to your customers or new data for contextual insights.
- Appoint a cross-functional team to champion and launch pilot projects that radically re-think and upgrade your customer experiences and value propositions. Ideally, align these efforts with your current or new ecosystem partners.
- Assess the readiness of your organization and its workforce to deliver superior customer-centric experiences.

YOUR ONE-YEAR PLAN

By this time next year, your business should be prepared to start extending offerings across the Internet of Me.

- Extend your pilots and deploy new client experiences and value propositions based on your learnings.
- Determine where your company holds a competitive advantage, or existing role, within your users' Internet of Me. Some possibilities include: embedding insurance and risk management into other offerings; building devices/products, software, and apps; providing data analytics and insights; or facilitating seamlessly integrated experiences.
- Confirm and deploy your ecosystem strategy. This should play to the strengths of each partner and be based on a shared view of end-customer value creation and how to share it. This will allow each player to specialize in its role and work with the other partners to deliver a complete customer experience.
- Shape, confirm and establish an organization model putting customer experience and value creation at the center, with clear responsibility and empowerment to make customer-centric approaches a reality within your company.
- Explore new risk pools associated with privacy and trust, and determine if this is an area where you could create new offerings that address the risks introduced by the Internet of Me.
- Proactively address security issues that could leave sensitive customer data exposed or physical devices vulnerable to attack or failure.
- Overhaul privacy policies to reflect a transparent, trust-centric mindset that allows you to persuade customers to provide you with more access to their data.
- Create a trust task force that is integrated across all business units. Help leaders go beyond compliance to make trust and privacy a seamless part of business development in an effort to mitigate corporate risk and liability.



TREND 2

Outcome Economy:
Hardware producing hard results.

Intelligent hardware is bridging the last mile between the digital enterprise and the physical world. As leading insurers come face-to-face with the Internet of Things, they are uncovering opportunities to embed hardware and sensors in their digital toolboxes. They are using these highly connected hardware components to give customers what they really want: not more products or services, but more meaningful outcomes. These digital disrupters know that getting ahead is no longer about selling things—it's about selling results. Welcome to the "outcome economy".

The collaborative economy is on the rise, and it's changing the way that people think about the assets they own and the insurance coverage that they need. Consider the personal transport sector, where services such as Uber and Lyft are leveraging digital channels and big data to bring new levels of efficiency to the market.

Where taxi services were once expensive in most countries, Uber is helping to bring prices down to levels where it may become cheaper and more attractive for some individuals to use its service than to own a vehicle of their own.

The sharing economy—represented by innovative businesses like AirBnB and Uber—is recognized by many insurers as an opportunity for new products and services.

- 22 percent have already developed strategies and/or products
- 37 percent are working on strategies
- 30 percent acknowledge the opportunity but have yet to respond to it

The sharing economy is making cheap, reliable transport without car ownership a reality—with big implications for P&C insurers who have made their margins from insuring durable assets.

"If I had asked people what they wanted, they would have said faster horses," said Henry Ford, creator of the world's first mass-market horseless carriage. Likewise, many of today's insurers assume that what their customers want is cheaper auto insurance for a car that spends 97 percent of the time parked[xii]. What consumers are really seeking—even if they can't quite articulate it—is a guarantee that they will have access to a safe, flexible, convenient and affordable means of transport. As individuals rely more on a digital fabric of services to do what they must in their daily lives, and less on assets that they own, so must insurers start thinking about new business models that focus on usage and outcomes rather than on pooling of risk. Some insurance pioneers are already contemplating how they can tap into digital edge devices in the Internet of Things to sell outcomes to their customers rather than insurance products.

Tokio Marine & Nichido Fire Insurance, for example, has partnered with NTT docomo to create a health insurance product that tries to prevent claims rather than simply paying out at the time of loss.[xiii] Called 'How My Body Feels' and aimed at young women, the product uses mobile technology to monitor the user's health and uses various data to make suggestions concerning healthy lifestyle options.

Rather than only servicing renewals or occasional claims, the Japanese insurer is now engaging with customers every day. It focuses on the outcome of reducing cancer risk rather than selling a health insurance product—with potential positive spin-offs for customers, insurers and society as a whole.

State Farm, the largest US home insurer, has meanwhile announced partnerships with home security companies ADT and Lowe's to install smart home-monitoring systems for policyholders. Here, it's not just about selling cover any more, but also helping customers to enjoy the benefits of living in smarter, safer homes.

Customers want holes, not drill bits

When it comes to insurance, no one wants to buy a policy. Life and health customers, for example, want to live with dignity into old age and leave a legacy for their families. Imagine the potential of an ecosystem that provides a monitoring service which manages videos and wearable information of elderly people who want to maintain their independence.

Such an ecosystem may include makers of devices such as fitness armbands, pacemakers, and even wearable bionic suits that make infirm people mobile; healthcare providers such as doctors and hospitals; and health insurers. It's not just about paying for healthcare, but helping elderly people to be heathy and self-sufficient in a world of longevity.

In the emerging outcome economy, digital insurers will increasingly sell solutions and results rather than just products and services. Powered by the Internet of Things, the outcome economy is defined by the ability of companies to create value by delivering solutions to customers that in turn lead to quantifiable results.

From smart industrial equipment to the many sensors in the modern smartphone, insurers now have the tools to gain end-to-end insights into the outcomes that their customers are trying to achieve. In effect, this enables insurers to identify, measure, and aim for their customers' desired outcomes.

With more intelligent hardware, sensors and devices on the edge of networks, at the point where the digital and physical worlds meet, organizations will increasingly shift from selling products or services to selling outcomes—for example, offering an insurance-led solution that helps a restaurant owner proactively manage business risks rather than simply insuring his business against fire and theft. 83 percent of insurers agree or strongly agree.

The underlying principle of an outcome economy is not new: marketers have long talked about selling solutions rather than products. Decades ago, Harvard University marketing professor Theodore Levitt was said to have told his students that people didn't want quarter-inch drill bits; they wanted quarter-inch holes.

But it is only now that cloud-based software analytics, visualization technologies, hardware sensors and increased computing capabilities have given companies the levels of insight and control that are the hallmarks of the outcome economy. With intelligence moving steadily and rapidly toward the network's edge, it effectively builds a bridge of data-rich feedback loops that span the "last mile" between insurers and their customers.

Why now?

Hardware is approachable: More businesses and individuals are able to leverage a vast ecosystem of tools to design, produce, and distribute hardware than ever before. It's no longer necessary to be a tech firm to build hardware.

M2M economics: Cost reductions are driving machine-to-machine (M2M) investments.

Sensor efficiency: Sensors are cheaper, smaller, and more energy efficient than ever before, allowing more sensors to be installed in more places and maintained for longer periods of time at the edge of networks without the need to service or replace them for two to five years.

M2M standards: Machine-to-machine communication standards are closer to reaching maturity, allowing for more localized and real-time decisions at the edge of networks.

Ubiquitous bandwidth: High-bandwidth wired and wireless communications are now ubiquitous in most markets.

On the edge of the network

To take advantage of these new capabilities, insurers need to start by re-evaluating their customers' desired outcomes. They must establish feedback loops wherever their customers seek value. Then, they need to incorporate the resulting insights into their business processes and product management systems.

In many cases, new hardware solutions, or the integration of sensors in existing hardware, will help to push the edge of the network closer to the customer. This new capability in hardware will not only add another layer of insights, but will also help insurers better understand the context in which their customers are operating.

Of course, insurers cannot do it all—the new leaders will be those that can consistently collaborate with others to deliver excellence across a spectrum of capabilities that include hardware. In more challenging cases, insurers might need to form new partnerships or make acquisitions to enable new capabilities at the edge.

Approximately three out of four insurance executives who took part in this Technology Vision survey said they are already strengthening their digital businesses by taking part in open innovation initiatives, using application programming interfaces (APIs) to exchange data, and leveraging technology platforms to deliver better outcomes to partners and customers. The carriers that make those kinds of connections—literally and figuratively—will outrun their rivals today and thrive in the future.

The trend in action – improving patient outcomes

Californian startup Proteus Digital Health is focusing on improving patient outcomes as a new way to create value in the healthcare industry[xiv]. The company has created a "digital health feedback system" that provides a real-time view into an individual's personal health choices and physiological responses.

This, in turn, allows patients to better manage their health and more effectively collaborate with caregivers and clinicians. Proteus integrates a tiny, inert sensor in each pill that acts in concert with a wearable device and mobile app to give healthcare providers and payers information about whether a patient is adhering to his treatment regime and the effects it has on his body.

The company aims to achieve cost savings by increasing the effectiveness of treatment and driving better outcomes for patients, payers, and providers. Proteus developed its technology in response to two trends: the rise of mobile technology and the burden that chronic diseases like diabetes is placing on healthcare systems optimized to treat the acute conditions that were most common decades ago.

According to the company, its vision is to "build a more effective healthcare system with new care paradigms focused on daily care and new information-based business models". The system has been CE marked in the European Economic Area and approved by the FDA in the US. Pricing is likely to be value-based.

President and CEO, Andrew Thompson, said in an interview with EP Vantage[xv] that the company has started discussions with health insurers. However, the focus of healthcare systems on treating patients rather than monitoring them to keep them healthy is proving to be a barrier for many health payers.

YOUR 100-DAY PLAN

Take an inventory of where your business stands, so you can be more strategic over the longer term.

- Catalog the outcomes your customers are trying to achieve and map those outcomes to your current offerings.
- Take an inventory of hardware at the edge of your network; chart the proximity of this hardware to the customer outcomes cataloged earlier.
- Evaluate existing product and service feedback loops by drawing process diagrams for your top offerings, taking careful note of how many steps away from customer outcomes your furthest data points are located.
- Identify which Internet of Things consortia might be ideal to accelerate the hardware ambitions of your business and your ecosystem of partners.
- Build a competitive threat matrix that is focused on nimble startups. Look at the way they use intelligent technology at the edge to compete for your customers.
- Evaluate options to transform your insurance products into advisory solutions that add value to customers' lives daily.
- Identify at least three new business models to pilot.

YOUR ONE-YEAR PLAN

By this time next year, embark on a hardware project, add sensors to existing solutions, and conduct pilot projects that can demonstrate insights gained from a closer relationship to customer outcomes.

- Model the impact of transitioning to outcome-based revenue streams.
- Evaluate a roadmap and pilot the transition of at least one offering or suite of offerings to outcome based.
- Evaluate your ability to deliver hardware solutions at the edge and acquire or partner with organizations to fill capability gaps.
- Appoint an outcome-driven innovation champion to work with product managers to uncover ways products can be refined to meet unmet customer needs.
- Look outside of your company for data sources that will enhance your understanding of what your customers are trying to achieve.
- Create a multiyear roadmap for integrating more hardware and feedback loops with existing products and services.
- Develop an ecosystem strategy that will allow you to work with a portfolio of potential partners.
- Embed your offering in ecosystems that allow you to become a part of customers' day-to-day lives.

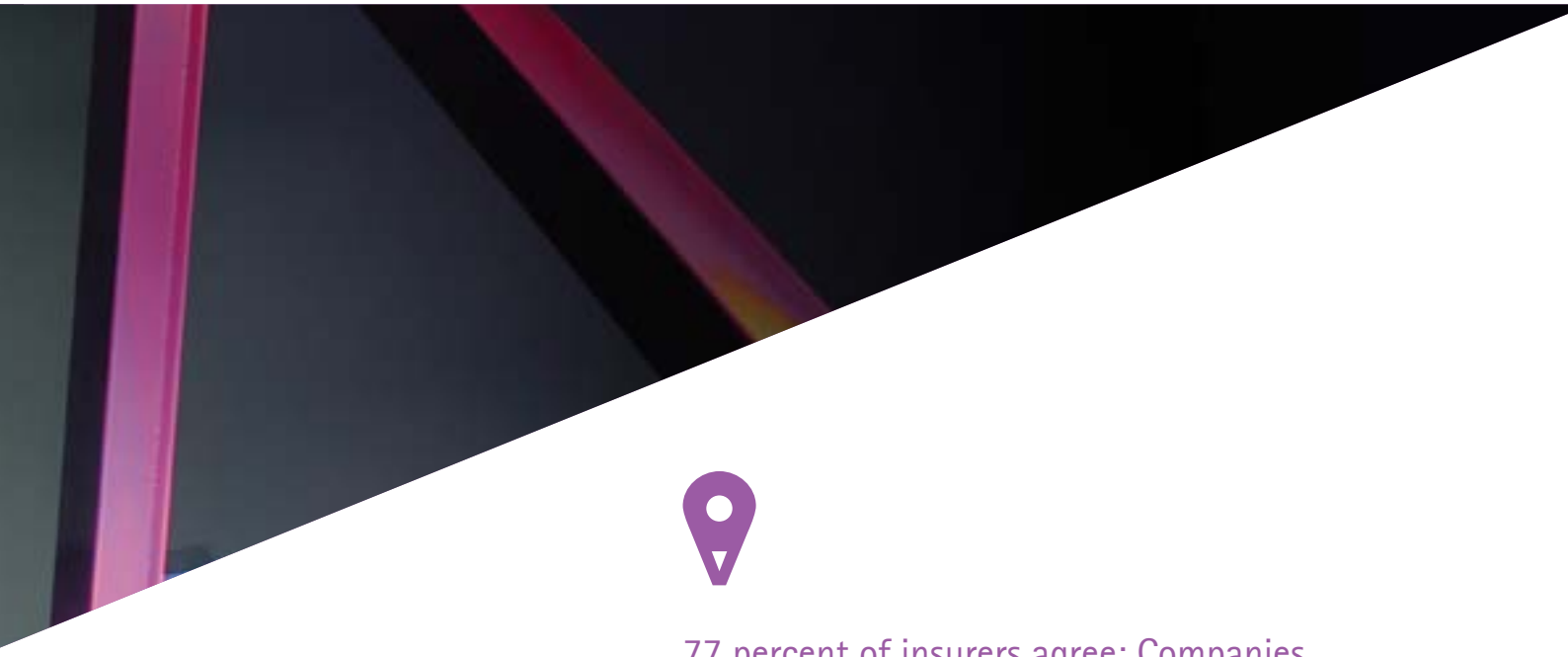
TREND 3

The Platform (R)evolution:
Defining ecosystems, redefining industries.

Among the Global 2000, digital industry platforms and ecosystems are fueling the next wave of breakthrough innovation and disruptive growth. Increasingly, platform-based companies are capturing more of the digital economy's opportunities for growth and profitability.

Rapid advances in cloud and mobility not only are eliminating the technology and cost barriers associated with such platforms, but also are opening up this new playing field to enterprises across industries and geographies. In short: Platform-based ecosystems are the new plane of competition, and those insurers that create meaningful ecosystems are the ones that will be best-placed to thrive into the future.

Over the last decade, technology and internet-born companies like Apple, Facebook, and Salesforce.com have dominated the headlines with their platform-based businesses. But now, it is established, non-tech-industry enterprises that are driving major strategic initiatives to become platform-based businesses.



77 percent of insurers agree: Companies will move toward real-time platforms and systems as enterprises adopt mobility and Internet of Things solutions.

Here, a platform is a blueprint for how companies will build, connect, and deliver applications specific to industry problems. The platforms serve as a pool of reusable functionality and capabilities to make building and evolving these applications quick and easy—and to help companies ultimately achieve better business outcomes.

In the digital economy, these platforms also serve as business-model strategies that create competitive differentiation. By combining the power of technology platforms with their industry expertise, companies are developing new business models and capabilities crucial to creating disruptive innovation, leading in key markets, and driving growth. Inherent in these platform models is the ecosystem they create and harness to deliver value.

An example of an industry platform in action is the Vitality program developed by South Africa's Discovery Group. Launched initially to reward health insurance customers for making healthy exercise and eating choices—and thereby reducing claims by shaping customer behavior—Vitality has grown into a major international platform-based business in its own right.

With a foundation of actuarial science and behavioral economics theory, and an ecosystem of more than 50 organizations, the program aims to reduce health care costs in both the short and the long term. In addition, the detailed health and lifestyle data it tracks—by means of wearables, mobile apps and other new technologies—enables the carrier to cross-sell life and P&C insurance products at more personalized prices than most competitors can offer. Today, Vitality has successful partnerships with large employers and best-in-class insurers around the world, in countries including the United States, the United Kingdom, South Africa, China, and more recently Singapore and Australia.

New ecosystems

Our research shows that most insurers (nearly three quarters) agree that the next generation of such platforms will not be led by large technology companies, but rather by industry players and leaders. Furthermore, 77 percent of respondents are using or experimenting with open innovation to integrate applications and collaborate with business partners, and 70 percent or more are either using or experimenting with APIs and industry platforms.

Such digital platforms build upon the ecosystems that are forming across industries, including insurance, as the unlikeliest partners come together to deliver innovative services and products to their customers. Whether in personal lines or commercial, and whether they focus on life or P&C, leading insurance companies are joining hands with firms from other sectors to provide more value and better outcomes to their customers.

For example, Microsoft and American Family Insurance have partnered to launch a business accelerator for startups focused on home automation.[xvi] Their aim is to nurture advances that can help lead to safer and smarter homes. American Family Insurance, the eighth-largest homeowner insurer in the US, will provide industry experience, consumer insights and a homeowner knowledge that will help the startups to succeed. In return, it gets access to the cutting-edge of connected home technology. In future, the carrier may have the opportunity to move revenues toward royalties or capital gains as it begins to invest more directly into some of these home automation technologies.

Meanwhile, commercial insurer Allied World Europe and Airbus have entered into a relationship where Allied World will offer complimentary aircraft hull insurance to airlines that purchase Airbus's Runways Overrun Prevention System.[xvii] This software is a performance-based alerting system that assists in preventing runway overruns, believed to be one of the most frequent causes of aircraft accidents.

And in health insurance, Aviva has forged a partnership with UK mobile health company babylon.[xviii] The agreement sees Aviva provide babylon's "virtual health service" app to selected customers. Babylon gives customers access to family GPs, specialist consultants, and health monitoring and treatment.

In the next wave of innovation, companies are beginning to leverage digital industry platforms to grow their businesses. Underpinned by the latest digital technologies—social, mobile, analytics, cloud, and the Internet of Things—such platforms combine a well-defined technical architecture, firm governance, and a set of technology services to enable the creation of new industry-specific applications.

Create an ecosystem or join one?

The key characteristic of platform-based insurance is that others outside the company are creating value for the enterprise—in many cases enabling entirely new digital models for the company. But to start taking advantage of this trend, an insurer must determine its unique value and role within the ecosystem.

Why now?

Digital outpacing GNP: The growth of the digital economy is outpacing gross national product (GNP), and the disparity of those capturing the growth and profitability continues to widen.

Rise of platform-based companies: According to the Massachusetts Institute of Technology, in 2013, 14 of the top 30 global brands by market capitalization were platform-oriented companies.[xix]

Digital disruption: Since 2000, 52 percent of the companies in the Fortune 500 have gone bankrupt, been acquired, or ceased to exist, due in part to the disruption of traditional industry models by digital models.[xx]

Cloud economics: Advances in cloud, mobile platforms, and application development are eliminating the technological and cost barriers associated with digital industry platforms.

Everyone's playing field: There will be more than 100 new digital industry platforms from non-tech companies as early as 2016, according to the IDC.[xxi]

Power of APIs: The technologies of application programming interfaces (APIs) are allowing insurers to open up their data and platforms for others to develop applications on and to create value.

51 percent of insurers plan to partner with major digital technology and cloud platform leaders in the next two years.

Is it the primary ecosystem leader and digital industry platform owner? Can it turn its back-office capabilities into a platform on which other organizations can build customer-facing offerings? Or does it play more of a secondary or shared role in delivering the customer outcome? Does it connect to another organization's ecosystem—for example, an auto manufacturer or a provider of wearable devices? Where and how does it connect its own ecosystem with other platforms? What are the cross-industry opportunities? What are the competing ecosystems?

From the answer to these questions, the insurer will need to decide whether to create its own platform ecosystems, partner in the development of platform ecosystems, or join one or more established ecosystems. Whichever strategic choice a carrier makes, digital business platforms are the new blueprint for how companies will build, connect, and deliver applications that address their customers' problems and opportunities.

In many cases, the insurer will accept that its offering supports another brand's value proposition rather than serving as the primary experience from the end-customer's point of view. As such, it could be wiser for the carrier to conceptualize its offering of real-time risk pricing into an app or platform that the consumer uses every day than to try to lead the customer relationship.

Is the customer more interested in downloading an insurance app to join the hundreds already on his iPhone, or in accessing usage-based insurance through a travel app's interface? It may make sense for a carrier to build APIs that can be embedded into other ecosystems rather than to try and directly control the platform.

Platform-driven ecosystems are not a far-future idea. The tools and techniques are coming together today, and the data and sources of data are readily accessible. Insurers must quickly determine which platforms and ecosystems will give their organizations a competitive advantage and define their roles in the digital economy.

The trend in action– connected car ecosystems

Many motor manufacturers are making aggressive cross-industry plays with connected car platforms, with profound implications for auto insurers. General Motors, for example, has rapidly grown its OnStar system from a standalone safety and concierge service to a connected-car platform that includes multiple partners.

Its emerging connected car platform features real-time diagnostics, safety/emergency, infotainment, navigation, insurance modules, multiple third-party apps, mobile connectivity, and more. Most traditional automakers are also building connected car platforms that straddle traditional industry boundaries; Tesla, meanwhile, started as a platform business with its electric cars.

During the course of 2015, General Motors plans to offer OnStar customers in the US an opportunity to sign up for a new service that can tell them how well they drive and provide them an opportunity to seek discounts from Progressive Insurance.[xxii]

An assessment, provided only to OnStar customers who sign up for the service, will reveal how the customer performed in important driving metrics, comparing that customer against an aggregate of other anonymous enrolled customers. OnStar will use this data to give drivers personalized driving tips. Some customers will be able to share their driving data and evaluation information with Progressive if they wish, potentially leading to discounted insurance offers.

But it's not just auto-manufacturers seeking to control the auto ecosystem. Telecoms carrier, Verizon, has created a telematics platform it provides to the likes of Mercedes-Benz, Volkswagen, and State Farm.

YOUR 100-DAY PLAN

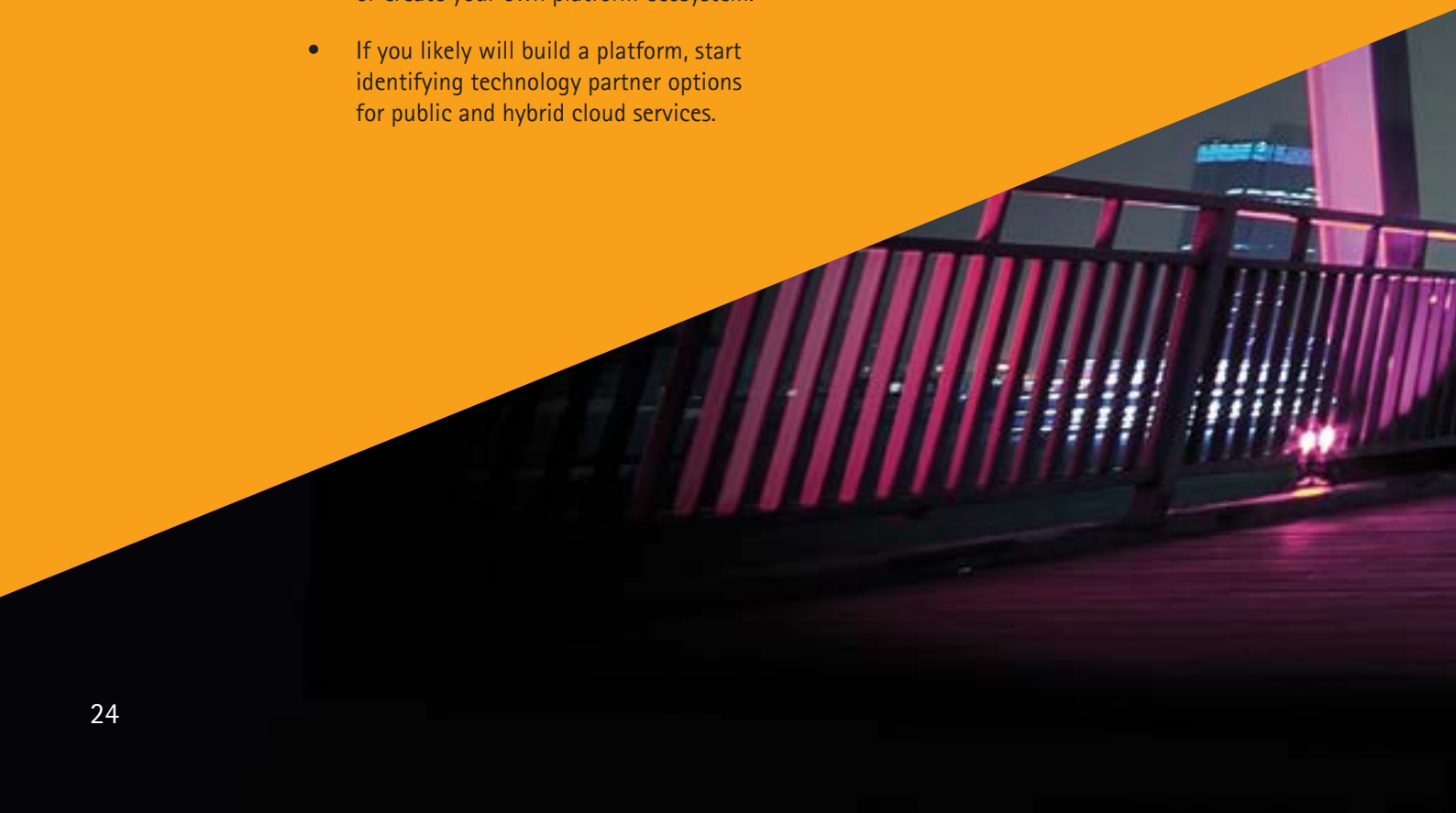
Conceptualize your business as a platform upon which others can build services. How could you, for example, package your ability to price and underwrite risk as an API others could embed into their applications and services?

- Appoint a champion to build a platform strategy across your enterprise.
- Task business development and alliance organizations to catalog the digital platforms being offered by existing partners.
- Organize a governance body to be the gatekeeper of digital inputs and outputs with external partners.
- Begin the design of your industry platform with three core components: the business model, technical architecture, and governance model.
- Create a cross-functional business and technical team to develop your API strategy and management approach.
- Identify potential digital partners and ecosystem scenarios.
- Consider if you will initially join, partner, or create your own platform ecosystem.
- If you likely will build a platform, start identifying technology partner options for public and hybrid cloud services.

YOUR ONE-YEAR PLAN

Start the transition from pilot to production phases for internal and external programs.

- Execute a multiphase pilot program to launch your platform and API programs internally and externally.
- Formalize technology partner and cloud services relationships to support your platform environment.
- Extend internal platform and API developer programs into a formal external developer program.
- Measure and report progress of the platform and API programs using a range of business, financial, and technical metrics.
- Evangelize the initial round of apps and digital partner solutions built on the pilot platform.
- Embrace opportunities for industry disruptions by expanding partner strategies to move up the value chain.



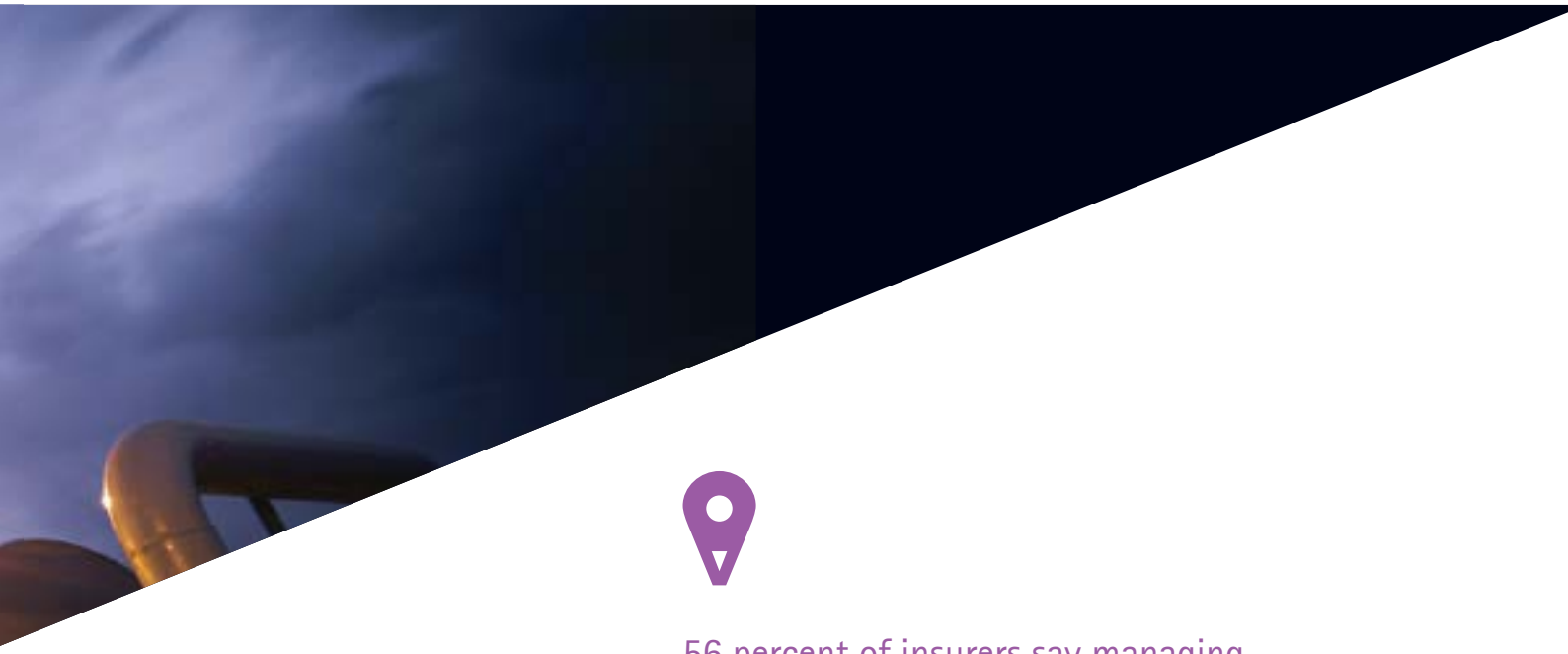
TREND 4

Intelligent Enterprise:
Huge data, smarter systems—better business.

The next level of operational excellence and the next generation of software services will both emerge from the latest gains in software intelligence. Until now, increasingly capable software has been geared to help employees make better and faster decisions. But with an influx of big data—and advances in processing power, data science, and cognitive technology—software intelligence is helping machines to make even more, better informed decisions.

Business and technology leaders at insurance carriers must now view software intelligence not as a pilot or a one-off project, but as an across-the-board functionality—one that will drive new levels of evolution and discovery, propelling innovation throughout the enterprise.

Meet Amelia. She is a contact center agent who replies to emails, answers phone calls, can hold conversations in several languages, and understands what her customers are feeling when they come to her for help. Her knowledge comes from company manuals, but she can search the web or the company intranet when she doesn't know the answer to a question.



56 percent of insurers say managing data is "extremely" or "very" challenging, considering changes in its volume, variety and velocity.

When she's really stuck, she'll escalate the query to a colleague and watch how an experienced agent handles it so she can do it herself the next time. What makes Amelia remarkable is that she isn't a human being, but an artificial intelligence platform (or cognitive agent) that learns through natural language interactions and documentation as well as by observing other agents' live interactions

She's already providing customer service in pilot projects in industries such as oil and gas. It's not a stretch to imagine that this technology from IPsoft will soon be providing service to insurance customers who need help with a claim, or supporting claims adjusters and agents as they interact with customers in the field.

Amelia is a product of a new era of software intelligence—enabled by today's vast amounts of data, cheap storage, scalable computing, and advanced data science. Here, intelligence defines a class of technologies that enables machines to make decisions—for example, dynamically controlling a central heating system.

This behavior may no longer need to be a rule configured by a human agent. Today's thermostats "learn" the homeowner's behavior, defining and evolving the rules themselves—monitoring the homeowner's schedule, for example, and automatically lowering the temperature from just before she leaves in the morning until just before she returns.

But software intelligence is now taking such capabilities much further. The next generation of devices will be able to "discover" useful connections that the homeowner might not even be aware of herself. They might learn, for instance, that 15 minutes after she turns on the treadmill, she always turns off the heat, and then take over that action for her.

These kinds of capabilities—to make decisions, to self-evolve, and to discover—represent the foundational aspects of software intelligence today. Tomorrow, cognitive computing may extend a machine's ability to sense, comprehend, and act. This will turn software intelligence into a core capability for insurers—one that not only can elevate operational excellence throughout the organization, but also can power innovation.

The big data challenge

From increasing worker productivity to improving software functionality and discovering new customers, intelligent software can be put to work to tackle perennial business problems. It is an across-the-board enabler of operational excellence and innovative software services that is applicable across many business functions. The trend that makes software intelligence really matter is big data.

For years now, insurers have worked towards the goal of becoming exceptionally intelligent organizations whose competitive edge comes from the pervasive use of data to drive decisions. Whether for managing risk, reducing fraudulent claims or driving customer retention and acquisition, carriers have worked hard to exploit actionable insights from data and drive better business outcomes.

However, the fact is that most insurers are struggling to fully utilize their data—they wrestle not only with the volume of data now available to them, but also with the many complexities of identifying, capturing, categorizing, analyzing, and sharing it throughout the data supply chain. So, what will it take to achieve this ideal—or at least get much closer to it?

The answer lies in realizing that more decisions are being made by software—and that many more decisions can be entrusted to machines. But as software takes on a greater decision-making role, it must be made smarter, too. Without this level of software intelligence, no insurer can consider itself truly data-driven and intelligent.

After all, the Internet of Things, user-generated content, and other digital data sources are producing so much new, raw data every minute of the day that human operators are not able to keep up. Machines are uniquely able to capitalize on the scale of big data so that statistical algorithms can improve their accuracy and discover entirely new associations among the data—associations that humans might not have been able to hypothesize.

Artificial intelligence becoming smarter

Software intelligence—or machine learning—is not a single technology or technique but rather a field of computational science that encompasses modern mathematics, various statistical techniques including clustering trees, probability theory, dynamic systems, and deep learning, to name a few of its key areas. The algorithms that underlie machine learning learn from data and apply this knowledge to future situations.

Maturing technology is spurring the adoption of software intelligence. The category encompasses a wide range of artificial intelligence technologies that ingest data to trigger automatic action. These technologies range from rule-based programming to machine learning, deep learning, and cognitive computing. Natural language processing for speech capabilities as well as computer vision for image recognition also come into play.

Why now?

Rising digital complexity: Half of all CIOs state that their chief concerns are solution complexity and integration difficulties.[xxiv] According to 86 percent of insurers in our survey, software intelligence will be critical to simplifying IT.

Unprecedented data volumes: IDC predicts that by 2020, there will be more than 40 zettabytes of data, 37 percent of which will be considered useful for analysis (up from 22 percent in 2013).[xxv]

Decreasing cost of storage: Counteracting the rapid growth of data is the plummeting cost of storing it, enabling companies to maintain vast data lakes that can later be used to uncover analytical value.

Virtually unlimited compute power: Companies can analyze big data at scale because they now have access to incredible computing power, largely due to the availability of cloud services.

Advances in data science: Improvements in deep-learning and cognitive-computing technologies are driving enterprise adoption.

44 percent of insurers estimate that the volume of data managed by their organization has grown by 50 percent or more over the past year.

More and more business and technology leaders at insurance carriers are realizing that their companies can use software intelligence to achieve real, tangible business benefits. At least two-thirds of respondents in our research indicate their organization is using or experimenting with intelligent technologies.

Used wisely and carefully, the power of software intelligence can give companies the operational excellence and innovative edge they need—because machines have the speed and scale, and now the intelligence, to make decisions that will have a real impact on the business.

Insurers will start by automating many of the tedious manual processes that inhibit agility as they pursue the data-driven enterprise. And once achieved, they will realize it is just the beginning—the truly intelligent enterprise will unlock many more opportunities to answer questions that were once unanswerable; indeed, to answer questions they had not even thought of asking before.

Blazing a trail

The Climate Corporation in San Francisco—acquired not long ago by Monsanto—is one example of a company blazing a trail with machine learning. It helps to protect and improve farming operations with precision agriculture sensors and systems, data analytics software, insurance products and risk management services. It doesn't simply provide crop insurance, but also advisory services that help farmers make optimal decisions.

Climate Corp. uses machine learning to dig through more than 50 terabytes of live data about weather, soil conditions, and many other sources to predict crop performance.[xxiii] Its agrochemical parent can now not only recommend the most profitable crops to plant, but also what types of seed to buy, when to plant, how to tend the crops, when to harvest, what yields to expect, and even what revenue farmers can expect at the end of the growing season.

Today, farmers are able to buy field-specific weather-related crop insurance that guarantees financial outcomes and hedges against the risk presented by increasingly variable and extreme weather events. Climate Corp. does its job so well it is essentially alone its market—a compelling example of how digital technology can help insurers build barriers to entry that rivals may find difficult to surmount.

The trend in action– predictive analytics to help people choose the right health plan

Philadelphia startup Picwell uses a recommendation engine to rate health plan options according to individual needs. This platform combines big data, predictive analytics, behavioral economics and machine learning to analyze more than 900,000 variables that affect plan selection.[xxvi]

The platform also features consumer-friendly user interfaces and engagement tools that integrate into healthcare exchanges and benefits platforms. Picwell was founded by a group of University of Pennsylvania academics specializing in healthcare and behavioral economics.

Their plan is to license the technology to customers such as employers, private and public exchanges, health insurers, health insurance brokers and others. Picwell has already finalized an agreement to integrate its technology into Aon Hewitt's Retiree Health Exchange, serving more than 300,000 retirees and their families.

The system's proprietary algorithms analyze variables ranging from a person's lifestyle and current health status to his or her tolerance for risk. The technology can make predictions about a person's future health, which can affect a plan's ranking.

YOUR 100-DAY PLAN

Develop a comprehensive understanding of software intelligence over the next three months.

- Catalog data sources and what you want to do with them. For example, is your aim to price risk in real-time and in a highly personalized manner?
- Identify the software intelligence currently in use by your company to provide a capabilities and gap analysis that takes into account the goals you wish to achieve with big data analytics.
- Catalog labor-intensive business processes and identify opportunities to invest in automation and machine-learning capabilities that can improve operational capabilities and scale analytics.
- Identify specific applications that require frequent and manual updates, data extracts, and/or a high degree of personalization.
- Map these examples/use cases against your current business processes and corporate strategy to prioritize specific opportunities —to catch up or gain new advantages.
- Cultivate your data science talent—develop a plan to build, buy, and/or partner to support your machine-learning and advanced -analytics know-how.

YOUR ONE-YEAR PLAN

A year from now, begin to permeate software intelligence throughout your enterprise.

- Review your top candidates for software intelligence as determined in the 100-day plan.
- Implement an automation technology that addresses one of these use cases.
- Quantify its business impact and use those cost savings to justify the next project(s).
- Pilot a machine-learning solution that discovers new data associations.
- Review your machine-learning use cases with a questioning eye.
- Create a training program to ensure that your data scientists are educated on the latest deep-learning and cognitive-computing technologies.
- Establish a top-down strategic commitment to software intelligence and data science, including R&D investment, innovation programs, and production development.

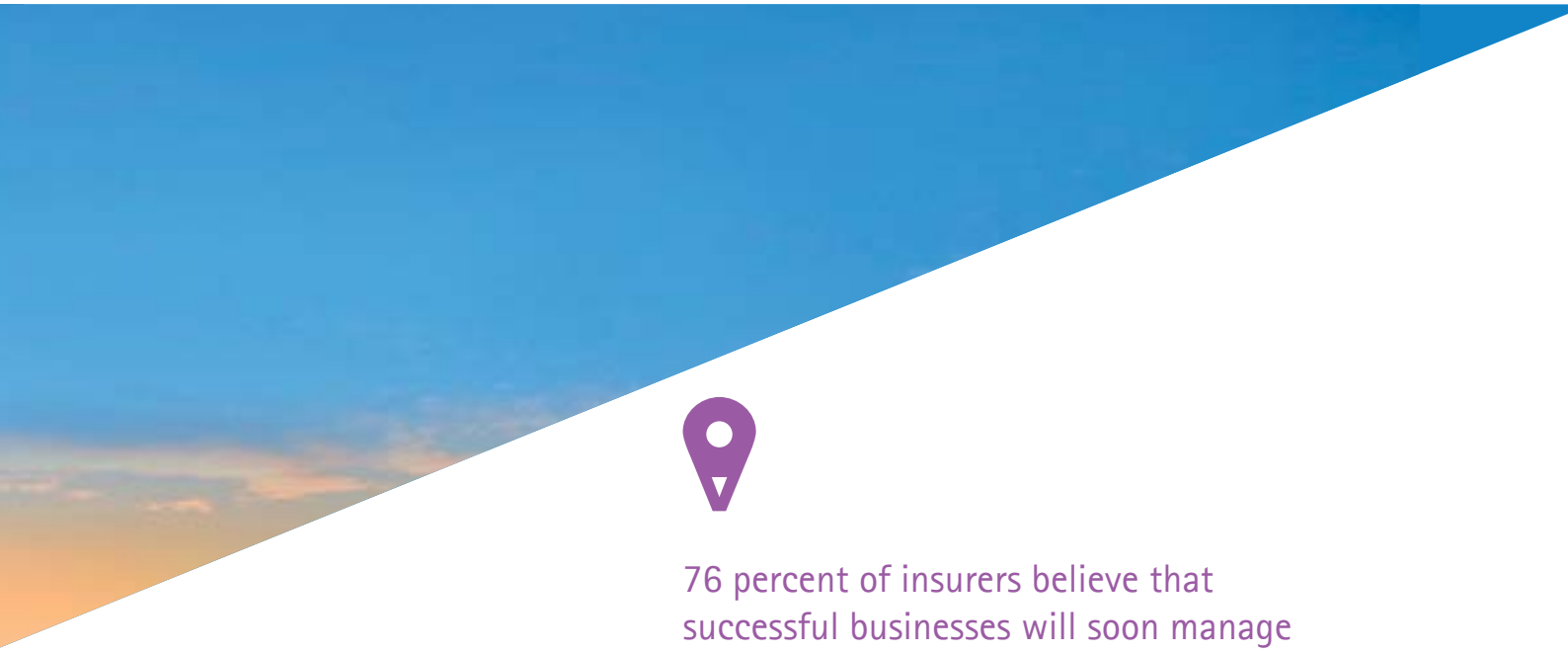
TREND 5

Workforce Reimagined: Collaboration at the intersection of humans and machines.

The push to go digital is amplifying the need for humans and machines to do more, together. Advances in natural interfaces, wearable devices, and smart machines will present new opportunities for insurance companies to empower their workers through technology.

This will also give rise to new challenges in managing a collaborative workforce composed of both people and machines. Successful insurers will recognize the benefits of human talent and intelligent technology working side by side in collaboration—and they will embrace them both as critical members of the reimagined workforce.

A study conducted by the Oxford Martin Programme reveals that many traditional job functions in insurance carriers are among the 50 roles in the US that are most at risk from automation in the next few years.[xxvii]



76 percent of insurers believe that successful businesses will soon manage employees alongside intelligent machines—ensuring collaboration between the two.

Among them are telemarketing, underwriting, claims and policy processing, claims adjustment and investigation, and damage assessment.

Insurers have, over the years, moved much of their low-value processing to offshore destinations. Although this has created significant cost-savings, it has also brought with it a range of people management challenges. Now, there's an opportunity to optimize processes at these offshore centers by augmenting the workforce with intelligent machines or even completely automating certain tasks.

Technology will dramatically change the insurance workforce in the years to come as insurers start to require fewer people to handle routine processing tasks, and as the mix of the workforce begins to favor creative thinkers and strategists over administrators and task workers.

Technology is smarter and quicker than ever, and able to do many jobs today that once relied on human intervention. Machines are not only faster at making calculations and processing data than humans, but they can also see in the dark and outside of a person's visible spectrum, hear sounds beyond the range of a human ear, and tolerate environmental conditions no human body could. And yet it would be a mistake to think that technologies such as drones or artificial intelligence can entirely replace human workers at insurance carriers.

Instead, getting people and machines to work together is an opportunity for insurers to produce better outputs, even if it will also bring upheaval to their business models. To prepare for this seismic shift in their businesses, insurers should be thinking right now about the size and composition of their workforces in the era of human-machine collaboration.

As in most industries, the next generation of insurance will see people and technology working side by side to achieve better results and tackle bigger challenges. To best embrace this shift, carriers will have to train their employees to collaborate effectively with technology—and, in some cases, teach and guide the technology as if it were an apprentice.

Smart machines now have the ability to interact with, train, and learn from humans, and this enables them to perform better over time. By creating a positive cycle of collaboration between humans and machines, insurers can drastically improve the outputs of both and embrace the digital age with a reimagined workforce—one that makes the most of machines' efficiency and human creativity.

The augmented workforce

The development of more natural interfaces for interacting with technology is making it more acceptable to turn to machines for assistance today. Advances in natural language processing and speech recognition are making it much easier for humans to interact naturally with technology and machines—and companies are starting to recognize this value.

But the interfaces between people and machines are evolving in other ways, too. For example, insurers could leverage wearable devices that augment workers' abilities, thereby equipping their employees with technology that helps them to make better decisions, be safer and become more efficient.

Claims field adjusters, for example, could use wearable cameras when they inspect a roof for a building insurance claim or assess the damage to a vehicle. They could keep their hands free while they're climbing ladders or surveying a damaged building while still recording all the information needed to assess the claim. In future, they could use augmented reality features embedded in eyewear to access manuals, specifications and other relevant information as they work.

This reimagined workforce—one that will enable more work to be done better—will raise many new issues. Which jobs should be assigned to humans and which to humans working with machines? What governance systems are in place to help us decide? How can the human workforce be trained for this new blended work environment?

How do we rethink the skills for hiring human talent—should we emphasize more or less specialized knowledge? Can our people be retrained to understand the new risks we must underwrite as autonomous vehicles and 3D printers move into general use? Or do we need to create a "red team" to build tomorrow's risk models and approaches to customer engagement?

There are no easy answers to these questions, but it is becoming clear that human and machine, each on its own, won't be enough to drive business in the decades to come. Tomorrow's leading enterprises will be those that reimagine their workforce and effectively blend humans and technology as partners.

A shift in liability

For insurers, the rise of a workforce populated by robots, artificial intelligence and drones is not just about their own internal operations. It also has significant implications for the way they underwrite risks and earn income. The basis of risk will move from the human being to the machine in auto insurance, for example, as semi-autonomous and autonomous cars start to become a commercial reality.

Why now?

Maturing technology: Advances in natural language processing are making it much easier for humans to interact naturally with technology and machines. Advances in wearable computing are allowing workers to integrate more technology seamlessly into their workflows.

Fast ROI: Gartner predicts that "by 2018, the total cost of ownership for business operations will be 30 percent lower than today because of the wider use of smart machines and industrialized services."[xxviii]

Improved efficiency: Gartner forecasts that in 2017, savings in the field service industry will increase by $1 billion due to smartglasses.[xxix]

Important use cases such as worker safety: The need for robots to work together with humans in hazardous situations is becoming more pronounced.

What does it mean when a machine steers a car, rather than a person who gets tired and distracted, might not be wearing his glasses, overestimates his proficiency at driving in the dark, or sends text messages at the wheel? The risk is different and insurers need to evaluate it differently.

Liability will shift from drivers to auto manufacturers and technology firms, while the risks that need to be managed will be increasingly centered on technology failures and cyber-security breaches rather than on human error. Are insurers ready for the impact this might have on their businesses?

And in commercial insurance, the growing use of drones and smarter robots to help or replace humans doing dangerous or tedious jobs in mines, factories, disaster zones and oil rigs will surely introduce new risks to be assessed while eliminating others from consideration.

It's not inconceivable that such machines could even soon work side by side with surgeons in theatres. From personal injury to invasion of privacy to business interruption, these machines bring with them many new risks to be managed.

The advent of 3D printing and distributed manufacturing, too, bring with them potential for disruption.

Insurers once enjoyed healthy premiums from insuring goods at every point as they moved down the supply chain from the factory to the end-customer. As people and businesses become able to print partial or even complete products themselves rather than needing to buy factory-made goods, the lines will blur or even disappear between producer and consumer in many sectors. The need to insure goods in transport may also vanish in some industries or for some products.

Who will take liability if an expensive machine malfunctions after a user replaces a part with a spare he printed on-site? What of intellectual property rights and liability if a design for an item is released into the wild for anyone to use without paying its owner? Insurers could help their customers to understand and mitigate the risks of these innovations, thereby helping to make them a safe reality.

The trend in action— USAA sends in the drones

United Services Automobile Association (USAA) in the US has asked the Federal Aviation Administration (FAA) for permission to test-fly unmanned drone aircraft.[xxx] The test flights will establish the viability of using drones to examine damage and evaluate claims before sending assessors to the customer's site. The visuals captured by the drones could be combined with subsequent reports from employees on the ground.

USAA claims to be the first insurer to seek the FAA's permission to use drones. It hopes that it will be able to assess claims faster and more accurately in the immediate wake of a catastrophe.

Within three years, companies will need to focus on training their machines as much as their people: 74 percent of insurers agree.

YOUR 100-DAY PLAN

Learn about the variety of options that contribute to the reimagined workforce. Decide how you can harness them moving forward.

- Appoint a cross-functional team to uncover opportunities for integrating technology to augment your workforce's operational efficiency—include members from the human resources, business, and technology areas.
- Identify what competitors and companies in other industries are doing in blended workforces.
- Establish criteria to identify use cases for investment in further human-machine collaboration.
- Take a close look at positions that remain open. Pilot filling these positions with new methods of people and machine interaction.
- Ensure an understanding of where your workforce needs augmentation technologies, and perform a gap analysis on the skills that will be required of future employees.
- Evaluate if technology can be used to address some of the worker safety issues in remote and challenging environments.
- Test scenarios where wearable computing technologies improve the seamless integration of workers and business processes.

YOUR ONE-YEAR PLAN

Begin building a blended workforce in stages.

- Pilot prioritized solutions by dividing and distributing tasks that play to your workforce's strengths: machines for precision, scale, and consistency and humans for creativity, contextual decisions, and complex communication.
- Determine industry-relevant opportunities for leveraging technology to help your human workforce focus on tasks that are more complex.
- Create employee-training programs that are sensitive to the new skills required for your blended workforce.
- Integrate technology where specially trained workers were previously required. Use the augmentation technologies to make those jobs available to less skilled workers.

Strategic recommendations for going beyond insurance

We believe that insurers should start making the following strategic moves if they are to ensure their growth and relevance into the future:

Decide which business models to invest in

Most insurers are still tied to a business model which is based on pooling risk, calculating average pricing and generating gross premium income. But leading carriers are thinking about what their role will be in an economy where service is personalized, measured by outcome and delivered through powerful ecosystems.

For some, their economies of scale may mean that they can continue as back-office engines that provide underwriting capabilities to the brands that have the direct relationship with the customer. Others, especially in commercial insurance, may have niche expertise that serves as a barrier to competition.

However, we expect to see many of the leaders that will write the new digital playbook move beyond the traditional role of the insurer, becoming risk managers and advisors to their customers. Rather than selling policies, they will help their customers to reduce risk and optimize outcomes in daily life and everyday business.

Carve out spaces where innovation can flourish

Like most large organizations, insurers cannot reinvent their businesses overnight. They have legacy systems to manage, traditional revenue streams to protect, risk-averse cultures that are difficult to change, and cumbersome processes to surmount. Rather than trying to innovate from within their own four walls, they must create new spaces where innovative thinking can flourish.

For some, this may mean creating dedicated innovation teams whose role it is to design novel products and services that may cannibalize existing revenue streams. Others might want to invest in or acquire innovative startups to access their technology and disruptive business models.

In other instances, the best strategy may be to partner or form alliances with companies that could bring new services and thinking to the insurer's ecosystem. Whichever options insurers pursue, it's important for them to think of their business as an investment portfolio.

Carriers will continue to invest in their traditional business models, which they will enhance by adding digital capabilities to improve the customer experience, lower their loss ratios, and deliver more straight-through processing. At the same time, they can experiment with new business models and nurture the most promising ones to maturity.

Percentage of insurers who have already leveraged the following innovation capabilities:

- A dedicated innovation team: 46 percent
- Partnerships / alliances with innovative companies and/or organizations: 42 percent
- Investments in innovative companies: 36 percent
- An internal innovation lab: 33 percent

CONCLUSION

Becoming a digital insurer is no longer simply about incorporating digital technologies into an organization. It's about using them to create a broader fabric that connects customers, partners, employees, and industries, and enables new insurance value propositions that expand value creation and growth.

What's new about these moves is that they are not directed internally—toward improvements in current operations and business processes. Instead, progressive insurers are stretching their boundaries to leverage a broader ecosystem of digital businesses as they shape the next generation of their products, services, and business models. And they are doing so with an eye on their wider social and economic purpose.

As such, the Digital Transformers in the insurance sector are thinking big thoughts and asking big questions: How we do work with healthcare providers and hardware manufacturers to use connected wearable devices and the data they produce to help our health insurance customers live longer, healthier lives? What can we do in partnership with auto manufacturers to underwrite the risks of self-driving vehicles so that they can be a safe reality?

With global food security possibly under threat from climate change, could we help farmers improve their crop yields rather than simply insuring their crops against catastrophic weather? How can we leverage connected home or connected workplace technologies to help keep our customers and their assets safe from fire, theft or storms?

These questions and their answers are not just about insurers using technology to transform themselves. They are about leading carriers combining the power of digital technology with their industry expertise, their balance sheets and their ability to manage risk, in order to reshape their markets, define a new role in a "We Economy", and ultimately, enable the social and economic progress promised by new technologies.

About the Accenture Technology Vision for Insurance

Every year, the Technology Vision team collaborates with Accenture Research and a large number of business and technology specialists to pinpoint the emerging IT developments that will have the greatest impact on organizations in the next three to five years.

The research process this year began by gathering inputs from the Technology Vision External Advisory Board, a group comprising more than two dozen executives and entrepreneurs from the public and private sectors, academia, venture capital, and startup companies.

In addition, the Technology Vision team conducted nearly 100 interviews with technology luminaries, industry experts, and Accenture business leaders. The team also tapped into the vast pool of knowledge and innovative ideas from professionals across Accenture.

Accenture's dedicated insurance research team and subject matter experts supplemented the cross-industry findings with industry-relevant insights to align the Technology Vision with the realities of the insurance market.

As a new input into this year's Technology Vision, we conducted a global survey of 2,000 business and IT executives across nine countries in order to understand their perspectives on key technology challenges they face, and identify their priority investments over the next few years. The insurance sample included 221 respondents from across the world.

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