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Undertaking #31

MPI to file the document 'Digital Disruption in Insurance: Cutting Through the Noise'.

RESPONSE:

Please see *Attachment A*.

Digital disruption in insurance: Cutting through the noise

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Preface

There is a lot of noise out there. Insurance CEOs constantly hear about digital marketing, digital distribution, digital IT architecture, and digital attackers, as well as digital technologies such as telematics, automation, and machine learning, to name but a few hot topics. What is harder for them to discern is the bigger picture. What does success look like for an insurer in a digital world, and how is it achieved?

This compendium—“Digital disruption in insurance: Cutting through the noise”—helps paint that picture by drawing on McKinsey’s experience in the industry and that of some 30 executives whom we interviewed. Importantly, we spoke not just to incumbents but those who are helping to force change in the industry, including for example giant technology companies, companies that promote the use of data-collecting sensors in our homes and cars, and newcomers to insurance. All shared their insights on what is happening in insurance and why, and where success lies.

The compendium’s underlying premise is stark—but some executives are beginning to face up to it. They know that staying competitive in a digital world will require far more than the addition of a direct sales channel or a few automated processes. Even the term “digital transformation” can underplay the response required, suggesting as it does that the change needed is purely technological. What is actually required is a fundamental rethink of the corporation, for which digital technology is but the catalyst. It forces companies to rethink the sources of revenue and efficiency. It forces them to rethink the organizational and talent model. And ultimately it forces them to rethink the business model and the role they will play in an ecosystem that cuts across traditional industry boundaries. They will have to reinvent themselves.

Resistance to what lies ahead is futile. Insurance has been relatively slow to feel the digital effect owing to regulation, large in-force books, and the fact that newcomers seldom have the capital needed to take insurance risk on to their balance sheets. But the industry is not impregnable. Companies that fail to adapt will weaken under the pressure exerted by those that use digital technology to slash costs and get better returns on their investments. And they will be left floundering once digital’s relentless force ultimately breaches both the industry’s business model and boundaries. Already, in personal auto insurance, we see how sensors fitted in vehicles will be likely to put premiums under pressure as driving becomes safer. And we have only to glance at other industries to understand how, in a world in which data and analytics are king, powerful new digital competitors with large customer bases in their core businesses can rapidly invade new ones. Chinese e-commerce giant Alibaba now also owns one of the world’s largest technology finance companies, with financial services and products that include insurance.

Acknowledging the urgency to undertake a digital transformation—both to reap its rewards and fend off threats—is one thing. Knowing how to manage one is quite another. Ask any executive who is the midst of the task, and they will attest that it is a formidable effort that touches every part of the organization, and that there is no rule book that will guarantee an easy ride. This remains virgin territory because no one in insurance has yet completed a transformation—it could take as long as a decade. Nevertheless, lessons are emerging that will answer the burning questions posed by those about to embark on the challenge, questions such as:

- Where should I start, with cost-cutting or growth initiatives? And should I let a thousand flowers boom, or pick selectively?
- Do I need to rip out my IT systems and start again?
- Do I need to set up a new, digital unit, and if so, will it cannibalize my other business?
- How do I attract all that new, whizzy talent I will be needing—and will these newcomers really understand what makes my company successful?
- Do I need a chief digital officer?
- Our heritage makes us risk averse. But now I am being told we need to experiment and innovate. How do we change—safely?

This compendium explores the answers to those questions. We hope it will help executives to understand where value lies in a digital world, at the same time as offering a clear, practical approach for capturing it.



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McKinsey would like to thank these experts who shared their views on digital developments in the insurance industry, helping to inform the articles in this compendium.



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Facing digital reality

Regulation, product complexity, and insurers' large balance sheets have kept digital attackers from insurers' gates. That is changing, but in ways incumbents should embrace. They can flourish in the digital age—if they move swiftly and decisively.

Digital technology destroys value. That might sound counterintuitive given the extent to which it can make business systems more efficient—and companies are urged to embrace its many possibilities. Yet new McKinsey research shows that although digital technology propels some companies to become clear market winners, for many more its impact depletes corporate earnings and the overall value of an industry.¹ Consumers, not companies, are often the ultimate winners.

So it is likely to be in insurance. For a long time, the traditional insurance business model has proved to be remarkably resilient. But it too is beginning to feel the digital effect. It is changing how products and services are delivered, and increasingly it will change the nature of those products and services and even the business model itself. We firmly believe that opportunities abound for incumbent insurance companies in this new world. But they will not be evenly shared. Those companies that move swiftly and decisively are likely to be those that flourish. Those that do not will find it increasingly challenging to generate attractive returns.

A triple prize: Satisfied customers, lower costs, higher growth

The goal must be to meet customers' expectations, which have been transformed by digital technology. Customers want simplicity—one-click shopping, for example. They want

24-hour access and quick delivery, clear, relevant information about a product's features, particularly in relation to pricing, and innovative, tailored services designed for the digital age. They have the same expectations whatever the service provider, insurers included. And as Matthew Donaldson, CEO of UK-based BGL, the company behind the comparison site Comparethemarket, points out, although some insurers are holding back from the commitment needed to meet these expectations, demand must ultimately be satisfied.

Automation can reduce the cost of a claims journey by as much as

30%

In the shorter term, fulfilling this goal is a chance for insurers to improve profits in their core business. Higher customer satisfaction, driven by the improved service and faster processing times that digitization delivers, is itself a driver of profit through increased customer retention.² At the same time, by digitizing their existing business, carriers can remove significant cost across the value chain, further increasing customer lifetime value. Automation can reduce the cost

¹ Jacques Bughin, Laura LaBerge, and Anette Mellbye, "The case for digital reinvention," *McKinsey Quarterly*, February 2017.

² Alex Rawson, Ewan Duncan, and Conor Jones, "The truth about customer experience," *Harvard Business Review*, September 2013, hbr.org.

of a claims journey by as much as 30 percent, for example.

There are revenue improvement opportunities too. The notion that insurance is a low-engagement, disintermediated category in which customer relationships can be delegated to agents and brokers is increasingly obsolete. Instead, digital technology and the data and analysis it makes available give insurers the chance to know their customers better. That means they can price and underwrite more accurately, and better identify fraudulent claims. They can also offer clients more tailored products—auto insurance that charges by the mile driven, for example. And they can offer them in a more timely manner. In an analog world, an insurer will be unaware when a customer holding a home insurance policy puts that home on the market. In a data-rich digital world, that need not be the case, and the knowledge that a home is up for sale becomes an opportunity to offer new home cover, new auto cover, and perhaps a life product to help cover a mortgage on the new house.

Longer-term growth opportunities reside in innovative insurance products and protection services. Concerns about cyber security will create demand from companies and even households for products that prevent and protect against the breach or loss of data, and damage that might ensue. And more products fit for a sharing economy will surely emerge—for homeowners who suddenly become hoteliers when

they take a guest through AirBnB, for example.

“Insurers of the future will play more of a risk avoidance role and less of a risk mitigation one.”

— Andrew Rose, CEO of US insurance comparison website Compare.com

This is all good news for insurers, particularly at a time when low interest rates and tighter regulation constrain performance. But while opportunities abound, there is no guarantee that today’s incumbents will be the ones to capture them. Digital is opening the gates to new attackers that will erode their advantages.

Attackers at the gate

Complex regulation was and remains a deterrent to new market entrants. So is the size of incumbents’ in-force books which, coupled with customers’ tendency in P&C and particularly life insurance not to switch providers, makes it hard for new entrants to rapidly capture market share. Moreover, incumbents have the advantage of large capital reserves, as start-ups seldom

want to take risk on to their balance sheets because of the capital they need to offset it. And they have the advantage of underwriting skills built on years of experience and proprietary data.

This resilience explains why the industry as a whole lags behind many other sectors in its digital maturity. But the situation is changing. Money now pouring into the industry suggests it is no longer regarded as impregnable. Venture capitalists globally invested \$2.6 billion in insurtechs in 2015, and nearly \$1.7 billion in 2016. (Exhibit 1). Although these newcomers are populating every part of the value chain, their focus to date has been on the more easily accessible slivers of the industry—mainly distribution, particularly in P&C

insurance (Exhibit 2). They are not about to overturn today’s value chain. But there are longer-term trends afoot that might.

Eroding advantages

Insurers are threatened by three trends: a shift toward preventing risk rather than insuring against it, the increasing power of those companies that own and analyze data, and the investment of huge amounts of capital in insurance-related capital market instruments by institutional investors seeking high returns.

Risk prevention. Digital technologies that give rise to ever-increasing amounts of data and ever more penetrating insights might make for more accurate pricing

Exhibit 1

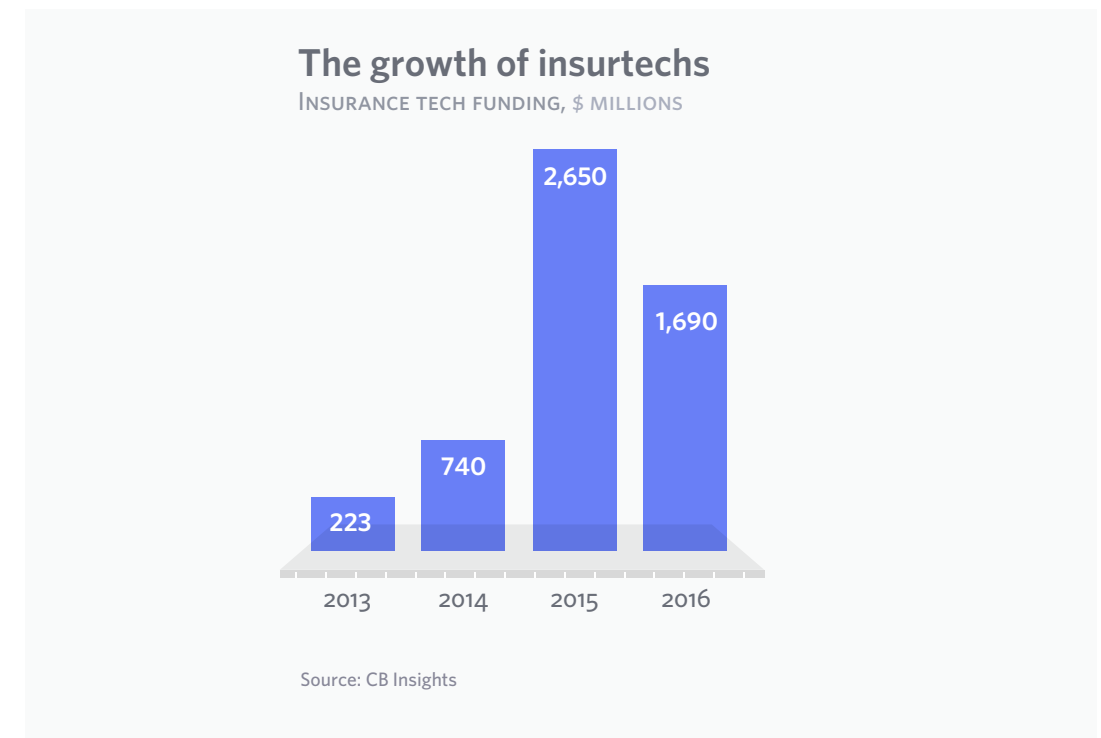
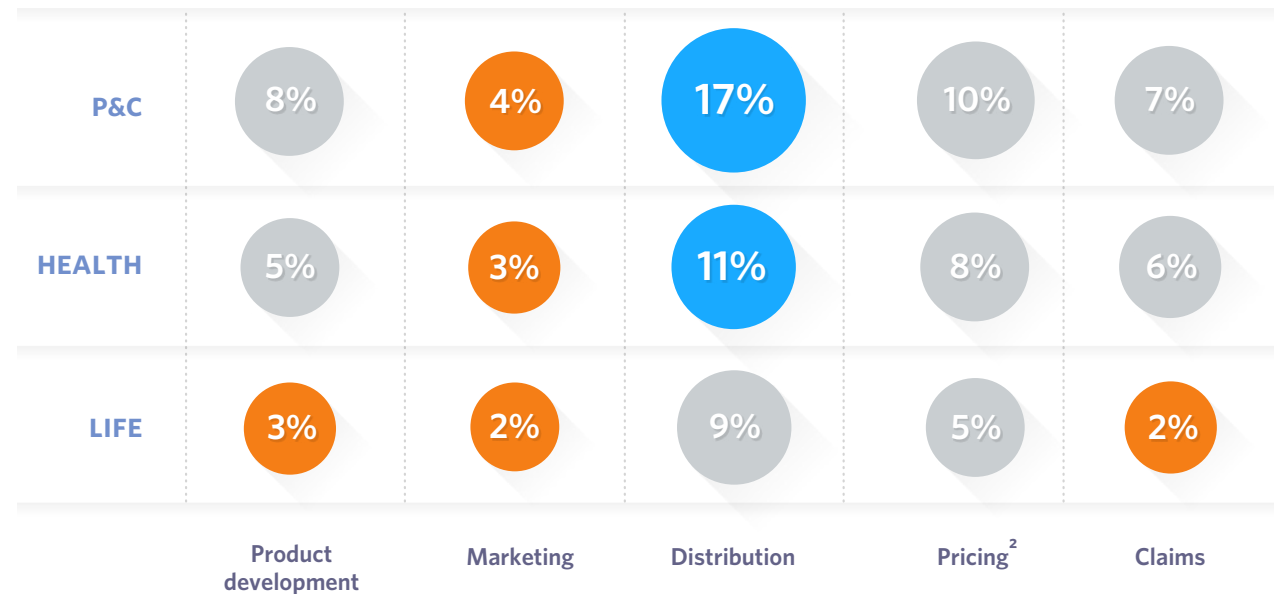


Exhibit 2

Where insurtechs are focusing

Number of innovations as % of total in the database ¹

Share of innovations in Insurtech database
● <5% ● 5-10% ● >10%



¹ -500 commercially most well-known cases registered in the database (excluding wealth management related innovations)

² Includes underwriting and policy issuance

Source: McKinsey Panorama Insurtech Database

of risk, but they also help mitigate risk, reducing premiums. Take auto insurance. Forward collision avoidance, blind-spot assist, and adaptive cruise control are already fitted in many new cars, making vehicles safer. Already, 20 percent of vehicles globally are expected to come with safety systems by 2020, reducing the number of accidents and thus the value of personal auto insurance policies. Entirely self-driving cars could become ubiquitous in the next two decades, at which point liability is likely to shift from individual drivers to manufacturers. In the United States, we estimate auto insurance premiums could decline by as much as 25 percent by 2035 due to the proliferation

of safety systems and semi- and fully-autonomous vehicles.

The same shift toward risk prevention is apparent in other sectors. In the home, sensors can send an alert to the owner if a risk of flood is detected, automatically shutting off the water system if there is no response, and in commercial properties, connected devices on manufacturing equipment can give owners early warning of maintenance requirements. Smart devices that monitor health are also increasingly popular. There are two main effects. Data from connected devices can be used to assess risk more accurately. But it is also a powerful tool to lower risk—to prevent accidents in the home,

reduce maintenance and downtime, or improve health. This logically leads to a model whereby consumers pay not for premiums in order to be compensated for damages they might incur, but for gadgets or services that predict and help prevent that risk. “Insurers of the future will pay more of a risk avoidance role and less of a risk mitigation one,” says Andrew Rose, CEO of US insurance comparison website Compare.com. The value creation from underwriting thus diminishes.

The power of data and its analysis. Data and analytics are changing the basis of competition. Leading companies use both not only to improve their core operations but to launch entirely new business models. Insurers have valuable historic data. Yet in a few years’ time, will they be able to keep pace and still add underwriting value when competing with newcomers that have access to more insightful, often real-time new data culled from the Internet of Things (IoT), social media, credit card histories, and other digital records? Knowledge about how fast someone drives, how hard they brake, or even (more controversially) what they get up to as displayed on social media is arguably more revealing data on which to assess risk than simply age, zip code, and past accident record. (Facebook recently moved to prevent its users’ online activity being used by insurers in the United Kingdom—proof of the potential power of access to good data.)

And what if those with the necessary data and analytical skills and platforms that reach millions—a Google or an Amazon—not only offered well-targeted, tailored products, but also began to cherry-pick low-risk customers? If they did so in significant numbers, the insurers’

business model, whereby premiums collected from low-risk policyholders contribute to the claims of high-risk ones, could fall apart.

Auto manufacturers are arguably close to changing the game for insurers. The fitting of connected devices as standard in cars is not far off, potentially giving manufacturers unique access to data that could accurately ascertain the risk of their customers, as well as ready-made access to drivers in need of an insurance product. How would incumbents fare in such an evolving ecosystem?

Leading companies are using data and analytics not only to improve their core operations but to launch entirely new business models.

Institutional investors. For more than a decade, large institutional investors have been pouring money into insurance-linked instruments on the capital markets in search of non-correlated returns and higher yields in a low interest rate environment, disintermediating reinsurers in the process. To date, they have focused mainly on reinsuring property catastrophe risk—a sum of \$70 billion in 2015. But now they have their eyes on the primary market. For the moment, interest centers on “short-tail” lines of business. Yet ultimately, why would, say, a large manufacturer of sensors that gathered

data about weather and soil conditions to optimize agricultural productivity not consider offering a crop insurance product to farmers, with the backing of investors? The data gathered would aid risk analysis, and payments could be triggered automatically (and cheaply) when sensors detected damaging weather conditions.

of just one or two innovation cycles. Retail music, book stores, travel, and media are some of the high-profile sectors that have already felt its force, transforming their economics and sometimes toppling what were once industry heavyweights. The question for incumbents is therefore whether they are nimble enough to rise to the opportunities that digital offers. The evidence that they will need to move quickly is compelling.

Uneven distribution of rewards

First, digital diminishes value. McKinsey's global survey of a wide range of industries has shown that digital technology shrinks revenue growth at an average rate of 3.5 percent a year and growth in earnings before interest and tax (EBIT) at an average rate of 1 percent a year. For some industries, the figure is as high as 12 percent for revenue and 10 percent for EBIT.

Our analysis of auto cover, the insurance segment that has been first to feel digital's impact, suggests a similar dynamic is unfolding in the insurance industry. US auto insurers have already lost on average \$4.2 billion in underwriting profit a year over the past five, with expenses and losses consistently outweighing premiums. They should expect further annual profit declines of between 0.5 and 1 percent if they fail to use digital technology to improve efficiency and effectiveness.

In the shorter term, corrective measures could lead to huge profit improvements. By digitizing existing business, our research suggests, a large incumbent

could more than double profits over the course of five years. In the longer term, however, earnings from traditional business will face headwinds as driving becomes less risky owing to the use of sensors and telematics or because, in the case of autonomous cars, liability is transferred to manufacturers. Fifteen years on, profits for traditional personal lines auto might fall by 40 percent or more from their peak (Exhibit 3).

Second, in a digital economy, the effects of a shrinking economic pie are compounded by the fact that the pie will not be evenly divided—the result of economies of scale and network effects. Hence, not all carriers will be able to sustain the performance described in the analysis above. For many, digital's threats might well outweigh the opportunities. Again, the signs are already apparent. In direct auto insurance in Spain, Germany,

A large incumbent could more than double profits over 5 years by digitizing existing business.

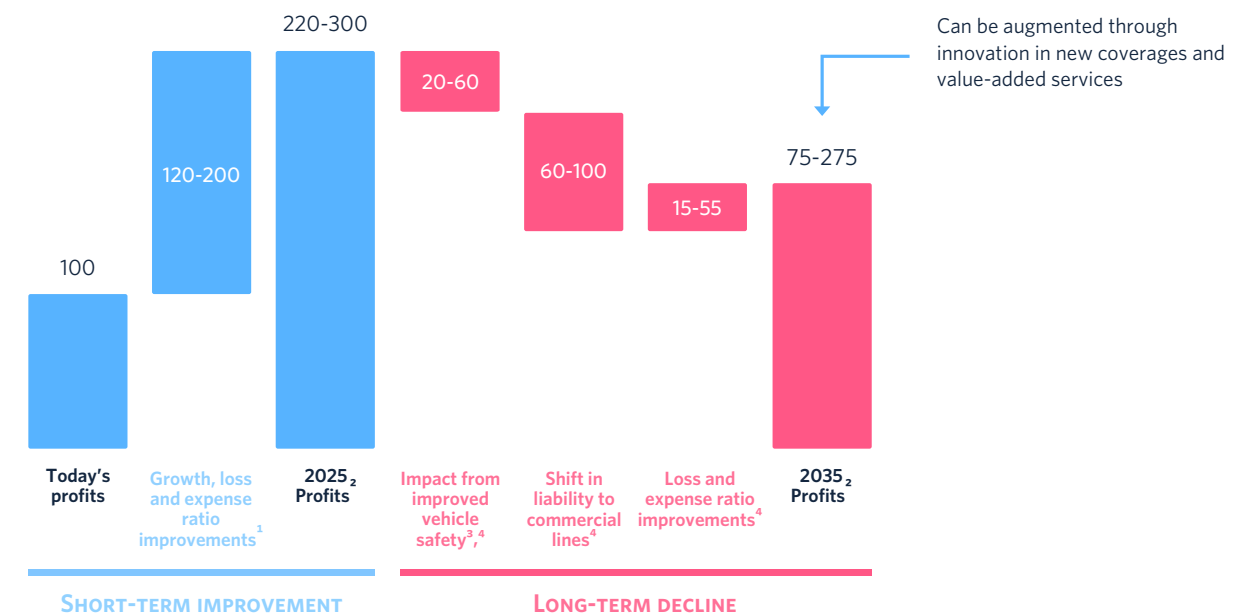
Despite these potential threats, our view is that today's carriers, many of which have a century-old record of creating value for their policyholders and shareholders, remain in a strong position to flourish in a digital age. For the time being, they have expertise no one else has, making them valuable partners in the ecosystems that are evolving to offer consumers both risk prevention and risk mitigation services. They still have large balance sheets that enable them to underwrite large pools of risk. And they have the trust of policyholders who need to know their insurance company will still exist when they make a claim or their policies mature, perhaps decades from now.

But for many carriers, the window of opportunity is narrow. Once cracks appear, digital technology has the power to break business models within the space

Exhibit 3

Profit projection for an auto insurer digitizing its business

Future profits as a percentage of today's profits



¹ Assumes a 3 to 5 percentage point improvement in loss ratio, a 2 to 4 percentage point improvement in operating expenses, and a 6 to 8 percentage point improvement in direct sales conversions
² Includes growth in investment income as well premiums. Investment income modeled as a flat percentage of premium in each year
³ Includes impact of semi- and fully autonomous vehicles
⁴ Assumes a 25 percent reduction in premiums as a result of telematics and sensors and a 50 percent risk transfer to commercial product liability

Source: Digital and Auto Insurers Value at Stake Analysis, McKinsey, 2016

and the United States, a single player has captured the lion's share of profits, up to 70 percent, leaving a long tail of sub-scale, often unprofitable carriers competing for the remainder (Exhibit 4).

Third, the winners will be those that move decisively. Our cross-industry research showed that those companies that initiated disruption fared best, generating revenue and EBIT growth that was on average between one and two percentage points higher than that of more ad hoc responders. These companies made big

bets—to innovate products or reshape the value chain, for example—rather than following in others' wake. In insurance, this is borne out by the companies featured in Exhibit 4: HUK24, Direct Line, and Progressive were all first movers.

A similar dynamic is likely to play out across the industry. Digital technology will take longer to disrupt more complex business lines, such as life insurance, and technological innovation may disrupt them in ways we cannot yet foresee. But given

its impact to date in industry after industry, it would be foolhardy to bet against it.

What it takes to transform rapidly and at scale

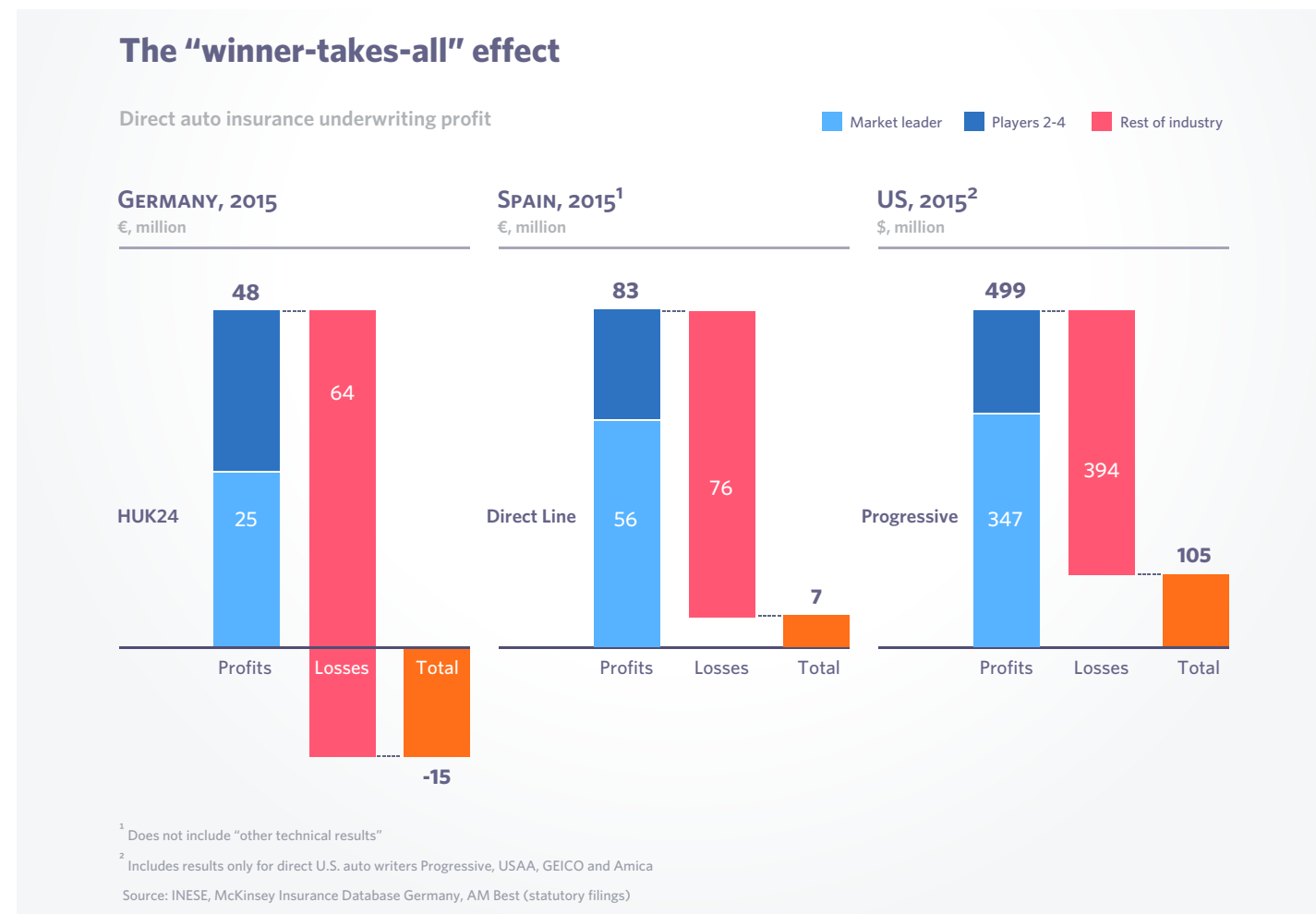
Against this backdrop, we interviewed some 30 executives in incumbent and attacking companies to understand their views on how the industry is changing and how to respond. The single message most constantly repeated was the need for incumbents to accelerate their response (see box, "The need to commit to speed"). Most know they cannot afford to wait until evolving technologies turn the market upside down and the competitive advantages they enjoy today evaporate. If history tells them anything, it is that they need to get ahead of the curve. And they will need to do so at scale, ultimately transforming the entire business. What holds them back, however, is deciding how to address the challenge given its enormity.

"I believe the consumer will win and that the desire for low-cost, transparent, high-quality digital services will have to be met."

— Matthew Donaldson, CEO, BGL Group (Comparethemarket)

largest profits, and insurers must fight for them. Their success will depend upon offering superior products and services. Technical underwriting skills alone will not suffice.

Exhibit 4



The new value drivers

Success will be grounded in recognizing the drivers of value in a digital age. There are five of these.

Technological leadership and innovation. Winning companies will need to do more than follow technological trends and innovation. They will need to lead them. Innovation is a vital component of a digital transformation.

Customer ownership. Incumbents have not had to worry much about customer ownership. Their only competitors have been other insurers, and most have felt secure enough to cede customer contact to intermediaries. Today, however, customer access and "ownership" are keys to the

Efficiency (cost savings) and effectiveness (higher returns). Digital technology puts margins under pressure as premiums fall under the weight of price competition and as new ways of mitigating risk emerge. Under these conditions, insurers will need to harness digital to make their operations more efficient, aggressively lowering costs. They will also need to make them more effective by, for example, improving the accuracy of their pricing and underwriting to improve loss ratios.

Scale and network effects. In a digital world, initial investments are sizeable but marginal costs are close to zero. Scale therefore matters. It also delivers network effects, helping to build a company's access to more and better data, talent, and partners to the extent that it becomes a

VOICES: The need to commit to speed



“There are times when we talk to carriers about integrating a line of code into their app to integrate more into Facebook, and the answer we get is, ‘Well, our next release cycle isn’t for another eight months.’ The ability to speed up those release cycles is a variable that we see with those carriers that are not just talking the talk, but taking action.”
—Brad Auerbach, US industry manager, Facebook

“You have to believe that tomorrow somebody’s going to attack you. And you have to be acting very, very fast. The second that you slow down, somebody’s going to pass you. Insurance companies operate on slower timescales. You can’t do that. The market will pass you by.”
—Andrew Rose, president and CEO, Compare.com



“Companies need to commit to speed. Insurance is a highly regulated industry and it is not easy to move quickly, but the fact is consumers are moving at exceptional rates. So the companies that will stand out are the ones that are going to find ways to move a bit faster, at the pace of the people they’re insuring.”—Scott Simony, head of industry, Google

“We see some carriers that understand this is the beginning of a reinvention of the auto insurance model, but we also see many that are still scared of technology, a bit like the utility world was a few years ago, where people said, ‘You know what, I’m fine running my coal plants, I don’t want to know about all this renewable technology because it’s only going to hit in the generation after I retire.’ But car makers are adopting the technology quite rapidly. Five, ten years out we’re going to see some very, very major effects.”—Stefan Heck, CEO, Nauto



“Insurance companies that are really good at risk management are thinking traditionally—that if you spend enough time, one year, two years, thinking and planning, the outcomes you generate would be [the result of] the time spent. But the pace of change is so fast that by the time you have thought through things, the market may have already moved on.”—Naveen Agarwal, chief customer officer, Prudential

barrier to entry for others. Some companies have built hyper-scale data platforms that enable them to blur traditional industry definitions by spanning product categories and customer segments, creating new ecosystems and value chains in the process.

Speed and agility. The strength of an insurer’s in-force book will not protect it indefinitely. Incumbents need to move quickly to compete with digital competitors that have the agility to keep pace with evolving technology and customer needs. That means letting go of slow decision-making processes and outdated ways of working, and adopting a new culture and talent base that is more comfortable with experimentation, testing and learning, and sometimes even with failing.

A roadmap for the future

These new value drivers will inform the roadmap insurers chart to transform their businesses and secure their future competitiveness. They will shape their strategy, helping them to understand the forces that are disrupting the industry. They will make clear the huge value to be created by digitizing their current businesses, as well as the imperative to innovate. They will demonstrate the need for significant investments in IT and a change in perspective whereby IT becomes a strategic function, not a cost center. They will make plain the new capabilities required to take full advantage of IT’s potential, including automation, advanced analytics, and blockchain. And they will highlight the importance of culture and talent change if the transformation is to be successful.



Insurers should not underestimate the changes that digital will bring to their industry and the challenges they will pose. Neither should they overlook the significant short-term profit improvements that are within their grasp if they digitize their core businesses, nor shy away from innovating to be part of an exciting future that is unfolding for the industry. If they act decisively, they will be among its leaders. □

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A strategy for a digital age

Few insurers have defined a comprehensive digital strategy fit to withstand attackers at the gate. The starting point is to understand the sources of disruption.

The verdict is clear: those insurance companies with the most advanced management practices related to digital strategy, capabilities, culture, and organization outperform their peers.¹ Yet relatively few incumbents have so far defined a comprehensive digital strategy—the foundation from which all else logically follows if they are to compete in a digital world. Instead, they package together tactical or incremental initiatives that individually drive modest performance improvement—some digital marketing, a new sales channel, or some degree of automation, perhaps—while leaving significant value potential untapped and their futures in doubt.

Why? Part of the answer lies in the extent to which carriers have been protected by regulation and the strength of their in-force books. In addition, CEOs with limited tenures might be wary of upsetting what has served them relatively well—and are likely to be more circumspect when the future is so uncertain. With competitive landscapes changing fast, it can be hard to know just how digital technology will play out, and hence where to place big bets. Yet hesitation is not an option. In insurance, as in other industries that have felt the force of digital disruption, those that move fastest to adapt are likely to take a disproportionate share of the profits.

Hence, a means of discerning clearly the sources of opportunity and disruption in digital technology lies at the core of a

digital strategy, and is critical to building a leadership position.

Building a digital strategy

The definition of a digital strategy is no different from that of any other strategy. It is a set of integrated, hard-to-reverse choices, made for the future, in the face of uncertainty, with the purpose of creating and capturing economic surplus.²

With competitive landscapes changing fast, it can be hard to know just how digital technology will play out, and hence where to place big bets.

The building blocks of a digital strategy likewise resemble those of any other strategy: a diagnosis of where and why a company makes money in the present, a forecast of how that might alter in the future, an understanding of the potential pathways to success, a portfolio of initiatives, and then a commitment to driving change.

¹ Tanguy Catlin, Ido Segev, and Holger Wilms, "The Hallmarks of Digital Leadership in P&C Insurance," McKinsey & Company, August 2016.

² Frederick W. Gluck, Stephen P. Kaufman, A. Steven Walleck, Ken McLeod, and John Stuckey, "Thinking strategically," *McKinsey Quarterly*, June 2000.

What is different in a digital age is the speed and potential magnitude of that change, upending old business models and rapidly building entirely new ones. Circumventing the need to build traditional fixed assets, the likes of Amazon, Netflix, Uber, Airbnb, and a host of fintechs have disrupted incumbents in the space of a few years by using digital technologies, data, and analytics to create value without owning, respectively, physical shops, cable connections to viewers' homes, car fleets, hotels, or bank branches.

The prerequisite of a digital strategy is an understanding of the threats and opportunities that digital technology poses.

All these considerations will transform certain aspects of how companies manage their strategies, even though the foundations remain the same. In the first instance, companies need to be bolder. A McKinsey survey of more than 2,000 executives in industries affected by digital technology shows that the companies with the highest revenue and earnings growth looked for digital opportunities across all elements of their business model, not just one or two, and either led the disruption or were fast

followers. These leaders made bets on digital processes across the value chain, on innovative products, and on new business models.

Companies that procrastinate over such bets risk disappearing. In insurance, as in other industries, it takes a while for customers and companies to embrace digital technology, but as the pace of change accelerates incumbents' scope to adapt diminishes. There comes a tipping point where those that have not adapted their strategies fade away—as in traditional print media, for example. The insurance industry might have been relatively slow to feel the digital effect, but personal lines in P&C cover look set on a steep trajectory toward the tipping point, with small commercial lines just behind. Life insurance and large commercial insurance, with longer-term, often more complex contracts, have further to go (see Exhibit 1).

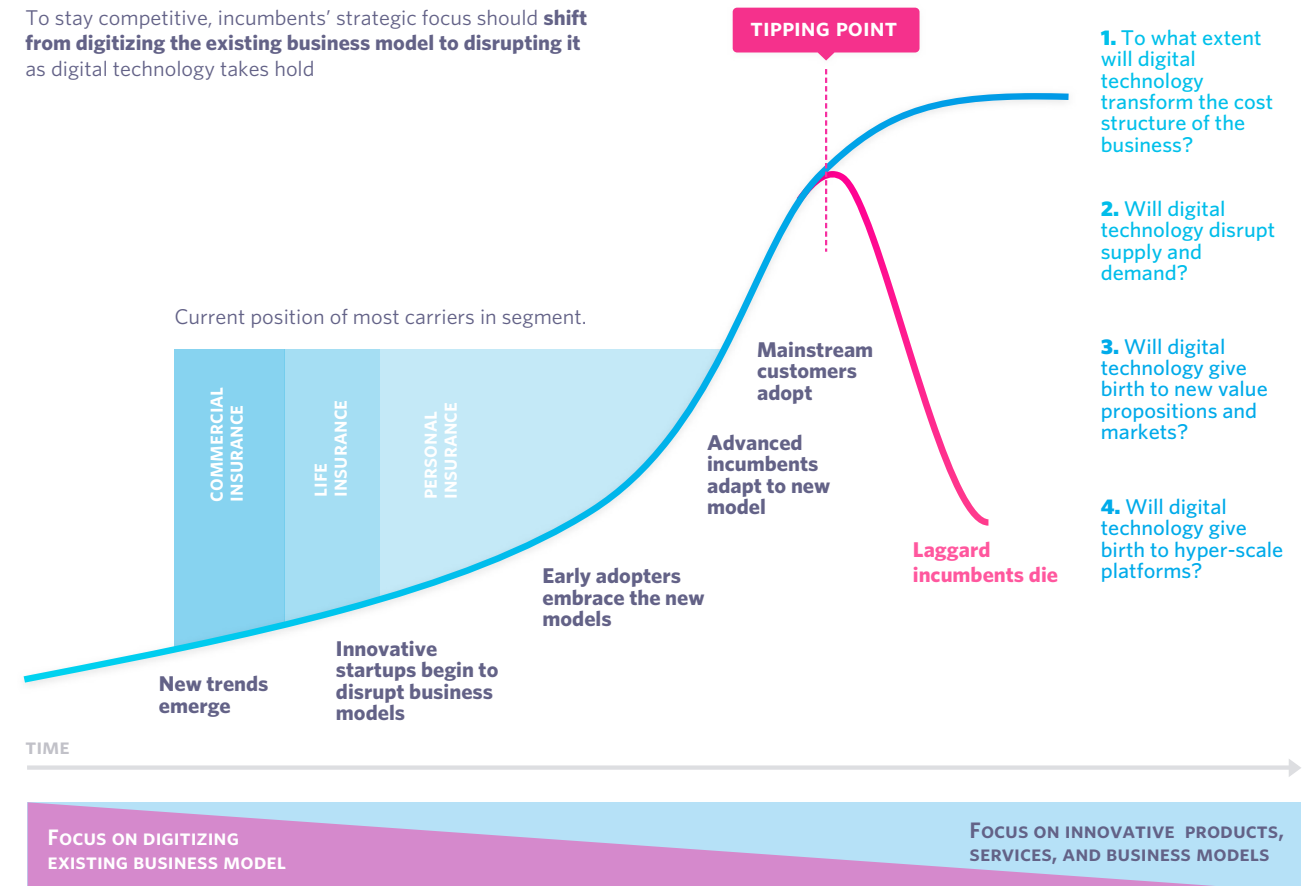
Second, companies need to review their strategies frequently as technology, consumer behavior, and competitors evolve ever more rapidly. The five year strategic review—once a staple of board-level strategies—is increasingly outdated. Recall that five years ago, the iPad, now ubiquitous, had been on the market for only 18 months, Netflix stock was taking a beating after the company suggested it would spin off its DVD delivery business, and Spotify had just launched in the United States.

Third, companies need to build a wider range of strategic options because conditions can change so quickly.

Exhibit 1

The digital tipping point

To stay competitive, incumbents' strategic focus should **shift from digitizing the existing business model to disrupting it** as digital technology takes hold



And fourth, when conditions do change, they will need the discipline and agility to reallocate management time and resources swiftly. As Klaus Schwab, chairman of the World Economic Forum, memorably said, “In the new world, it is not the big fish which eats the small fish, it’s the fast fish which eats the slow fish.”

The catalysts of disruption

The prerequisite of a digital strategy is an understanding of the threats and opportunities that digital technology poses. A review of what peers and newcomers are up to can help in this regard and presage what the future might

hold. The problem here, however, is that there are hundreds of insurtechs to track, with more appearing as venture capital pours into the industry (to the tune of \$1.7 billion). They cannot all be monitored, and it is a sure bet that although some will succeed, most will vanish. It is therefore important to focus on the nature of the disruption rather than on the would-be disruptors, with a view to getting ahead of it—in other words companies must understand both what is happening, and why. Only in this way, according to Tom King, senior director at US software company Pegasystems, will insurers be able to respond promptly to changes in the market.

Our research suggests that digital technology can disrupt in four, non-mutually exclusive, ways. It can transform the cost structure of a business system. It can disrupt supply and demand. It can create new value propositions and markets. And it can create hyper-scale digital platforms. There are thus four questions companies should ask in order to start building a strategy.

1. To what extent will digital technology transform the cost structure of the business system?

Netflix took movie rentals and rethought the business around them, then went from DVD delivery to owning one of the world's largest video streaming services. In a digital world, all businesses are likely to be disrupted if they rely on a physical distribution network and involve manual processes that can be automated. It is easy to see how traditional insurance models, often reliant on agents with

commissions, could be attacked by companies that are able to automate advisory processes and apply advanced analytics to improve pricing and underwriting. McKinsey estimates that up to 40 percent of P&C and life insurers' expenses are locked up in their top 20 to 30 core end-to-end processes—costs that digitization can reduce, and in some cases, eliminate.

“It doesn't matter how much business you sell today, it's whether or not you can identify where [future] profits and losses lie, and what you need to jettison.”

– Tom King, senior director at US software company Pegasystems

2. To what extent will digital technology disrupt supply and demand?

In the analog world, economics can make it hard to cater precisely to individual demand. Think of the hefty package of supplements bundled together in Sunday newspapers. Most consumers do not read everything, but the economics of distribution mean they get it anyway.

Digital technology can cater to demand more precisely so that customers are no longer obliged to buy elements of a package they do not want. iTunes makes it unnecessary to buy a whole album, for example. This unbundling makes businesses vulnerable to disruption, particularly if they cross-subsidize parts of their offering, as insurers do, with direct sales channels covering the cost of more expensive agency channels.

Aware of what is afoot, some carriers, such as Progressive, enable customers to “name their price” and choose elements of a policy that fit their budget—the level of deductibles, for example. Some offer pay-as-you-go auto insurance whereby drivers are charged by the mile. And some use data on, for example, driving habits, to price products in a way that more precisely reflects an individual's risk. These developments amount to an “unbundling” of coverage, better matching the protection provided to the protection required.

Digital technology also has the power to unleash supply. YouTube has made it easy and inexpensive for millions of individuals to become published video producers, unlocking a supply of content that previously would have been too costly to distribute. In insurance, complex regulation and capital requirements have restricted supply in primary markets as start-ups seldom want to take insurance risk on to their balance sheets. But start-ups are targeting accessible slivers of the industry, primarily marketing and distribution. And institutional investors are hovering. They have already

Digital technology can cater to demand more precisely so that customers are no longer obliged to buy elements of a package they do not want.

poured money into insurance-linked instruments on the capital markets in search of non-correlated returns and higher yields, disintermediating reinsurers in the process. Some are now investing in primary markets, a move that digital technology could accelerate. It is conceivable, for example, that a manufacturer of sensors that gather data about weather conditions in order to optimize fertilization could turn to investors to back an insurance product for crops, using the same sensors to indicate whether weather conditions were harsh enough to damage them.

3. To what extent will digital technology give birth to new value propositions and markets?

There are myriad ways of using digital technology to improve value and offer new propositions, such as making purchases simpler and faster, adding fresh elements to a product or service, using data and analytics to make products more relevant, or removing costs incurred by intermediaries. Examples are emerging of carriers using it to reward consumers

with benefits for behaving in a way that aligns with their own interests—such as US insurer John Hancock offering customers discounts on products and services, as well as lower premiums, in return for leading healthy lifestyles. Some digital attackers are making it possible to buy complex products such as life insurance online, while others are using internet crowd sourcing to negotiate better deals with insurers for “long-tail” insurance products. Policies for pug dogs and diabetic travelers fall into this category.

New value propositions can lead to the establishment of new markets, by matching supply and demand in pioneering ways.

And there are new products for new risks—protection against cyber risk, for example, or cover for “sharing economy” risks such as those to which car owners are exposed when they decide to become cab drivers for Uber.

Some value propositions are emerging that threaten to undermine the existing insurance model. The more real-time data becomes available, from sensors in cars or on drones, devices installed in homes, or monitors worn on our bodies, the more

companies can learn from the analysis of that data and the more it will be possible to mitigate risk, reducing the need to insure against it. That hits the volume of demand, but risk mitigation becomes a new value proposition in the process.

New value propositions can also lead to the establishment of new markets, by matching supply and demand in pioneering ways. The likes of Uber, Lyft, and the Chinese ride-sharing company Didi Chuxing use digital platforms with location-based mapping technology to match would-be passengers with the drivers in closest proximity, along with analytics to make dynamic pricing adjustments and encourage drivers to meet demand in peak periods. It is a far cry from passengers trying to hail a taxi in the street. In insurance, online price aggregators have established markets to help consumers compare prices and bypass the traditional agent distribution model.

4. Will digital technology give birth to hyper-scale platforms?

Digital technology can give rise to companies that build platforms on a massive scale. Their size, the huge amounts of data they amass, and the depth of analytical talent they deploy—along with the network effects they generate—are hard for others to match and thus create barriers to entry.

Moreover, these companies’ skills and capabilities enable them to blur traditional industry definitions by spanning product categories and customer segments and

inventing new value chains. For example, Uber has signed a deal with Volvo to invest in the development of self-driving taxis in the United States; testing began in Pittsburgh in September 2016.³ Apple has used its unique data, infrastructure, and product platform to push into the world of finance with Apple Pay. And Chinese e-commerce giants Alibaba, Tencent, and JD.com have leveraged their volumes of data to offer microloans to the merchants that operate on their platforms. By using real-time data on merchants’ transactions to build its own credit scoring system, Alibaba’s finance arm has been able to achieve better non-performing loan ratios than traditional banks.⁴

Insurers will need to consider what their role might be in the ecosystems developing around these data platforms, and where value lies in owning and analyzing data.⁵ Will, say, a large car manufacturer that fits sensors as standard in vehicles amass enough data to dominate an ecosystem that brings together insurers and other service providers such as telecom companies, repair shops, road side assistance, telematics providers, and legal services?

A heat map for capturing value

The process of understanding these forces and analyzing the value at stake will

³ “Uber and Volvo to develop self-driving cars,” *Financial Times*, August 18, 2016.

⁴ *China’s digital transformation: The internet’s impact on productivity and growth*, McKinsey Global Institute, July 2014.

⁵ Nicolaus Henke, Jacques Bughin, Michael Chui, James Manyika, Tamim Saleh, Bill Wiseman, and Guru Sethupathy, “The age of analytics: Competing in a data-driven world,” McKinsey.com, December 2016.

reveal the need for a portfolio of initiatives that grapple simultaneously with two strategic imperatives.

The first is the need to capture short-term value. In the early stages of disruption, digital technology invariably starts to transform the cost structure of the business system and disrupt supply and demand, posing opportunities and threats to incumbents. To respond, they will need to digitize their businesses in order to cut costs, grow revenues, and improve the customer experience. Essentially, however, the business model will remain the same.

By understanding the catalysts for disruption and regularly reviewing their businesses, companies will be able to lead the wave of disruption as it gathers strength, not drown in it.

Drawing up a heat map that examines the value at stake throughout every business line will indicate the extent of the opportunity—the cost savings an auto carrier could make by digitizing and

automating the claims process, say—as well as the threat if it fails to respond—the fall in profits that would ensue if customers were to gravitate toward price-driven aggregators and comparison sites, for example. The “hot spots” will help a company decide where to prioritize initiatives, although this will depend also upon whether it has the capabilities to pursue them, and upon regulatory issues.

The second strategic imperative will be to look beyond today’s business for fresh sources of value. Pondering the potential for new value propositions and markets, and for hyper-scale platforms will suggest how digital technology might disrupt not just elements of the value chain but the entire business model. The higher up the digital curve a business line rises, the more imminent such disruption is likely to be, and the greater the need for innovation. The exhibit shows how the strategic focus shifts as digital’s influence on an industry grows. In P&C lines it is already apparent that the traditional model is being reshaped by data and analytics that make it easier to mitigate the risks we insure against today. By understanding the catalysts for disruption and regularly reviewing their businesses, companies will be able to lead the wave of disruption as it gathers strength, not drown in it.



Delivering on these imperatives will prove a hard balancing act for CEOs, faced with the constant pressure of the next earnings report. Although digitizing the existing business will reap rewards, it can require significant investment that pays off after several years. At the same time,

innovating for the future risks cannibalizing profits in the here and now, along with organizational upheaval.

The answer lies not in reverting to a strategy of incremental improvement. Competition in a digital age rules this out. Rather, it entails fully grasping where value lies, in order to shape and sequence initiatives in ways that meet strategic imperatives while maximizing quick pay-backs to protect the performance of the business. Understanding the catalysts of change has to be the starting point, helping to reveal where value-creating opportunities lie and where value is at risk, and ensuring companies disrupt before they are disrupted. □

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The age of innovation

Insurers have a choice: be disrupted or be the disruptor with new products, services, and business models.

Digital technology is disrupting industry after industry—and quickly separating winners from losers. The spoils are going to the boldest innovators. A McKinsey survey of more than 2,000 executives in industries affected by digital disruption shows that the companies with the highest revenue and earnings growth led the disruption or were fast followers, making big bets across their businesses on innovative products, digital processes, and even entirely new business models.

Most insurers, though, do not have innovation in their DNA. Regulation has curbed incumbents' ability to experiment, while limited competition has given them no particular need to do so—the size of their in-force books makes it hard for new entrants to build market share, and start-ups seldom want to take risk on to their balance sheets because of the capital required to offset it. But innovate they must. Although there is significant opportunity to capture value in the short term by digitizing their current business, they will get left behind if they fail simultaneously to use digital technology to innovate and build new business.

Exhibit 1 shows where insurtechs are concentrating their innovation efforts. To help companies think through where innovation lies, we look at three broad areas—new kinds of risk, new approaches to underwriting, and new value propositions. And we discuss how companies are organizing themselves to develop ideas and accelerate innovation.

New risks

Insurers have an immediate opportunity to write cover for new types of risk that are emerging in a digital age.

Cybercrime

Companies today run on data, which makes cyber insecurity a major concern. An intrusion can not only disrupt business but also cause great harm to a company's

“It’s hard for big carriers to innovate as they have so much to contend with already—industry headwinds, legacy issues. But they need to be in the game, right now.”

— Caribou Honig, cofounder of QED investors

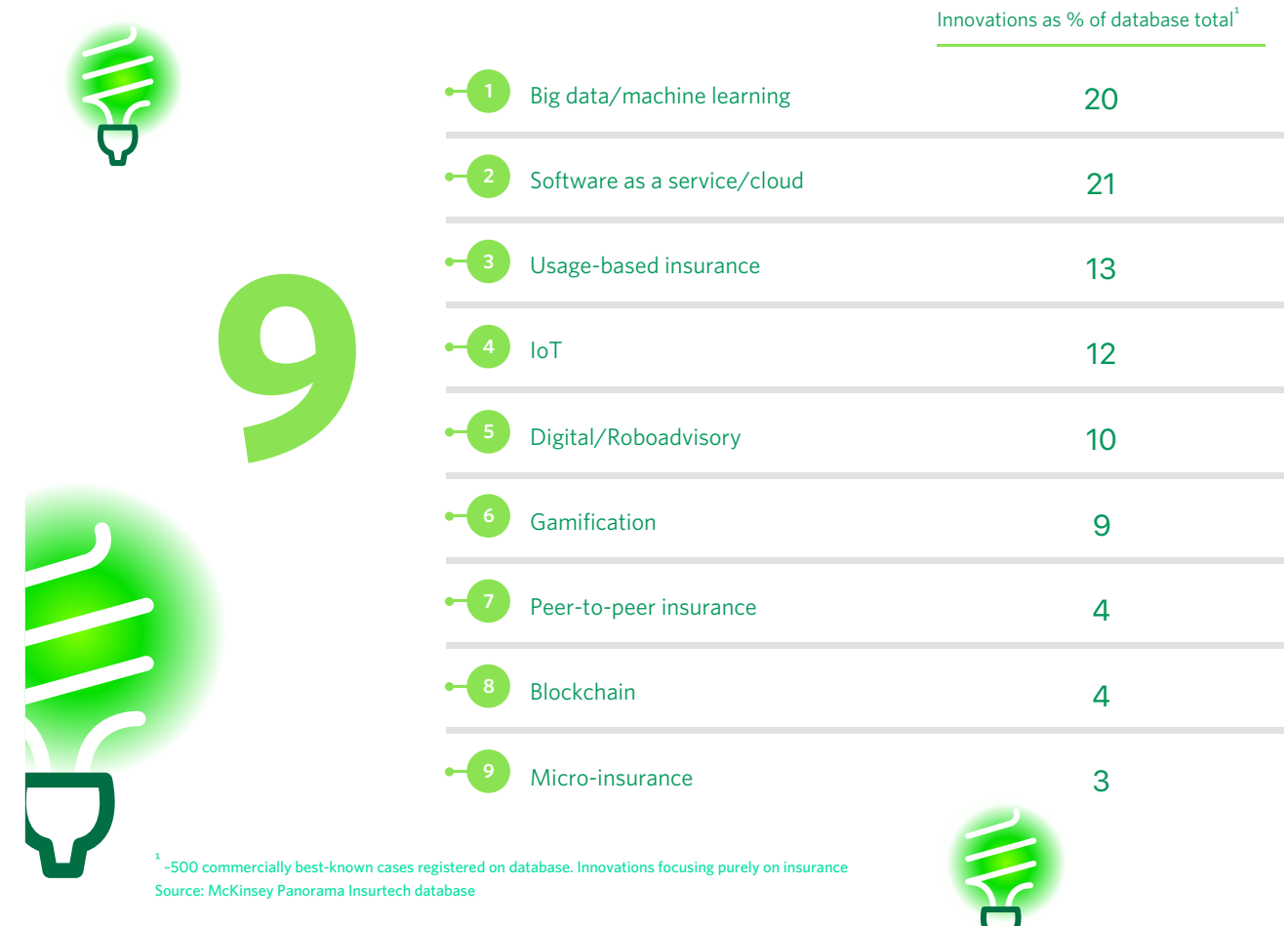
reputation, particularly if customer information such as credit card data is compromised. Consumers too are at risk, from identity theft, loss of financial assets, and unauthorized credit card use. Opportunities for carriers include prevention services and insurance integrated into the offerings of software providers (see box, “The cybersecurity opportunity—that few are seizing”).

Global supply chains

Digitization and ubiquitous data communications have enabled companies to build global supply chains. These complex networks make it possible

Exhibit 1

Leading trends among insurtechs



for companies to source supplies, manufacture goods, and sell their wares anywhere in the world. But the rising complexity of supply chains also multiplies risk. There are more points of vulnerability, and disruption in any part of the chain can quickly affect the entire business. There is thus growing demand for equally sophisticated supply chain cover.

Digital technology not only creates the risk, it also provides many of the solutions. Using the connected sensors and monitors that comprise the Internet of Things (IoT), it is possible to track the location of inventory and finished goods as they travel on trucks, ships, and planes. Predictive analytics can then be applied to data on claims, weather, and other factors to enable insurers to underwrite the supply chain risk more precisely.

The cybersecurity opportunity—that few are seizing

Cybercrime presents rapidly multiplying risks for businesses and consumers. Having almost quadrupled between 2012 and 2015, from \$112 billion to more than \$400 billion,¹ the estimated cost of cyber breaches is projected to reach \$2 trillion in 2019, or almost as much as India's GDP for 2015.²

Yet the insurance industry has not leaped at the opportunity to sell protection against this new risk. The global insurance pool in 2015, according to Lloyds, was just \$2.5 billion.

Part of the problem is demand; awareness of the risk remains limited. There are also supply-side issues. Insurers are unsure how to model cybersecurity risk and still have not decided what they can cover economically. Few have written “full” cyber cover to compensate customers for all possible losses, including data theft, business disruption, property damage, and personal injury, and a lack of reliable information on historical breaches makes pricing difficult. Moreover, there are few standards for cover and the law differs according to jurisdiction. Perhaps most important, technology and the capabilities of hackers continue to evolve more rapidly than cybersecurity protection methods.

Nonetheless, a risk this large should be the basis for a successful line of business for companies that are able to innovate. They would need to invest in understanding the drivers of cyber risk, which would require them to hire experts who understand the technical issues as well as the underwriting process, or enter partnerships with organizations that have those capabilities. They would also need to develop comprehensive histories of cybersecurity breaches and create compliance frameworks to measure enterprise risk. Given the magnitude of the risks involved, though, incumbents with strong balance sheets could have an advantage in cybercrime insurance.

¹ State of Security Survey, Symantec (2013); Lloyds of London; World Economic Forum.

² Juniper Research.

The sharing economy

New kinds of risk are emerging from the sharing economy that has grown from digital technology's capacity to match supply and demand. Online platforms such as Uber and Airbnb enable

consumers to “share” unused capacity (a car ride, the use of a spare room) for a fee. This turns a car owner into a cab driver and a homeowner into a hotelier, and alters the nature of the insurance cover that the driver and homeowner require.

New solutions are emerging. For car rides, Uber supplies drivers with limited liability cover when its app is turned on and a driver is available. Its commercial cover kicks in when a fare enters the car. For drivers of BlaBlaCars (a service that operates in France and the United Kingdom), Axa offers a combined personal and commercial package.

Various forms of cover are emerging for homeowners participating in Airbnb and other short-term home rental platforms such as Alterkeys and 9Flats.com. The platforms offer protection for damage by tenants that cannot be resolved by the owner, but with significant exclusions. Carriers such as US-based Proper, which have long offered insurance to owners of vacation rental properties, are adding cover for short-term rentals. Still, most traditional homeowner policies do not cover commercial uses of properties. As the sharing economy grows, there will surely be more opportunities to innovate and provide relevant insurance products.

New underwriting approaches

Digital technologies enable new ways to provide traditional cover and underwrite traditional risks, often by using individual rather than group data. They are also being used to reach new customers.

Micro-insurance

Traditional, loss-based insurance can be prohibitively expensive to provide for small amounts of cover. New data streams and data analytics address this

“We ... create communities of individuals, on whose behalf we negotiate with the insurance industry to bring them a better deal than they could get on their own.”

—Steven Mendel, founder and CEO of Bought By Many

problem. For example, they are enabling a form of low-cost, micro-crop insurance for farmers in emerging economies that does not require claims adjusters to trek to remote locations to settle claims. Instead, insurers use data analytics to determine if severe weather, low rainfall, or other factors would have damaged crops, and pay claims based on their analysis. This vastly reduces settlement costs, making it possible for insurers to offer affordable policies to farmers in the developing world.

On-demand insurance

In addition to facilitating the underwriting of small amounts of cover, real-time data can enable the provision of “episodic” or

on-demand cover for short periods. Sure, for example, is a mobile app for episodic travel accident insurance bought on the spot. Travelers look up their flights, enter their personal data, and purchase cover for the duration of the flight.

European telecom operator Tele2 offers travel insurance in partnership with Gjensidige, a Nordic insurer, for motorists whose insurance extends only to domestic travel. When a driver crosses a border—from Poland to Germany, say—the insurer issues a text message offering episodic cover while the vehicle is out of Poland. Another start-up, San Francisco-based Trov, has an app that enables consumers to buy short-term insurance on demand against loss or damage for items such as sports equipment and computers. If they are about to take a ride on an expensive bike or take a laptop on a vacation, the app can be used to switch the cover on and off. Another emerging form of on-demand insurance is usage-based or pay-as-you-go cover—auto insurance by the mile, for example.

Peer-to-peer insurance

Several start-ups have created peer-to-peer insurance services that aggregate customers for a group purchase. Lemonade, a New York-based start-up that has recruited veteran insurance industry executives, organizes peer groups around charitable and social causes. Consumers who purchase homeowner or renter insurance on Lemonade's online platform designate a cause to which unspent premium money

will be donated. The idea is that peer group members who share an interest in maximizing contributions to their causes will not attempt to inflate claims. One of the company's executives is behavioral scientist Dan Ariely, who says the Lemonade approach removes the conflict between carrier and the insured that is inherent in traditional insurance. As a result, he says that the company, which began offering policies in September 2016, will be able to pay claims quickly because it has less need to hold back payment until they can be verified.

“The big difference in insurance in the future is going to be service.”

— Eldes Mattiuzzo, CEO of Youse Seguros

Bought By Many, a UK-based insurance distribution company, groups those with similar insurance needs—diabetics, for example, who often have trouble getting travel insurance, or owners of particular breeds of pet. “We use a combination of search engines and social media to create communities of individuals, on whose behalf we negotiate with the insurance industry to bring them a better deal than they could get on their own,” says the company's founder and CEO, Steven

Mendel (see “Playing to connectedness: An interview with Steven Mendel of Bought by Many”).

Personalized pricing

Digital technologies increasingly enable carriers to assess risk on the basis of data about specific consumers, rather than general population data. Telematics collect real-time information about an individual's driving habits to inform the pricing of auto cover, while data from wearable devices such as fitness bands and apps that monitor adherence to medical treatment can inform life cover—services that Sureify, a tech start-up, uses to assist carriers underwriting personalized term life cover. Some carriers have experimented with using social media data as a basis for underwriting and pricing decisions—but have met opposition from platform owners.

New value propositions

In the digital era, traditional insurance models are threatened by the availability of reams of data, much of it real-time, that help mitigate risk. One of the biggest challenges on the horizon is the development of autonomous vehicles and advanced driver assistance systems (ADAS). These technologies will put passenger cars and other vehicles fully or partially under computer control, reducing premiums as driving becomes safer, and ultimately shifting liability from the driver to the car manufacturer or its software vendor. ADAS systems, ranging from adaptive cruise control to traffic sign recognition, are already becoming common on passenger cars (Exhibit 2).

Stefan Heck, CEO of Nauto, a US-based start-up that provides autonomous vehicle technology, believes that as a result, some 70 percent of loss events will disappear in the course of ten years (see “Once in four-generation change: An interview with Stefan Heck of Nauto”).

The same shift toward risk prevention exists in other business lines. Sensors in the home and devices that monitor our health reduce the likelihood of accidents or sickness. Accordingly, insurers are beginning to offer new services, often in conjunction with partners, in the ecosystems that are growing around new data. “The big difference in insurance in the future is going to be service,” says Eldes Mattiuzzo, CEO of Youse Seguros, the online insurance sales platform of Brazilian carrier Caixa Seguradora.

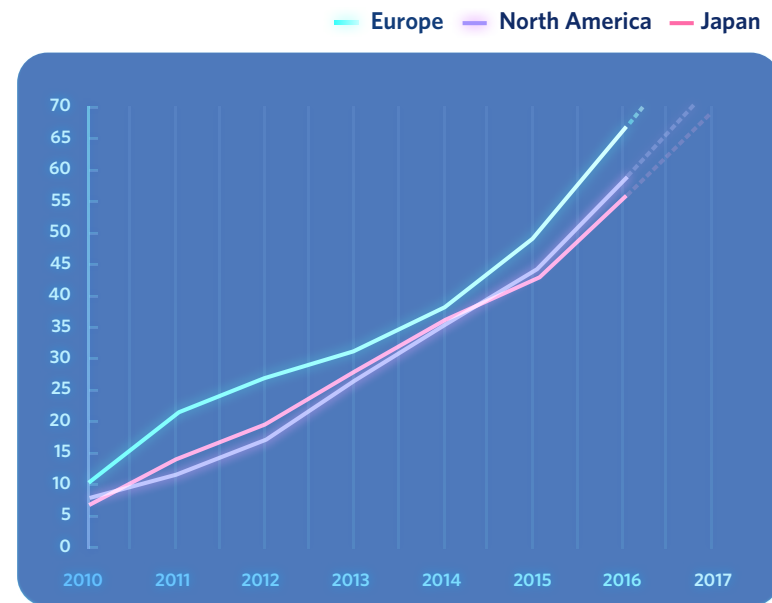
“There isn't one size fits all. Depending on our situation, we will partner, we will invest, we'll build ourselves. And that gives us all ways to plan.”

— Andrew Brem, chief digital officer of Aviva

Exhibit 2

Installation rates of ADAS¹ technology

Passenger cars



¹ Includes installation of any of the following technologies: adaptive cruise control, collision mitigation, lane departure warning, blind spot detection, intelligent lighting, night vision, traffic sign recognition.
Source: McKinsey estimates; press

Liberty Mutual, for example, is collaborating with Nest, a manufacturer of smoke detectors and other connected home products, to reduce homeowner risk. The insurer provides Nest smoke detectors to policyholders who agree to let the company check every month via wifi whether the batteries are working. The homeowner gets discounted cover in return. Linus Lundberg, head of enterprise partnerships at Nest, foresees a wealth of opportunities to build insurance products around the many connected products that

are emerging—a “one-plus-one-is-three proposition” is how he describes it. “There are products that we can provide, and a set of insurance products, so the value goes beyond reacting when something bad is happening, to helping customers prevent it from happening in the first place.”

In time, an auto insurer might be part of an ecosystem that includes not just telematics providers and car manufacturers, but also roadside

assistance services, car repair workshops, rental car services and more—all of which can be instantly accessed via a mobile app (Exhibit 3). Home insurers might become part of an ecosystem centered on an app that helps home buyers take out insurance, and also values the property, predicts utility costs, offers smart-home devices to monitor fire or flood risks, sends storm alerts, and, if a problem is detected while the homeowner is away, offers to send out an inspector or repair person.

How insurers can develop ideas for innovations

To seize the opportunities and overcome the threats implicit in digital disruption, incumbents have no choice but to innovate. Innovation must become a core capability.

We see three ways for insurers to develop new ideas and accelerate innovation: by forming strategic partnerships, by investing in start-ups that have digital expertise, and by creating in-house

Exhibit 3

An auto insurance ecosystem



expertise. They can use all three approaches, but are likely to emphasize one or another for strategic reasons.

Andrew Brem, Aviva's chief digital officer, explains it thus: "There are some things we want to do ourselves from scratch, and we have the capabilities, but sometimes we take equity investments. There isn't one size fits all. Depending on our situation, we will partner, we will invest, we'll build ourselves. And that gives us all ways to plan."

speed: The hallmarks of a successful IoT strategy").

Allianz, for example, has set up a joint venture with Chinese internet giant Baidu that enables it to use data on consumers' online behavior to create customized offers. If an individual orders a plane ticket, for instance, the system will automatically send an offer for flight insurance. This not only gives Allianz a new way to sell insurance, it also grants the company access to the vast Chinese market, which it had trouble cracking on its own. The Baidu partnership will, says Allianz CEO Oliver Bäte, enable the insurer to "jump the S-curve" in China.

AIG, meanwhile, has formed strategic partnerships with IBM and other technology vendors to boost its expertise in risk analytics and cybersecurity. Insurers' need for technology capabilities is likely to be a prime reason for embarking on partnerships.

Investing in start-ups

Whether through direct or venture investment, carriers can buy into new companies to learn more about emerging technology and its applications. AIG, for example, has invested in Human Condition Safety, a provider of wearable devices aimed at maintaining workplace safety. Munich Re's equipment insurance subsidiary Hartford Steam Boiler (which already uses drones for site inspections) has invested in Augury, which uses sensors and analytics to monitor heating, ventilation, and air conditioning systems, improving maintenance and helping to prevent break-downs.

Some insurers are funding technology incubators. Swiss Re, for instance, has set up an insurtech accelerator in Bangalore, India, to help start-ups develop products and services. Technology under development ranges from data analytics for predicting health outcomes to artificial intelligence for customer engagement.

Insurers not only learn about new technologies from these investments, they also gain exposure to more agile ways of working. In other words, working with start-ups helps older companies build a digital culture. Caribou Honig, founding partner of QED investors, which supports high-growth, data-led businesses, believes working with start-ups is essential to "be in the game."

In-house innovation factories

Our view is that innovation is too important to be outsourced entirely. Accordingly, companies need to get very good at taking ideas themselves and figuring out how to commercialize them, roll them out on a large scale, and integrate them with existing processes, functions, and lines of business.

One way to improve in-house innovation is to build dedicated labs. These units are set up with a mandate to coordinate the development of ideas and support the scaling-up of the most promising ones. AXA, MetLife, and Aviva have all launched labs in Singapore, where the government has backed the development of an insurtech industry and companies have access to the growing Asian market. AXA is looking at innovation in data storage and analysis, while MetLife's LumenLab focuses on innovations for healthy living.



This is the age of digital disruption. Across industries, insurgents with digitally enabled business models are challenging incumbents and their established business models. The incumbents have a choice: be disrupted or be the disruptors. Those that prosper in the digital future will be those that choose to be disruptors and invest in innovation today. □

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The authors would like to thank Olga Yurchenko, an engagement manager in the Boston office, for her contribution to this article.

“We’ll see a dramatic reduction in accidents as real-time collision warning and increasing automation come into vehicles—by 70 or 80 percent in the long term.”

— Stefan Heck, CEO of Nauto

Strategic partnerships

For most insurers it would be unrealistic to pursue innovation entirely under their own steam. Partnerships can help them rapidly provide new types of policies or ways of selling them, gain expertise, and play in ecosystems beyond the insurance industry (see “Partnerships, scale, and



Capturing value from the core

Insurers' existing customers, brands, data, and technical skills are valuable business assets if they can be catapulted into the digital age.

There is plenty of talk about how digital technology will affect consumers' need of insurance. The advent of autonomous cars will reduce the requirement for auto insurance, for example, while monitoring by the Internet of Things will lead insurers into businesses that help consumers mitigate risk rather than simply protect against it.

Without doubt, insurers must take a hard look at what the future might hold and strategize accordingly. But in the nearer term, customers' insurance needs will change less radically than the ways in which those needs can be met with digital technology—and there is considerable value to be had from a carrier digitizing existing business as a result. We estimate, for example, that a typical large auto insurer could, over a five-year period, more than double profitability by harnessing the power of digital to attract and satisfy more customers, while simultaneously cutting operating costs and improving pricing and underwriting accuracy. (See “Facing digital reality” for further details of this analysis.)

It is crucial such value is captured, as it is only by digitizing the core that insurers will be in a position to compete over the long term, however the industry evolves. Doing so will generate the funds for future investment as well as build the skills and capabilities that will be the hallmark of successful carriers.

Capturing this shorter-term value is no easy task. Existing customers, brands,

data, and technical skills are valuable business assets, but they need to be catapulted into the digital age. That will require the reinvention of the core business and the rethinking of decades-old beliefs and practices, with more rigor and determination than most insurers have shown in the past. Simply hooking digital assets—a digital sales channel or a snazzy new service app—on to an analog business model does not make a digital business.

Existing customers, brands, data, and technical skills are valuable business assets, but they need to be catapulted into the digital age.

Instead, carriers need to digitally redesign entire customer journeys—from the moment a customer considers taking out a new policy to the moment of purchase, for example, or from the moment a customer needs to make a claim to the moment of reimbursement. That in turn will require an integrated approach: the digitization of customer-facing processes and the seamless automation of back-end ones.

Redesigning customer journeys

Central to capturing value from the core business is recognizing how digital can drive a fundamental shift in the way companies interact with customers. No longer do customers have to contend with what, from their perspective, are slow and frustrating processes defined by a carrier's internal functional silos and technical limitations. Instead, digital technology and the redesign of customer journeys can help them to move quickly and seamlessly across channels and touchpoints, and deliver personalized communications. Indeed, digitization in other industries has led customers to expect nothing less than this level of ease and convenience.

The redesign of a customer journey model has three components. The first is design thinking—putting customers at the center of the business and considering how best to meet their needs and how they interact with the business at each stage of each journey they embark upon. The newly designed journey is enabled by the second component, automation and analytics. These are used to anticipate customer demands, shorten waiting times, personalize experiences, and automate simpler customer interactions (a small auto claim, for example), while significantly reducing costs and complexity for carriers. A rapid launch of the redesigned journey is then ensured by the third component, agile working methods, which are deployed across the business, not just in IT. All these

components need to be addressed to improve the underlying value levers of the insurer's business model.

“We’ve changed from knowing everything upfront to trying and testing. Where we used to have everything ready and done before we put it into action, now we can put it into action and learn on the way.”

— David Stachon, CEO
of German direct insurer
CosmosDirekt

The outcome is threefold: higher customer satisfaction, greater efficiency, and greater effectiveness. Our work suggests that in a claims journey for auto insurance, for example, digitization can raise customer satisfaction by between 10 and 15 points, improve claims adjustment expenses by as much as 30 percent, and increase the accuracy of payments—by cutting down on fraud, for example—by around 4 percentage

points. (Exhibit 1 explains what underpins these figures.) In the past, trying to pull off this hat trick seemed an impossible task, but not today. As Oliver Bäte, CEO of Allianz, said in a speech recently: “We can meet customer expectations that were too expensive in the past. We can customize and individualize things and we can make them more flexible. Flexibility used to be the opposite of efficiency, and that is the paradigm that is disappearing because you can offer a very efficient solution at very low cost.”

The fundamentals of a redesign

Before considering the process for redesigning customer journeys, companies need to take on board the fundamental elements that support it: customer empathy, the marriage of form and function, an iterative approach, and agile, cross-functional teams.

Customer empathy. Good design is based on an understanding not only of what customers say they want, but of what might go unimagined if they are bound by the present. Henry Ford put it like this: “If I had asked people what they wanted, they would have said faster horses.” What they really wanted, of course, was something that was not just faster but more comfortable and capable too.

It is customer empathy that enables digital companies to move beyond incremental, me-too improvements to drive step-changes in customer experiences—perhaps mapping the progress of an incoming tow truck to relieve customer

anxiety after a car accident. The success of many new, digital insurance companies lies not so much in the digital tools they deploy but in the experience those tools enable: a faster, more transparent, and more intuitive approach to shopping for and servicing insurance.

The marriage of form and function.

Good design must also marry form (the customer experience) with function (the value to the business). The design process needs continually to check that both are being met. Reducing time spent on the phone for simple sales and service transactions is an example of where customer and business interests meet in a marriage of form and function.

A typical large auto insurer could more than double profitability over 5 years by harnessing the power of digital.

An iterative approach. In a digital era, capturing value demands an iterative, speedy development of processes and services to keep pace with changing technology and customer expectations. It is important that insurers feel comfortable with the idea of testing products and

Exhibit 1

Effect of digitization on customer satisfaction, efficiency and effectiveness for an auto insurance claim

A CUSTOMER SATISFACTION
Increase NPS¹ by
~10-15 ppt

B EFFICIENCY
Reduce claims-adjustment expenses by
~20-30%

C EFFECTIVENESS
Improves accuracy of claims payments by
~4%



Higher customer satisfaction

MOVE FROM: Below-market satisfaction levels

NOTIFICATION OF LOSS

- Wait up to 5 min in claims hotline and take ~20 minutes to report a claim
- Report of claim online within <3 min

CLAIM MANAGEMENT

- Several touchpoints with claims handler, claims adjuster and repair workshop
- Receive online a choice of options for claim

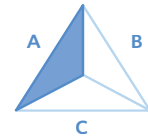
LOSS ASSESSMENT/REPAIR

- No transparency on status of claim
- Appointment with repair workshop/claims adjuster scheduled online
- Self-service damage assessment via app in <5 min at any time and location
- Full transparency on claim status via push messages/app

CLAIMS SETTLEMENT

- Wait up to 20 days for processing and payout
- Real-time processing and payout of cash settlement: settlement takes 2 hours

TO: Increase in customer satisfaction



Greater efficiency

MOVE FROM: High costs and low scalability

- <10% of customers report claims online and their data has been entered into the insurer's systems manually by a claims handler

NOTIFICATION OF LOSS

- 60% of claims reported online by customers and agents with automatic feed into insurer's systems

CLAIM MANAGEMENT

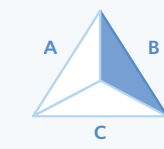
LOSS ASSESSMENT/REPAIR

- 40% of cases require on-site appraisal of ~2 hours
- 20% of calls to call center are for status requests
- 30% of claims use digital tool for remote damage assessment or appointment selection
- 50% drop in status request calls owing to use of status messages

CLAIMS SETTLEMENT

- 100% of payments triggered manually
- 50% of loss payments triggered and executed automatically

TO: 20-30% loss-adjusted expenses reduction



Greater effectiveness

MOVE FROM: High costs and low scalability

- 15% of high-severity cases detected within 10 days

- Straight-through processing reserved for glass claims only

- <5% of cases steered into partner network

- Fraud analysis conducted sporadically at specific touch-points

NOTIFICATION OF LOSS

- 65% of high-severity cases detected within 10 days

CLAIM MANAGEMENT

- 50% of claims automatically routed into target process

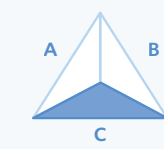
LOSS ASSESSMENT/REPAIR

- >50% of cases steered into partner network

CLAIMS SETTLEMENT

- Continuous fraud monitoring

TO: Reduction in claims payment of up to ~4%



¹Net promoter score measures the loyalty between a company and its customers

experiences with customers as they are developed—rather than waiting until they are complete—in order to obtain immediate feedback and ensure the solution delivered is the one customers want. The aim is to bring a prototype, known in venture capital and start-up jargon as a “minimum viable product” (MVP), to market in months rather than years. The MVP is then refined in a series

of tests with users. It is easy to imagine the Swiss army knife being developed in this way—first the simple blade, then a bottle opener, then scissors and file, and eventually an entire suite of tools.

David Stachon, CEO of German direct insurer CosmosDirekt, explains how the test-and-learn approach speeds progress. “We’ve changed from knowing

everything upfront to trying and testing. Where we used to have everything ready and done before we put it into action, now we can put it into action and learn on the way. That’s a huge paradigm shift.” The methodology also avoids costly mistakes, as wrong moves can be quickly corrected with early feedback. But insurers will need to embrace failures in order to learn from them, and recognize that the journey is never really complete: it undergoes constant iteration.

Agile, cross-functional teams. In a rapidly changing environment, insurers’ various functions—risk, underwriting, claims, marketing, and sales—offer deep expertise but are often too rigidly siloed to respond quickly. Moreover, in a functional set-up, no one owns the full customer experience. It can take several weeks and many working sessions to create a complete view of it, and still not everyone will be committed to its improvement given the various performance metrics used. The solution is cross-functional teams whose common goal is to remove customer pain points and capture the business opportunity.

Adopting an agile approach, these teams work in “sprints” to meet specific, agreed development targets week by week, incorporate regular user feedback, and hold daily meetings to ensure progress is transparent and deadlines are met. Regular review meetings with other stakeholders from affected business functions help identify areas for enhancement. In this arrangement, IT

and the business work closely to splice business and customer. IT’s role thus becomes strategic—it is no longer a support function. (See “IT moves center stage” for more on this topic.)

The approach

These fundamentals are all reflected in the redesign of a customer journey. There are three stages in the redesign: define, design, and deliver (Exhibit 2). The first stage, define, is about understanding what customers want and why, and how the business will benefit from meeting their expectations. For simple claims, for example, customers might seek assurance that their case is being fast-tracked without their having to call the adjuster to check progress; the adjuster saves time as a result. These customer needs are uncovered by mapping current customer journeys and identifying opportunities and pain points, an exercise that can be achieved within three to five weeks through ethnographic market research and close customer contact. A company might not choose to fix all the opportunities and pain points identified, but it does need to address the highest priorities. This stage forms the foundation of cross-functional collaboration that will mark the new way of working.

Next comes the design phase. For the time being, it ignores constraints such as immature technology or regulatory limitations and instead focuses exclusively on the customer need and the business objective (“maximum aspirational

Digital distribution and claims in P&C

Lemonade, a New York-based start-up that offers insurance for renters, uses a conversational chatbot powered by artificial intelligence to recreate the experience of texting or messaging with an agent to deliver tailored sales recommendations, followed by instantly issued policies. When a claim occurs, the same chatbot is used for first notice of loss and damage assessment; in some cases it will issue payment in under three seconds. Lemonade aims to use digital technology to improve the customer experience and keep its expense ratio down, passing savings on to customers.

Digital distribution in individual life

Haven Life, a direct-to-consumer life insurer started by MassMutual, uses digital technology to offer medically underwritten term life insurance quickly and at low cost. By tapping into other data sources such as prescription history and motor vehicle records, Haven can issue policies without asking customers to undergo unpleasant, lengthy, and costly (for the carrier) medical tests. And by going directly to the consumer it eliminates the distribution expenses associated with agents—often more than 100 percent of the first year’s premium.

Exhibit 2

Capturing value from the core by redesigning customer journeys

Define, design, and deliver the minimum viable product within six months



proposition”). To extend the claims example, the team might decide that a lightweight chatbot based on artificial intelligence is the best way to accelerate customer response times. It would test the concept with customers, refining it several times, and then break it apart into a set of discrete features. Each is assessed for feasibility (business, technical, and regulatory) in order to prioritize those features that can be developed immediately (the MVP). In this case, instead of a chatbot, adjustors might first use a texting platform, augmented by automatically generated status

updates, while the tech team works on the advanced analytics-driven chatbot for subsequent releases.

In the third phase, deliver, the cross-functional team embarks upon one- to two-week development sprints with a commitment to release the MVP to market within three to four months. This requires close coordination between business and IT, often using an agile development method that requires a strong product “owner” who is empowered to make decisions about the scope and form of the solution, a “scrum master” who leads

Exhibit 3

How current customer journeys could be redesigned



the charge for a new way of working, a team of four to six full-stack developers, experience and visual designers, and representatives from relevant business functions. Once released, often to a limited set of end-users at first, customer feedback is gathered. This, along with confirmation that the underlying technology is stable, is used to develop version 2.0 almost immediately with the next set of prioritized features.

Scaling up

Almost every customer- or agent-facing touchpoint is part of a journey that could be digitized to some degree to make it more satisfying for customers, more efficient, and more effective. Exhibit 3 describes a handful of journeys ripe for redesign, with examples of how the customer experience could be transformed.

The question thus becomes, which customer journeys should be tackled first? The choice will differ by organization, but it is important to prioritize journeys that will demonstrate early impact and so gather enthusiasm and support for more investment.

Generally, the choice and sequencing are guided by the value likely to be captured and the feasibility: is the IT architecture in place, and are there enough people with the right capabilities? This will shape the roadmap for the coming months. An

aggressive target would be to redesign 25 to 35 journeys within three years, accelerating the pace of the roll-out during that period as the redesign approach improves with experience.

To support the roll-out, IT infrastructure often needs upgrading to include modern technology stacks, cloud architecture, automated testing, reusable application program interfaces (APIs), and a flexible middle layer that links customer-facing applications to underlying systems. New hires and new partnerships will also be required to build the necessary skills, and different organizational structures will have to be considered. Some companies choose to set up a separate division to lead digital initiatives, believing they need the distance, space, and a degree of autonomy from the old business in order to flourish.



As technology evolves, so will the extent to which customer journeys are transformed to include an array of products and services. Home insurers, for example, might become part of an ecosystem centered on a mobile app that not only helps home buyers take out insurance, but also values the property, predicts variable costs such as annual energy charges, helps the homeowner catalog possessions against any future claim, offers smart-home devices to monitor fire or flood risks, and, if a problem is detected

while the home owner is away, offers to send out an inspector. The app could even send alerts of pending storms, advise on precautions that might be taken to protect the home, and offer a snow removal or repair service once the danger passes.

Redesigning customer journeys is not therefore simply a way of creating value from insurers' core business today. It also prepares them for the future. The cost savings the process delivers will be essential if insurers are to compete with low-cost digital attackers and invest in innovative products and services. Just as importantly, it equips today's insurers with the means to adapt swiftly and continuously to changing customer needs—whatever the shape of tomorrow's insurance industry. □

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Insurers have always offered “virtual” products and based their success on a data-driven business model. Information technology has thus been essential to their operations. Yet the industry has been slow to adopt digital technology and, in particular, to grasp the benefits arising from the Internet of Things (IoT). If it is to do so, it needs to put its foot firmly on the accelerator.

The soaring number of internet-connected devices that constitutes the IoT signals their influence. In 2010, there were 12.4 billion. By 2025, it is estimated there will be more than 50 billion. These devices, equipped with sensors and activators and attached to all manner of objects or worn by people, can convey vast amounts of data back to companies in real time and enable virtually immediate analysis and response, often without the need for human intervention. The way companies in many industries operate is changing because of them.

In the energy industry, for example, the IoT is being applied to the maintenance of wind turbines to improve their repair speed and reliability. In agriculture, sensors that monitor soil humidity and trigger irrigation are raising productivity. For insurers too, the IoT presents an array of opportunities, particularly in relation to the way they interact with customers—but it also poses a threat to existing business models. A winning IoT strategy will depend upon the partnerships and scale insurers can build, and the speed at which they do so.

The emergence of ecosystems

At present, there are four primary areas for insurers considering an IoT strategy: connected cars,¹ connected health, connected homes, and IoT in commercial lines. The IoT can enhance existing business models in each and allow for more accurate risk assessment. For example, auto insurers used to price

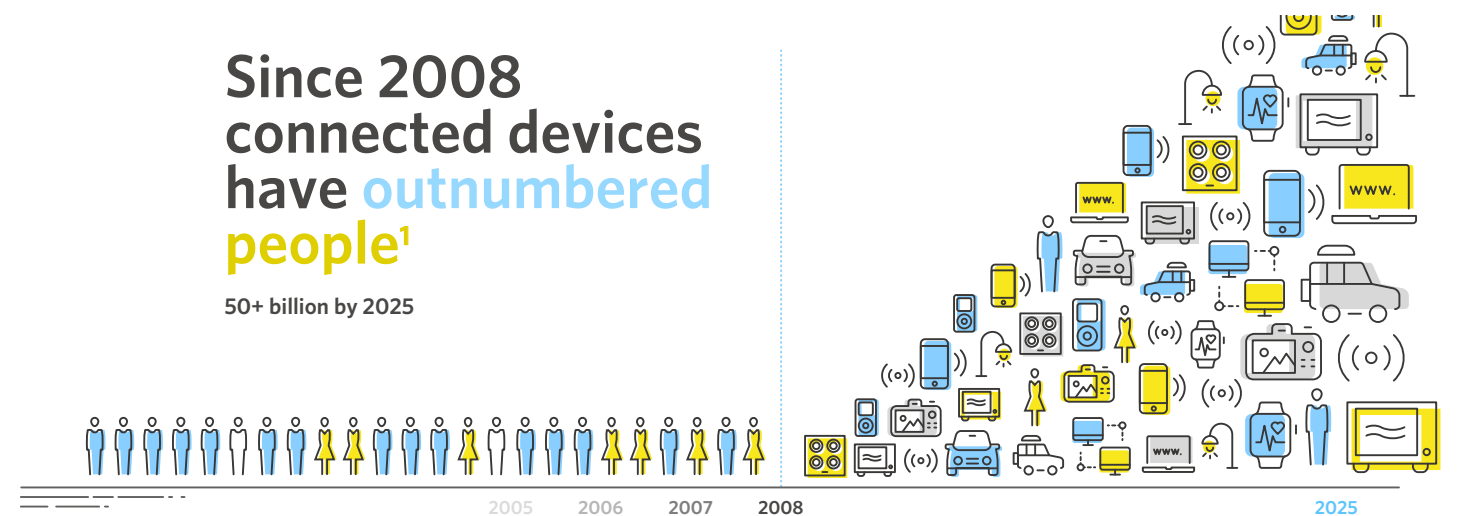
¹ For more detail, see “Shifting gears: Insurers adjust for connected-car ecosystems,” McKinsey.com.

Partnerships, scale, and speed: The hallmarks of a successful IoT strategy

The Internet of Things both promises to enhance and threatens to undermine insurers’ business models. A three-pronged strategy is needed to secure its benefits.

Since 2008 connected devices have outnumbered people¹

50+ billion by 2025



¹ Source: Statistisches Bundesamt, Deutsche Bundesbank, Prognos, Digital Society Study, Thomas Nipperdey, McKinsey.

policies on the basis of proxy variables such as the age, residence, and credit score of a driver. Today, they can price on the basis of real usage and driving behavior, such as how fast a vehicle is being driven and whether it is being driven at night. In a commercial setting, insurers can now know whether a business owner is following required safety and maintenance procedures.

point. Cars are increasingly equipped with sensors that, besides monitoring a driver's behavior and vehicle usage, can collect other vehicle data such as oil temperature, brake wear, and tire pressure. A host of new applications are thus enabled that meet customer demands for convenience, safety, and security. And as their number grows, an ecosystem forms around the connected car, involving automakers, telecom companies, sensor and chip manufacturers, digital platform giants such as Uber, academic institutions and standards-making bodies, and, of course, insurers.

The emergence of this connected-car ecosystem changes the competitive landscape for all participants, but particularly for insurers. Connected cars have fewer accidents and breakdowns—the new technology increasingly prevents them. Hence, premiums fall. This downtick is potentially aggravated by significant changes in risk distribution. Connected devices can separate out the high-risk customers from the lower-risk ones, so the insurer's focus moves to predicting and managing individual risks rather than communities of risk and to developing new actuarial models. Moreover, careful drivers might expect significant discounts on their insurance premiums that will be difficult to balance with price increases for higher-risk drivers. These developments are expected to put pressure on hitherto stable revenue streams.

The loss of these risk-based revenues could well be offset by the emergence of

new, service-based revenues, however. Insurers could offer risk-prevention services, alerting drivers that their car needs a service, for example, or finding smart parking solutions. They could even offer proprietary data and analytics solutions to third parties, such as media agencies that focus on location-based advertisements.

Yet, notwithstanding assets such as proprietary data, long-established customer relationships, and analytical capabilities, insurers might not be in the best position to tap the IoT. To access the valuable data from sensors upon which new, hybrid insurance models depend, they will probably have to enter partnerships with the companies that own the data, such as auto manufacturers and health equipment producers—and these companies might have better contacts with their customers than insurers do. In that case, auto manufacturers that fit monitoring devices to every car as standard, or telecom companies that upgrade buildings with smart home sensors, could become gatekeepers to insurance customers. At the same time, companies outside the insurance industry are building risk-related data and analytics, alongside service capabilities. In other words, the IoT could undermine insurers' two hitherto critical competitive advantages—their underwriting skills and their customer access.

Becoming an attractive partner

What will it take for insurers to succeed in a connected world? Carriers should start by asking themselves three questions. Can I

find the right partner? Can I build enough scale? And can I move quickly enough?

The question of finding the right partner is closely related to the question of building sufficient scale. Any partner will be need to be sizeable. That is because very large amounts of sensor data will be required, on top of the proprietary data insurers already have, if meaningful insights are to be extracted from it, especially to get to sufficiently long claims histories in order to assess risks. At present, in respect of connected cars, for example, many sensor systems are of limited value because they have neither sufficient geographic coverage nor a link to data on actual claims frequency or severity.

Insurers need to make themselves attractive potential partners.

Insurers can enhance their chances of finding the right partner by considering carefully how they position themselves within an IoT ecosystem. For example, consumers are increasingly suspicious of companies collecting their data; thus insurers can present themselves as trusted and reliable collaborators. They can also highlight their capabilities in risk assessment. Yet ultimately, the most attractive insurers in the ecosystem will be those keen to build risk mitigation capabilities too, and to help provide services such as roadside assistance and medical assistance.

While offering plenty of potential to enhance the business model, connected devices also challenge it.

On top of the core business of offering insurance policies, connected devices also give insurers the opportunity to interact more often with their customers and to offer new services on the basis of data collected—a step change in an industry where customer relationships are often delegated to an agent or broker, and customer touchpoints tend to be limited to annual renewals and occasional claims.

While offering plenty of potential to enhance the business model, however, connected devices also challenge it. The auto industry—the most mature sector in terms of its adoption of connected devices—illustrates the

This leads to the third question: can I move quickly enough? Before long, the IoT will reach a tipping point where insurers not yet in the game could find themselves locked out. Unless they move fast, they might find it hard to secure a partner with the necessary mass of data and customer access. An auto manufacturer might need only one insurance partner, after all. Similarly, in the connected home market, those with the data are likely to be picky. In the end, this could be a winner-takes-all situation in which first movers shape the market and sustain a competitive advantage.

Insurers therefore need to make themselves attractive potential partners. That means defining a compelling value proposition and building the critical capabilities: next-generation IT that can interact with multiple external systems, advanced analytics that connect an insurer's data with insights from partners in the various ecosystems, the ability to integrate coverage and service solutions, and digitally native talent experienced in agile and test-and-learn modes of working.

The inevitable uncertainty that still surrounds the development of the IoT should not prevent insurers from taking bold, urgent action. The fast lane is the place to be. □

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Modernizing IT for a strategic role

IT has long been seen as a cost of doing business by insurance companies. In a digital era, it must be modernized and recast as a strategic one.

Insurers' success has always depended upon their ability to analyze data, and thus to price and underwrite policies accurately. The purpose of IT has been to support these capabilities and as such it has been regarded as a cost of doing business. In a digital environment, this relationship and attitude have to change. While the successful insurers of the future will still excel at the analysis of large data pools, their IT functions will move toward playing a strategic role. In the words of Danny Dagher, group chief information officer of regional universal banking group Bank Audi, "There are many insurance companies that run IT as a support function. [In today's environment,] that will kill them."

The reason is that technology is defining the winning business model in insurance, as in other industries. It has set a high bar for service—with customers now expecting simplicity, speed, transparency, and customization—while reducing the cost of that service. At the same time, with so much real-time data being generated in a connected world, digital technology is pushing insurers toward new types of business that help consumers mitigate risk rather than simply protect against it.

If IT is to sit at the center of a new business model, insurers will need to make two commitments. First, they will have to invest heavily to build IT capabilities and modernize core platforms. For some incumbents, that might mean as much as 10 percent of a single year's premiums spread over a five-year period, depending on the starting point and the extent of the modernization needed. That level of spending might be hard for some to contemplate, not least because premiums are destined to fall as a result of digital technology (see "Facing digital reality"). But they should bear in mind that wise investments to upgrade IT can ultimately lower their IT and operating costs relative to those of their peers and bring efficiency in IT to the level required in today's market (Exhibit 1).

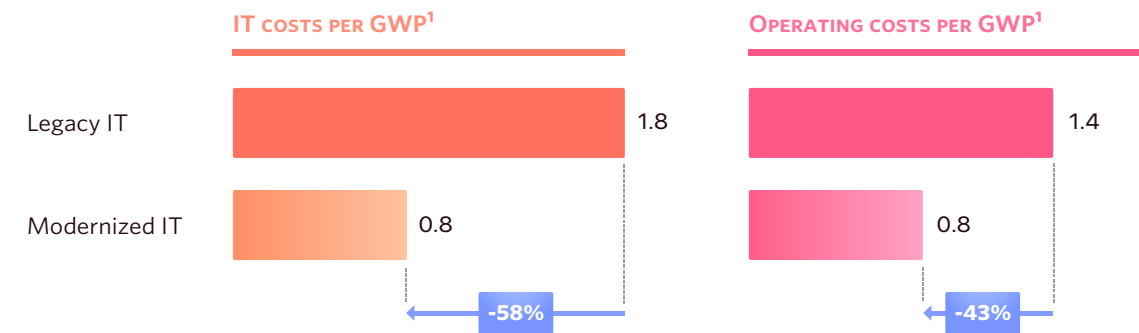
Second, insurers will need to commit to new ways of working. That means a differentiated approach to IT development, and a more collaborative IT operating model that changes not only the way business leaders work with IT,

With so much real-time data being generated in a connected world, digital technology is pushing insurers toward new types of business that help consumers mitigate risk rather than simply protect against it.

Exhibit 1

Comparison of costs incurred by modern and legacy IT systems

Percent (average of Q1 2016 of a sample of life insurance companies)



¹ Gross written premium

Source: McKinsey's insurance cost benchmark Q1 2016 Life insurance sample, expert interviews

but also how they think about IT. Without this change, large investments could be wasted.

An understanding of what IT needs to deliver in a digital age reveals why these commitments are so important.

The deliverables

There are four elements of a high-performing digital insurance business (Exhibit 2).

A digital portfolio of products and services within an ecosystem of partners

The products and services that digital technology enables constantly evolve. A leading-edge portfolio already includes features such as dynamic pricing, whereby prices are instantly adjusted based on predictions relating to claims or client churn, for example, and real-time customization of products from a set of both mandatory and optional product modules, again allowing for dynamic pricing.

New types of product will emerge as digital technology alters the nature of the industry. Access to ever more real-time data, particularly via the Internet of Things,

A large European insurer has modularized its auto insurance to enable customers to tailor policies to their needs—either by choosing one of three pre-defined packages or by assembling a policy from a range of modules including roadside assistance, rental car guarantee, and compensation for loss in value. Because the dozen or so modules are standardized and individually priced, the straight-through processing (STP) rate for the issuance of policies is close to 100 percent, delivering considerable cost savings, while the average new-business premium per contract has risen by 6 percent.

means more accurate assessment of risk, but also less risk. Sensors in the home can warn of the danger of fire, sensors in the car can help prevent accidents, and sensors worn on the body can alert physicians to health problems. In addition, the data gives rise to new services that can be combined with insurance products—a medical

check-up, or an automatically triggered appointment for repairs when a fault is detected on a car.

Importantly, in a connected world, insurers will need to complement their proprietary data with data from other industries and external sources. For example, car manufacturers will

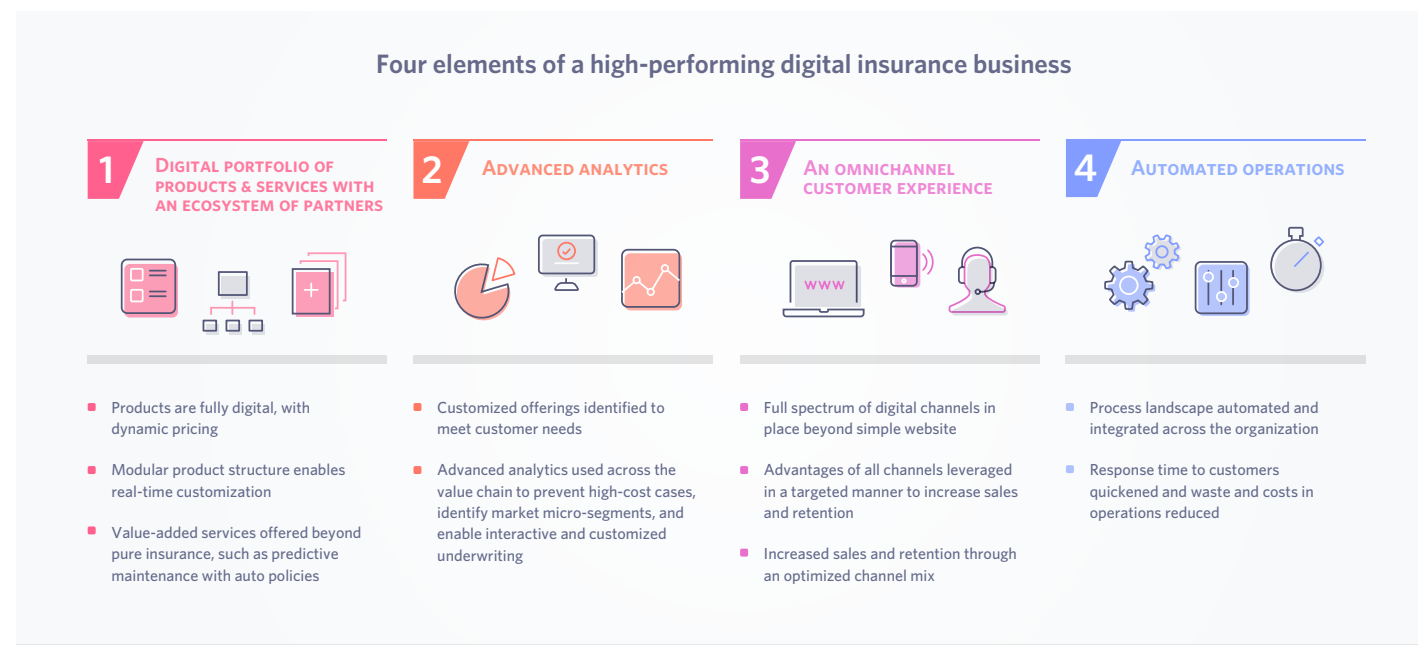
arguably have more insight into a driver's risk than insurers do once sensors become fitted to vehicles as standard. Insurers will therefore no longer be able to rely solely on their underwriting skills, but will need to partner with companies from other industries, such as auto manufacturers and telecoms operators, to become part of the ecosystem forming around the data stream, offering products and services of which insurance is but one component (see "Partnerships, scale, and speed: The hallmarks of a successful IoT strategy").

required to implement them either in the product system or other core systems.

IT will also need to manage quite different relationships. Under the traditional insurance model there was clear differentiation between a carrier's customers and suppliers. But that line is blurring as insurers increasingly offer value-added services that are provided by external partners, in addition to traditional insurance products, and an ecosystem of partners takes shape.

A Dutch insurer has partnered with a leading technology company to develop an internet platform for the remote monitoring of chronically ill patients, aimed at containing costs and increasing customer satisfaction by encouraging healthier lifestyles. In a similar effort, South African insurer Discovery has developed the Vitality platform, now available globally through partnerships—with John Hancock in the United States and AIA in Singapore and Australia, for example. It encourages its more than 5.5 million members to lead healthier lifestyles, and in return offers discounts on a range of products and services.

Exhibit 2



IT capabilities clearly contribute to the value of such digital portfolios. Technically, product systems need to be flexible in order to map modularized product structures, for example, and must lend themselves to being integrated, alongside other systems in the IT landscape, with those of external partners to enable joint development, testing, and release. Organizationally, IT needs to support the business to bring new products to the market within weeks rather than months, and with little or no additional IT effort

An omnichannel customer experience

Whatever products and services an insurer offers, customers want to access them across a range of channels where they enjoy the same high-quality experience that they are used to from other industries, such as retail. And they want to be able to switch from one to another without the disruption of having to repeat themselves or re-enter data. Companies that fail to provide this omnichannel experience will lose customers to competitors that do.

A US insurer has launched a mobile app that enables customers to get an instant quotation for auto insurance by taking a snapshot of their driver's license, to report vehicle damage by sending photos, and to find a service center for repairs. Claims processing time has fallen by up to 20 percent as a result. A European insurer has launched a similar app for mobile quotations and underwriting; cycle times for policy issuance have fallen from three weeks to three minutes.

The implications for insurers are clear. They need round-the-clock platforms for all channels, with functionalities available to customers, sales partners, and external partners on multiple devices and user front-ends. They need to equip the salaried salesforce and tied agents with mobile devices and applications that ease the sales process with existing and potential customers. And they need to provide those customers with self-service tools that enable them to acquire real-time quotations, make administrative alterations to policies (such as changing an address or direct debit information), or notify a claim.

Automated operations

The automation of processes increases customer satisfaction while reducing operating costs, and touches every step

in the value chain regardless of the line of business or channel. The generation of sales leads and the processing of high-frequency, low-cost claims are just two candidates ripe for automation. Increasingly, however, insurers will need not only to automate basic processes further, but also to deploy robotics with artificial intelligence and advanced analytics to make better decisions, faster.

Achieving a high degree of automation requires profound changes to IT architecture because every layer is affected. For example, policy administration and claims systems will need to be overhauled, be it in response to a higher overall level of IT intensity, the introduction of novel robotics and script systems, or upgraded workflow engines.

A Scandinavian insurer has rigorously automated the claims handling process. For first notice of loss, it deploys "smart" scripts to capture the fields relevant for STP; in claims handling it checks coverages through a rules engine and calculates costs upfront through a data-based inspection system. In these ways, the insurer has been able to achieve STP rates in claims of up to 30 percent in auto insurance and 60 percent in health.

Advanced analytics

Insurers increasingly employ advanced analytics to help them make better decisions. Some auto insurers, for example, use credit scores to assess risk more accurately, as analytics have revealed that people who pay their bills on time tend to be safer drivers. And some life insurers are using social network and geographical data to reduce fraud by up to 25 percent. Ultimately, advanced analytics will become a capability that sits at the core of the way business is conducted across the value chain, further driving the level of automation.

value-creating insights via predictive models or machine learning.

A strategy for building next-generation IT

Delivering on all this is replete with challenges. There is the technical challenge of overcoming the drag of legacy systems and the practical one of hiring new talent—both of which may be familiar to some insurers. Yet if the full strategic value of IT is to be realized, new, often unfamiliar ways of working and thinking will be required too.

A large European insurance group has developed a statistical model to predict and reduce customer churn. By analyzing variables such as the price paid for a policy, the percentage price increase year on year, and how long the policy has been held, it can identify those customers most likely to leave. It then reverse-engineers competitors' prices and optimizes its own prices accordingly. In addition, having identified those clients most at risk of leaving, it is able to concentrate agents' efforts on retaining them. As a result, renewal rates have increased by up to 7 percentage points and bottom-line profits by as much as 5 percent.

Capturing the technology's potential hinges on the ability to administer and analyze data (whether from internal or external sources) in a consistent manner across all channels. Both will require significant changes to existing IT architectures. These include establishing a master data-management system that gives a consolidated view of all data, in particular customer and product data, and the deployment of big data and advanced analytics systems that integrate data sources and provide platforms to generate

We see four key components of a strategy to modernize IT for the digital age.

Systematic building of new capabilities

With most incumbent insurers, there is a gap between the capabilities they have and the capabilities they need. A clear plan is required to bridge the gap, based on a grasp of the present state and the target state over the next three to five years. Areas must be prioritized and initiatives agreed.

Beyond exceptional general capabilities such as fast decision-making, the ability to learn and react, and strong central steering, the essential qualities needed to keep pace with digital leaders are rigorous discipline in IT execution, world-class agile IT engineering, a scalable cloud infrastructure, and a single, open, and flexible application architecture.

might have to be augmented by searches among developer communities, via participation in technology conferences and other events, or by establishing partnerships with software providers. In turn, developers will expect prospective employers to check their contributions to open code communities, not rely on interviews.

A differentiated approach to IT development

Digital attackers can build their IT capabilities from scratch, aiming precisely at specific emerging opportunities. Incumbents have the advantage of large policyholder books of business, but are burdened by system environments which were designed for traditional operating models and are challenging to adapt to contemporary digital preferences. Marcus Ryu, the CEO of Guidewire, a US software provider for P&C insurers, describes the situation as “strategic lock-in.”

That said, these legacy assets still have considerable value, which needs to be maximized. Often, the solution is a bimodal approach comprising “digital IT” and “foundational IT.” In respect of the first, the innovative features and products demanded by customers are released quickly by replacing the waterfall method of software development—whereby software is developed, tested, and deployed in a strict sequence—with agile methods whereby teams work in sprints to meet weekly development targets. Features are tested with customers and refined and refreshed in rapid iterations. Meanwhile, the development and

management of foundational IT—the parts that support business capabilities requiring less agility and speed—can be approached in a traditional, more structured manner to ensure the stability and reliability of systems, and cost efficiency. Our experience is that the division of digital IT and foundational IT should be made according to business capabilities and where speed will differentiate a company. Hence customer portals, social management, and customer relationship management typically belong to digital IT, while risk management, fraud management, and accounting belong to foundational IT with longer release cycles.

Some believe the bimodal approach has drawbacks, arguing that agile ways of working should be introduced as broadly as possible. Our view is that insurers should indeed switch to an agile development approach wherever they can, but the fact remains that releases in foundational IT domains do not need to be as frequent as those in digital IT domains. A bimodal approach is therefore an effective way to ensure that investments to accelerate IT delivery are directed where they will be most valuable.

That said, establishing a bimodal approach requires time, careful consideration, and commitment because it involves radically evolving IT, an agile collaboration culture (see below), modern engineering methods such as DevOps, increased use of services and microservices, improvements to the organizational set-up, and the honing of talent.

“Moving toward an agile methodology ... means development times are shorter. And it includes—this is the important part—getting the business people involved in the development of any new solution.”

—Tom King, senior director at US software company Pegasystems

Modernized core platforms

For many incumbent insurers, there is no getting away from the need to overhaul their core platforms. Written using decades-old, common business-oriented language (COBOL) or PL/I, these monolithic, batch-processing systems usually cannot deliver the speed, agility, and flexibility required by a digital business. They can present difficulties in terms of operations and scalability, and are too costly.

These insurers are left with three choices: build a new core insurance platform themselves, refactor the existing one

“Think of all the informational assets you have as an insurer ... if that’s all hard coded, and if it takes massive capital expense and effort in order to make even superficial changes to that environment, then you are, in a sense, suffering from strategic lock in.”

—Marcus Ryu, CEO of Guidewire

Fresh talent will be required to strengthen existing capabilities and build new ones. Traditional methods of recruiting via agencies, job listings, or internal referrals

(by modernizing code or streamlining the system architecture, for example), or replace it with standard software. The choice will depend on a range of considerations, including the state of the legacy systems, the level of ambition, and the level of resources. Those wanting to lead in processes and product innovation, and able to invest accordingly, might choose a proprietary platform. This was the choice made by a global insurance group seeking a platform with a common core and country- and entity-specific customizations in order to promote common practices globally while maintaining local flexibility. Insurers with relatively stable and modern systems that need to be able to support digital technology might choose to refactor. And those aiming for lean, standardized processes and products might find standard software to be the right solution. A Benelux insurer that found itself with a very expensive legacy system unsuited to digital modification, and wishing to institute lean processes, chose standard software as its best option.

A collaborative IT operating model

The digital operating model is defined by agile ways of working and by collaboration—internally across the business and externally with partners and vendors.

Internally, a digital-ready operating model is one in which IT works closely with all other parts of the business. Yet most insurers still organize themselves around functions such as risk, underwriting, claims, marketing, and sales. While these

functions have deep expertise, they are too rigid to respond to rapid change. Moreover, in a functional set-up, no one really understands the entire customer experience.

For many incumbent insurers, there is no getting away from the need to overhaul their core platforms.

Cross-functional teams organized around products solve this problem. Their combined expertise means they are able to deliver the products and services customers want and at the pace required in a digital world, particularly if team members are located in the same place (often digital “garages” or “factories”), they are empowered to make their own decisions, and the entire team (not just the IT people) adopts an agile approach to its work. Flexible funding—replacing the conventional one-off, annual budgeting process—ensures that investment is directed incrementally at projects that show most promise.

Externally, IT must facilitate collaboration with new partners—auto manufacturers, telecom companies, sensor and chip manufacturers, or digital platform giants such as Uber—by enabling the integration of systems and processes. Yet some re-evaluation of existing relationships

might be needed too. If agile models are to succeed, vendors might need to work differently, in closer cooperation with insurers. Insurers are therefore likely to have to consolidate the number of vendors with which they work. In addition, contracts that fix prices, scope, and budget might need to be replaced with contracts that reward success.

This type of operating model requires cultural change within IT and the businesses. Leaders in both need to help build an understanding across the organization of how IT can define a product’s value to customers, and how agile ways of working can deliver that value. This is particularly true for intangible insurance products.

Working in cross-functional teams will help alter thinking. But for business leaders to contribute to the collaborative environment, and understand the constraints and potential of IT, some formal training is often required. One large European insurance group has set up an IT literacy program to educate and update business line managers, while all newly appointed top business managers must take a three-day training module to help them understand and capture IT’s strategic value.



Building next-generation IT capabilities is no small undertaking. The process touches all dimensions of a company’s IT—architecture, application landscape, infrastructure, supporting processes, and operating model—as well as skills

and culture. While near-term benefits can be captured within six to 12 months, a wholesale upgrade to the next generation of IT capabilities can take as long as five years and will require a company’s full commitment and significant investment. The effort will bring a reward beyond lower overall unit costs: an IT function equipped to play the strategic role crucial to an insurer’s success in a digital world. □

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The promise of blockchain

Blockchain has huge potential to enhance insurers' business model, but is also being used by digital start-ups to attack it. Hence the imperative for incumbents to start exploring this nascent technology.

Many have likened the revolutionary possibilities of blockchain technology to those of the internet, such is its perceived capacity to transform the ways in which people and businesses cooperate.

Investors put more than
\$800M
 into blockchain-related start-ups between 2014 and 2015.

Sensing this, investors put more than \$800 million into blockchain-related start-ups between 2014 and 2015. Perhaps even more indicative of its disruptive potential, in late 2016 four European insurance giants, Aegon, Allianz, Munich Re, and Swiss Re, set up a combined pilot project known as B3i to explore the nascent technology.¹

The insurance industry in general, however, lags behind other industries, such as banking, in terms of the interest it has so far expressed. It will have to catch

¹ See also <http://www.mckinsey.com/industries/financial-services/our-insights/beyond-the-hype-blockchains-in-capital-markets>.

up, because as well as demonstrating potential to enhance insurers' current business model, blockchain is being used by digital start-ups to attack it.

Blockchain is a shared, public ledger of records or transactions that is open to inspection by every participant but not subject to any form of central control. The Economist newspaper has described it as a machine for building trust.² In the case of the virtual currency Bitcoin, arguably its most famous application, it tracks transactions and facilitates money transfer, while preventing double-spending, without the need for a bank. But blockchain lends itself to many other systems for keeping static records (of land titles, for example), for registering dynamically the exchange of assets, and for making payments such as ticket purchases. It is also a platform for "smart contracts"—computer programs that automatically initiate certain actions when predefined conditions are met.

How it works

While blockchain technology can be used in different ways, a blockchain solution generally builds on four features.

Decentralized validation. When a transaction such as a ticket sale occurs, new data blocks describing it are added to a chain only after consensus is reached among the relevant participants on the validity of the action—for example, when

² <http://www.economist.com/news/leaders/21677198-technology-behind-bitcoin-could-transform-how-economy-works-trust-machine>.

the seller is validated as the owner of a ticket that is sold.

Redundancy. The blockchain is continuously replicated on all or at least a group of nodes in a network. As a result, no single point of failure exists.

Immutable storage. Blockchain confounds hackers because to tamper

smart contract, or registered data in the blockchain.

Opportunities for insurers

With these characteristics, blockchain can help address some of the key challenges that many incumbent insurers face in a digital age, including the need to understand and meet customer needs more fully and to cut costs by making operations more efficient. There follow some examples of the way blockchain might be applied.

Meeting customer needs

In a digital world, winning companies meet exacting consumer needs—for tailored products, simplicity, and transparency, for example. Insurers traditionally have had little opportunity to understand such needs, interaction with customers being limited to buying a policy or making a claim, processes that might anyway be delegated to brokers and agents. This explains both the threat and often the success of digital attackers that make customer satisfaction their priority.

Blockchain can help insurers in this both by sparing clients the frustration of repeatedly having to provide data for verification purposes—a copy of a passport, for example—and by reducing privacy concerns. No longer will it be possible to pass that data on to a third party without the client's permission.

For instance, UK start-up Tradle is working on a blockchain solution that will enable financial institutions to conduct the know-your-customer (KYC) checks

required by regulators to prevent money laundering—a process that is otherwise expensive and time-consuming for institutions and annoying for clients if they have to offer up the same information about their identity and source of wealth to different institutions. Once KYC data is verified, the customer can use a private key to grant companies in the network access to the encrypted data whenever it is needed.

In addition, blockchain provides greater transparency and hence perceived fairness in respect of tariffs and claims handling. Another UK start-up, InsurETH, is working on a peer-to-peer flight

process of verifying the delay can be a lot of effort for relatively little reward.)

Similarly, smart contracts could trigger the claims and payments processes for damage caused in the home or to a car and detected and verified by sensors linked to the Internet of Things, doing away with quibbling about the causes of damage and phone calls to chase the progress of a claim.

Fraud prevention

An estimated 5 to 10 percent of all insurance claims are fraudulent, costing US non-health insurers more than \$40 billion a year according to the FBI. By serving as a cross-industry, distributed registry of external and customer data, blockchain can be used to identify fraud.

It can, for example, expose falsified damage or theft reports by validating the authenticity, ownership, and provenance of goods, authenticating documents such as medical reports, checking police theft reports and claims histories, and verifying identities.

It is clear that extensive cooperation between insurers, manufacturers, customers, and other parties will be needed to unlock Blockchain's full potential. Blockverify, a UK start-up, is building a system that will enable users to check for fraudulent transactions, counterfeiting, or theft relating to goods such as personal electronics, pharmaceuticals, and luxury items. It works by labeling products and then storing their history and supply chain

In a digital world, winning companies meet exacting consumer needs—for tailored products, simplicity, and transparency, for example.

with data they would have to alter not just one block in a chain but also all successive blocks and the majority of their replications. In addition, data is registered in the blockchain with a digital fingerprint that includes a date and time stamp; any attempt to change data would be apparent because the new digital fingerprint would not match the old one.

Encryption. Digital signatures based on pairs of cryptographic private and public keys enable network participants to authenticate which participant owns an asset, initiated a transaction, signed a

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insurance policy built on blockchain with smart contracts. The contracts initiate payouts to the holders of insured tickets when cancellations or delays are reported from verified flight data sources, making the claims and payments process quick and easy. (Although many travelers could claim compensation for flight delays under their usual insurance, few do so as the

activity in a blockchain. Everledger, also based in the United Kingdom, has devised a similar application, used to verify diamonds and transactions relating to them, and targeted at helping insurers, law enforcers, and those in the diamond trade to detect fraud.

Efficiency

Underlying many of these use cases is another clear opportunity for insurers—to reduce operational and administrative costs. Automated verification of policyholders' identity and contract validity, the auditable registration of claims and data from third parties such as doctors, the underwriting of smart contracts, and the automation of claims procedures all reduce costs while speeding up processes.

The lower handling costs of a smart contract could feasibly help open up new growth markets. In emerging markets, blockchain and smart contracts could be used to offer micro-insurance to farmers, for example, triggering payments to them when drought conditions are verified by a reliable meteorological source. And insurers could potentially save the many millions currently spent chasing down fraud.

The way ahead

Blockchain clearly facilitates innovative business models and promises cost advantages to insurance companies and their customers. Various barriers impede its widespread adoption, however.

Scalability is the first challenge. The technology's consensus-based

validation mechanism, its continuous replication, and the ever-growing amount of stored data means that the larger the blockchain grows, the greater become the requirements for storage, bandwidth, and computational power. That leads to a risk of centralization if the blockchain becomes so large that only a few nodes are able to process a block.

The lower handling costs of a smart contract could feasibly help open up new growth markets.

Second, recent incidents have shown that for all blockchain's security attributes, it is not impregnable. For example, hackers stole \$65 million from Bitfinex, a cryptocurrency exchange. Such threats are not as well understood as those related to conventional database architectures.

Standardization is a third challenge. To realize sustainable benefits from an open or partially shared and distributed system, some standardization will be necessary. The current absence of industry standards—which the B3i project is seeking to address—reflects the newness of the technology. A distributed system that sometimes depends on collaboration between competitors, suppliers, and others will take time to evolve. So will the resolution of legal and regulatory issues. Thus there is a high risk of initiating

inefficient solutions, and investment decisions will need to be taken carefully.

But the obstacles should not deter insurers given that new companies are rapidly embracing the technology and its cost advantages. At their core, insurance companies collect premiums, pool the money, and reassign it to those with a valid claim. Blockchain means all this can now be automated and today's insurers potentially disintermediated—by the likes of InsurETH, for example, or Dynamis, a start-up that is using smart contracts to offer peer-to-peer supplementary unemployment insurance. In the latter case, it is other policyholders on the network who validate both the application for insurance and the claim, using social media.

These examples pose no immediate great threat to incumbents' business. But they should alert incumbents to blockchain's disruptive potential, and to the need for them to help shape the blockchain insurance ecosystem. The starting point is to develop a thorough understanding of how the technology can address customers' needs as well as their own, and to identify potential applications. That will mean working with consortia, technology experts and start-ups, regulators, and other market participants to address the challenges. Incumbents can learn from the start-ups and might consider partnering with or acquiring companies that are entering the insurance market with blockchain-based products and processes.

For the time being, it is important to bear in mind what blockchain can and cannot facilitate. If a limited number of parties are

involved in a transaction then insurers' current transaction models are likely to suffice. Moreover, it is unlikely to be beneficial if no intermediary is needed, or a trusted one already exists. But in transactions involving multiple parties, perhaps with competing incentives, where an iron-clad record of data is needed, and no central trusted authority is available or needed—then blockchain technology holds out huge promise, which insurers would be wise to explore. □

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The advance of analytics

Harnessing the potential of burgeoning data and computer power to add value must become ingrained in insurers' every activity.

The use of data and analytics to underwrite risk is nothing new for insurance carriers. Yet in a digital world, it is revolutionizing their business. An industry in which 80 percent of all auto insurance claims are adjudicated automatically, and 80 percent of all life insurance policies are issued straight through without requiring any of the usual health checks, is no distant pipe dream. Neither is one in which the cost of acquiring a customer falls by as much as 70 percent because of precision marketing and personalization. Such is the power of analytics.

The convergence of several technology trends is behind this revolution. The volume of data continues to double every three years as information pours in from digital platforms, wireless sensors, virtual reality applications, and billions of mobile phones. Data storage capacity has increased, while its cost has plummeted. And data scientists now have unprecedented computing power at their disposal, giving birth to ever more sophisticated algorithms. As a result machine and deep learning are on the horizon (see box, "Analyzing analytics"). "We're moving from computer science, where computer coders write very explicit, line-by-line instructions, toward starting to train machines to look for information that could be valuable," says Scott Simony, head of industry at Google.

Yet data and technology alone do not deliver value, as too many companies have discovered to their cost. While some are seeing good results, others admit they

have seen little effect to date from their investments in analytics.¹

We only have to glance at other industries to understand how powerful new competitors with large customer bases can rapidly invade other sectors.

It is important that this changes quickly, as those slow to adopt the technology at scale will surely struggle to compete. They will struggle against other insurers that use analytics to improve their core business by streamlining internal processes, raising revenue and cutting costs in the process. And they will struggle in the longer term as data and its analysis begin to break down business models and industry boundaries. In personal auto insurance, we can already see how data from sensors fitted to vehicles will put premiums under pressure as driving becomes safer. And we only have to glance at other industries to understand how, in a world in which data and analytics are king, powerful new competitors with large customer bases for

¹ See "The age of analytics: Competing in a data-driven world," McKinsey.com.

Exhibit

Analytics at work in claims management

1 CASE EVALUATION

OVERVIEW

- Advanced analytics enables carriers to use historical data to create robust data sets
- The data sets identify patterns in case characteristics (accident details, vehicle type, presence of bodily injury) that offer predictive markers that can be used to identify similar cases
- Once these markers have been defined, carriers can apply them to incoming cases to guide handling

ANALYTICS USE CASES

- Fraud prediction
- Total loss prediction
- Litigation prediction
- Severity prediction for BI cases

MAIN IMPACT

- Claims costs
- Handling costs
- Claims costs
- Claims costs

2 CASE SEGMENTATION

OVERVIEW

Using the insights from case evaluation, carriers can determine a subset of cases ideal for straight-through processing vs. those that require specialized processing. Those requiring specialized attention are assigned to claims handlers (for example, by complexity)

ANALYTICS USE CASES

- Identification of straight-through processing cases
- Assignment of cases to handler units

MAIN IMPACT

- Handling costs
- Handling costs

3 CASE MANAGEMENT

OVERVIEW

The outputs of case evaluation also enable automation of case steering, so that carriers can direct customers to preferred garage networks to repair their vehicle, for example, or use an app to make self-service claims

ANALYTICS USE CASES

- Prediction of success in case steering
- Medical treatment
- Reserve prediction

MAIN IMPACT

- Claims costs
- Claims costs
- Claims costs

their core businesses can rapidly invade other sectors. Chinese e-commerce giant Alibaba also owns one of the world's largest technology finance companies, which include among its services insurance.

Here then, is how companies can move quickly to build their analytics muscle across the organization, avoiding common problems and ensuring their investments translate into business value. There are four phases.

Phase one: Building insights

The starting point is to be clear about how analytics can deliver insights and add value, and choose the use cases that will demonstrate this. Too often, companies give scant thought to the business problem they are trying to solve, instead getting carried away with refining data, gleaning perfect insights, or investing heavily in technology infrastructure. The exhibit shows how analytics can be put to work in claims management.

It is also important to understand what analytics can and cannot do. It cannot, for example, predict outcomes with pinpoint accuracy, particularly in low-frequency, high-severity, or shock-prone lines of business. For instance, the market for directors and officers liability insurance endured waves of litigation over the past decade—and subsequent spikes in claims—resulting from events such as the financial crisis and new regulations governing options backdating. It would have been difficult to predict any of these events with analytics.

Some life insurers are using social network and geographical data to reduce fraud by up to 25 percent.

But their use can significantly improve predictive capabilities, unearthing insights upon which carriers can act. Some auto insurers now use credit scores to assess risk more accurately, analytics having revealed that people who pay their bills on time tend to be safer drivers. Some life insurers are using social network and geographical data to reduce fraud by up to 25 percent. And some companies are using data on insurance agents—their behavior, previous sales, regional location, and training undertaken—to predict how likely each one is to sell multiple products, and which specific products they would be most successful at selling, leading to a 20 to 25 percent increase in sales. As machine learning technology develops, it will be applied not only to predicting events and forecasting outcomes, but also to classification (including identifying images or making associations between data) and generation (from interpolating missing data to generating the next frame in a video sequence, for example).

Mining internal and external data

In some cases, organizations struggle to develop convincing use cases because data quality is poor. Many cannot yet

master their internal data, which remains disaggregated, unstructured, and generally underused, requiring substantial effort to be brought into working condition.

Leading organizations find ways to make sure the businesses work alongside the analytics function, and involve top management.

Accomplishing this should perhaps be a priority before a company begins mining external data. An additional challenge is to collect, integrate, and analyze unstructured data such as web content, network data, images, text, and audio and video recordings.

Many incumbents struggle with switching from legacy data systems to a nimbler and more flexible architecture to store and harness big data (whether from internal or external sources). But capturing the potential of analytics hinges on it. At the outset, companies should bear in mind the business case they are making, and that the very latest technology and significant upfront investment are not always needed. Before long, though,

changes to IT architectures are likely to be required. These include establishing a master data-management system that gives a consolidated view of all data, in particular customer and product data, and the deployment of big data and analytics systems that integrate data sources and provide platforms to generate value-creating insights via predictive models or machine learning.

Phase 2: Capturing value

Here the focus shifts from proof of concept to adoption, the goal being for the businesses to lead demand for analytics. That is unlikely to happen unless the front line is involved from the outset and performance measurements are chosen carefully.

Involving the front line

When companies falter in their use of analytics it is often because the old way of working still prevails: that is, build a model (often based on unclear assumptions about the variables that have most predictive impact on the outcome) and roll it out, regardless of whether people on the front line understand precisely how to apply it. They might not know, for example, whether the model's recommendation is binding or if there is flexibility to deviate from it. Not surprisingly, efforts at adoption can meet resistance.

Instead, front-line employees need to be involved at each stage of the development process, from establishing the business case to deciding what data to draw upon,

Analyzing analytics

Analytics has emerged from four trends. First is the exponential growth in data that a digital world enables, including structured data that is machine readable and easily loaded into databases and queried, and unstructured data such as video, text, social media, and employee emails that is harder to collect, analyze, and process. In the past 18 months alone, more data has been generated globally than in the entire previous history of mankind. In the next five years, the amount generated will be three times more than has been cumulatively generated to date.

The second trend relates to revolutionary advances in computer technology and to analytics techniques, such as machine learning, that rely on automated, computer program-driven pattern recognition. These techniques are far more predictive than generalized linear modeling. With machine learning, algorithms “learn” from data and adapt to new circumstances without being explicitly reprogrammed. The concept is to give the algorithm “experiences” (training data) and a generalized strategy for learning, then let the algorithm identify patterns, associations, and insights from the data—in short, to train the system rather than program it.

Deep learning, a frontier area of research within machine learning, uses neural networks with many layers (hence the label “deep”) to push the boundaries of machine capabilities. Data scientists working in this field have recently made breakthroughs that enable machines to recognize objects and faces, to beat humans in challenging games such as chess and Go, and even to generate natural language. Digital giants such as Google, Facebook, Intel, and Baidu, as well as industrial companies such as GE, are leading the way in these innovations, seeing machine learning as fundamental to their core business and strategy.

The third trend is the shift from batch processing to real-time processing, monitoring, and visualization of data feeds. This trend will continue to change the behavior of the insured and affect the operations of many core insurance functions such as underwriting and pricing, claims, billing, and customer relationship management.

Finally, flowing from all this, is a complex ecosystem of new analytics vendors and solutions that enable carriers to combine data sources, external insights, and advanced modeling techniques in order to glean insights that were not possible before.

how to integrate the output into working patterns, and what new skills might be needed. One large insurance carrier saw a 30 percent increase in adoption rates when front-line employees joined a cross-functional team engaged in defining use cases. They participated in workshops to define hypotheses on the variables with most predictive power, worked on understanding and refining modeling output, and finally integrated the output with the business process.

The integration element is particularly important and often particularly challenging, given that it involves a significant shift of mind-set away from the old method of working. How will data that reveals insights be presented? It is no point sending quantities of it to the person required to use it. Carriers will need to be creative so that data is in a form that is self-explanatory and prescriptive. It is also important that analytics becomes part of the work process, rather than being an additional, separate task that busy people are unlikely to complete. Better that it be integrated directly into core tools being used for, say, customer relationship management and pricing.

Performance management

Early on, organizations are understandably keen to see a return on their investments. But too much focus on certain metrics can impede progress. It is hard, for example, to isolate the financial impact of an analytics initiative from that of other business initiatives such as efforts to improve customer retention based on digital marketing or strategic

projects—and trying to do so can become an exercise in false precision. Diligently tracking the impact of use cases in terms of their adoption and satisfaction might prove a better measure of early progress, as well as an indication of when version 2.0 or 3.0 is needed. Comparing outcomes for those who use the new models and those who do not is also a helpful gauge.

The end-state is one in which analytics shifts from being regarded as a business aid to being seen as a capability that sits at the core of the way business is conducted.

Phase 3: Achieving scale

The application of analytics often begins within the pricing and underwriting functions. Employees here are relatively accustomed to modeling and data-driven analyses, and the potential to improve previous practices should be clear—be it by finding new variables, exploring new modeling techniques, or further automating processes. Eventually, however, it needs to be deployed in all businesses and functions. To reach that point efficiently, leading organizations use heat maps that indicate where to

prioritize efforts. They also find ways to make sure the businesses work alongside the analytics function, and involve top management.

Prioritization

The heat map should be drawn up on the basis of three dimensions: the value that analytics can deliver, their feasibility (drawing on a large number of different systems to collect data will make it harder to capture value from a use case, for example), and strategic relevance. Importantly, the map needs to be updated at least once a year to align with changing strategic priorities and feasibility based on the technology and data lessons learned in the previous year.

Balancing business engagement with a strong analytics function

As carriers master the execution of use cases, so a permanent center of excellence (CoE) needs to take shape to support the businesses. Carriers can wrestle with how best to position the CoE. Should it be autonomous with its own reporting and profit-and-loss statements? Or should it function as an on-demand resource? The advantage of the former is that the CoE is likely to be more proactive in developing analytics initiatives across the organization and more accountable for their success. The latter has the advantage of more closely aligning the CoE with the businesses' agenda.

The best approach probably lies somewhere between the two, making sure there is strong business and analytics leadership. Whatever structure chosen,

companies need a CoE with teeth to come up with ideas and recommendations, as well as businesses and domains that shape and approve the CoE's agenda and the costs allocated to it.

Direct involvement of top management

As the CoE scales up, senior management needs to make clear that analytics is a corporate priority, paying close attention to the portfolio of initiatives and understanding how it will achieve impact. To promote take-up, executives can encourage line leaders to contribute to the pipeline of analytics ideas as part of the annual planning process. And, while understanding that returns on investment might not be obvious within the first few quarters, executives can highlight

An industry in which 80% of all auto insurance claims are adjudicated automatically, and 80% of all life insurance policies are issued straight through without requiring any of the usual health checks, is no distant pipe dream.

quick wins and celebrate successes that will prove the concept and maintain momentum.

Phase 4: The analytics-driven organization

The end-state is one in which analytics shifts from being regarded as a business aid to being seen as a capability that sits at the core of the way business is conducted. Indeed, it will become so ingrained in daily work practices that the CoE is made redundant. Various functions—claims, distribution, underwriting—might still exist, since the practical activities and the skills required for them differ. But the core decision-making and the analytics engine that supports decisions are likely to converge at a single point. When that point is reached, all business and strategy decisions are made with data and analytics at their center.

At this stage it will make no sense to measure success by returns on investment. The business metrics themselves become the markers of success, be it price adequacy or loss, expense and combined ratios, or the quality of new-business growth. In addition, analytics will firmly shape the organization’s talent strategy, becoming an integral part of multiple roles.



While most carriers have taken up analytics, they have barely begun to tap its potential. Yet the intensity of competition

and the use cases emerging dictate that gradual improvement is no longer an option. Analytics will soon become a core corporate capability, and those carriers that leap ahead and bring it to insurance are likely to capture an unrivaled competitive advantage. □

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The value of robotic process automation: An interview with Professor Leslie Willcocks

The professor of technology, work, and globalization at the London School of Economics’ Department of Management talks about robotic process automation—its impact on work, the strategic and financial benefits, and how to capture them.

McKinsey: Can you start by defining robotic process automation (RPA)?

Leslie Willcocks: RPA takes the robot out of the human. The average knowledge worker employed on a back office process has a lot of repetitive, routine tasks that are dreary and uninteresting. RPA is a type of software that mimics the activity of a human being in carrying out a task within a process. It can do repetitive stuff more quickly, accurately, and tirelessly than humans, freeing them to do other tasks requiring human strengths such as emotional intelligence, reasoning, judgement, and interaction with the customer.

There are four streams of RPA. The first is a highly customized software that will work only with certain types of process in, say, accounting and finance. The more general streams I describe in terms of a three-lane motorway. The slow lane is what we call screen scraping or web scraping. A user might be collecting data, synthesizing it, and putting it into some sort of document on a desktop. You automate as much of that as possible. The second lane in terms of power is a self-development kit where a template is provided and specialist programmers design the robot. That's usually customized for a specific organization. The fast lane is enterprise/enterprise-safe software that can be scaled and is reusable.

You can multi-skill each piece of software. It's lightweight in the sense that you don't need a lot of IT involvement to get it up and running. Business operations people can learn quite

quickly how to configure and apply the robots. It's lightweight also in that it only addresses the presentation layer of information systems. It doesn't have to address the business logic of the underlying system or the data access layer.

One major benefit of RPA is “a return on investment that varies between 30 and as much as 200 percent in the first year.”

McKinsey: How is RPA different from cognitive intelligence?

Leslie Willcocks: RPA deals with simpler types of task. It takes away mainly physical tasks that don't need knowledge, understanding, or insight—the tasks that can be done by codifying rules and instructing the computer or the software to act. With cognitive automation, you impinge upon the knowledge base that a human being has and other human attributes beyond the physical ability to do something. Cognitive automation can deal with natural language, reasoning, judgement, with establishing context, possibly with establishing the meaning of things and providing insights. So there is a big difference between the two.

In addition, whereas RPA is pretty ripe as a technology, cognitive automation isn't.

I've not seen a wave of powerful cognitive automation tools appear in the market and not many companies are using them yet.

McKinsey: What are the business benefits of RPA?

Leslie Willcocks: The major benefit we found in the 16 case studies we undertook is a return on investment that varies between 30 and as much as 200 percent in the first year. But it's wrong to look just at the short-term financial gains—particularly if those are simply a result of labor savings. That approach does not do justice to the power of the software because there are multiple business benefits.

For example, companies in highly regulated industries such as insurance and banking are finding that automation is a cheap and fast way of applying superior capability to the problem of compliance. You also get better customer service because you've got more power in the process. A company that receives lots of customer enquiries, for example, can free staff to deal with the more complex questions.

There are benefits for employees, too. In every case we looked at, people welcomed the technology because they hated the tasks that the machines now do and it relieved them of the rising pressure of work. Every organization we have studied reports that it is dealing with bigger workloads. I think there will be an exponential amount of work to match the exponential increase in data—50 percent more each year. There is also a massive increase in audit regulation and bureaucracy. We need automation

just to relieve the stress that creates in organizations. One online retailer measures the success of RPA in terms of the number of hours given back to the business. So it's not just the shareholders, the senior managers, and the customers who benefit but also employees.

McKinsey: Can you describe a process where you have seen RPA in action?

To get started with RPA, “you have to pick the right process. It has to be stable, mature, optimized, rules-based, repetitive, and usually high-volume.”

Leslie Willcocks: In an insurer we studied, there was a particular process where it used to take two days to handle 500 premium advice notes. It now takes 30 minutes. It worked like this: a range of brokers would write business for clients, and there was a central repository into which the business written had to go, and a process that someone had to manage to get the premium advice note from the broker into the repository. A number of operations had to occur for that advice note to be fully populated by all the data, and the process operator might find that the data had not been completely filled out, perhaps because the advice note

wasn't structured very well. So the data had to be structured to standardize it so that it could be a common document like all the other advice notes. And if any data was missing, that person might have had to go back to the broker, or add things from the systems of record in the back office. Then, once the note was complete and signed off by the process operator, it went into the repository.

gradually you educate and configure the RPA to do more and more work. Eventually it can do 90 or 95 percent of the work and very few exceptions have to be dealt with by a human.

McKinsey: What are the most important considerations for those wishing to adopt RPA?

Leslie Willcocks: The most important consideration is strategy. You can use automation tactically for cost savings. But if you use RPA as a broader strategic tool, you get a lot more out of it. That's number one. Number two concerns the launch. You need to get the C-suite involved and appoint a really good project champion, and you have to pick the right process. It has to be stable, mature, optimized, rules-based, repetitive, and usually high-volume. Start with a controlled experiment on a visible bottleneck or pain point.

The third consideration is change management—persuading the organization to change and adopt automation. It is a key issue from the outset. And the fourth is building a mature enterprise capability for RPA. Long-term users have built centers of excellence over time, usually within business operations, and developed skills and capabilities within that center. They have people who assess the feasibility of a proposal from a business unit. They have people who configure a robot, install it, and develop it, and controllers who switch it on and off, and plan its work and how it fits with human work. They have some sort of continuous improvement capability and relationships with IT, governance, and

security. Organizations signing up to RPA now should probably think about building a center of excellence immediately.

McKinsey: How do companies choose whether to implement an IT solution or RPA? And how do the two departments work together?

Leslie Willcocks: When organizations consider proof of concept for RPA, they look at the business case and compare it to an IT solution. Often that's pretty unflattering for IT. In one organization we looked at, the return on investment for RPA was about 200 percent in the first year and they could implement it within three months. The IT solution did the same thing but with a three-year payback period and it was going to take nine months to implement.

tool is usable, cheap, and doesn't require much IT skill to implement it's a no-brainer for the average operator in a business unit. The reason IT gets worried is that they know the disruptive, potentially disastrous effects of people playing around with IT in the organization and not understanding how it's going to upset infrastructure, governance, security, and all the important touchpoints that IT is held responsible for. So it's not surprising to find IT functions in denial about RPA and what it can do. It's crucial therefore that IT is brought on board early.

McKinsey: What do you think will be the long-term impact of robotic process automation?

Leslie Willcocks: In the longer term, RPA means people will have more interesting work. For 130 years we've been making jobs uninteresting and deskilled. The evidence is that it's not whole jobs that will be lost but parts of jobs, and you can reassemble work into different types of job. It will be disruptive but organizations should be able to absorb that level of change. The relationship between technology and people has to change in the future for the better and I think RPA is one of the great tools to enable that change. □

Professor Leslie Willcocks was speaking to **Xavier Lhuer**, an associate partner in McKinsey's London office.

“In an insurer we studied, there was a particular process where it used to take two days to handle 500 premium advice notes. It now takes 30 minutes.”

Now a lot of that sort of work can be automated. But some of it requires human intervention, human reasoning, judgement. So an RPA engineer would look at that type of process and say, “Which bit can we automate?” The answer is not everything—it can't structure the data. There may at some stage be cognitive automation technology that could structure the data but RPA can't, so the human being has to structure the data at the front end and create a pro forma ideal advice note. Clearly, the RPA can't deal with exceptions either. The engineer has to intervene and look at the exceptions and create a rule to deal with them, so that

“In the longer term, RPA means people will have more interesting work. For 130 years we've been making jobs uninteresting and deskilled.”

In addition, many business operations find going through IT frustrating because it's so busy. Often the business wants something relatively small, but the IT function has bigger fish to fry and the business has to go to the back of the queue. So if an RPA



Building momentum for cultural change

Being told to abandon old ways of thinking and working and embrace without delay a new, and seemingly riskier, digital culture can be unnerving for insurance companies. But there are certain actions insurers can take to kick-start change while minimizing the risks—and they do not have to alter everything at the same pace.

Introduction

Few CEOs need convincing that a digitally enabled transformation of their companies is the path to lower costs, growth, and perhaps even survival as technology and changing customer expectations usher in new competitors, new value drivers, and new business models. Nor do they need telling that at the heart of a digital transformation lies a cultural one, equipping them to support new ways of thinking and working. Rare is the CEO who does not have cultural change high on his or her agenda. But making that change can seem a daunting task. Indeed, McKinsey research has shown that 46 percent of financial services executives feel cultural or behavioral change is the biggest challenge they face in pursuing their digital strategies.

Perhaps not surprisingly then, insurers scored poorly when we measured their cultural preparedness for a digital world (see “Measuring your digital maturity”).

Cultural change is of course hard for any long-established organization. And so it is with insurers, the largest of which often have a century-old record of creating value for policyholders and shareholders.¹ Unlike digital newcomers to the industry that are building up a new business, incumbents suspect change might undermine the health of their existing one.

But beyond a general reluctance to tamper with approaches that have served

them well, there are more specific reasons why cultural change can be particularly hard for insurers to contemplate. To begin with, the industry is highly regulated, making insurers extremely cautious about changing the way they work. There are also certain aspects of a digital culture that seem designed to undermine the very things that have made insurance companies so successful in the past.

“The companies that will stand out are the ones that are going to find ways to move a bit faster, at the pace of the people they’re insuring.”

— Scott Simony, head of industry, Google

For example, a digital culture demands an unswerving focus on customer needs. And while there are exceptions, most insurers have built their success on the products they offer and their underwriting skills, and by focusing on agent and broker relationships—not customers. A change of focus will therefore be hard not only culturally, but also operationally: administrative systems that are built

¹ Average age of the top ten P&C and top ten life insurance companies in the United States based on 2015 premiums, SNL Financial.

around policies rather than customers will need to be reconfigured, for instance. And disturbing the long-established intermediated distribution system carries risks when 84 percent of sales in US P&C and 90 percent of US life policies go through agents or brokers.^{2,3}

experimentation put their value and brands at risk?

Of course, fear of change is no reason for maintaining the status quo; history is full of the corpses of companies that failed to keep ahead of industry disruption. Moreover, building a digital culture does not mean destroying the skills and values that have sustained the company. Rather, it is about renewing that heritage with new ways of thinking and working.

In addition, not everything has to alter at the same pace. It is important to distinguish between those segments of the industry that are being transformed quickly due to digital technology, where cultural adjustment is thus urgent, and those where change is slower. With these parameters drawn, cultural shifts become a less unnerving prospect. We do not pretend there is an obstacle-free method to instilling new ways of working and thinking, and a digital culture will need to take hold across the entire organization before long. Nevertheless, certain actions can kick-start change, and build support and momentum for more.

Where to start?

Wholesale, rapid change is neither necessary nor possible. Culture, by definition, takes time to root. To know where to concentrate their efforts, insurers should first consider how quickly digital technology will affect different business lines, then different functions within those businesses. With this clear, they need to improve those elements of a digital culture where they are weakest.

~25%
of people who shop for auto insurance in the US buy online directly from the carrier.

Another digital mantra is experimentation with new products and services—requiring an ability to test and learn quickly and a willingness to fail sometimes in order to keep pace with market change. But the idea of experimenting can make insurers feel distinctly uncomfortable. They spend a great deal of time meticulously planning to ensure nothing they do falls foul of regulatory or compliance requirements, while the job of actuaries is to be absolutely certain about the carrier’s predicted losses. Will a new culture that demands more speed and

² Market Share Report, Independent Insurance Agents and Brokers of America, 2016.
³ Fritz Nauck, Kia Javanmardian, Brad Mendelson, Jonathan Godsall, "Rethinking U.S. Life Insurance Distribution," McKinsey & Company, May 2016.

The business

Personal lines insurance has felt the greatest impact from digital technology. About 25 percent of people who shop for auto insurance in the United States, for example, buy online directly from the carrier,⁴ with several direct underwriters enjoying high growth and profitability as a result. In the United States, carriers that mostly sell directly have the lowest combined ratios (losses and loss-adjustment expenses divided

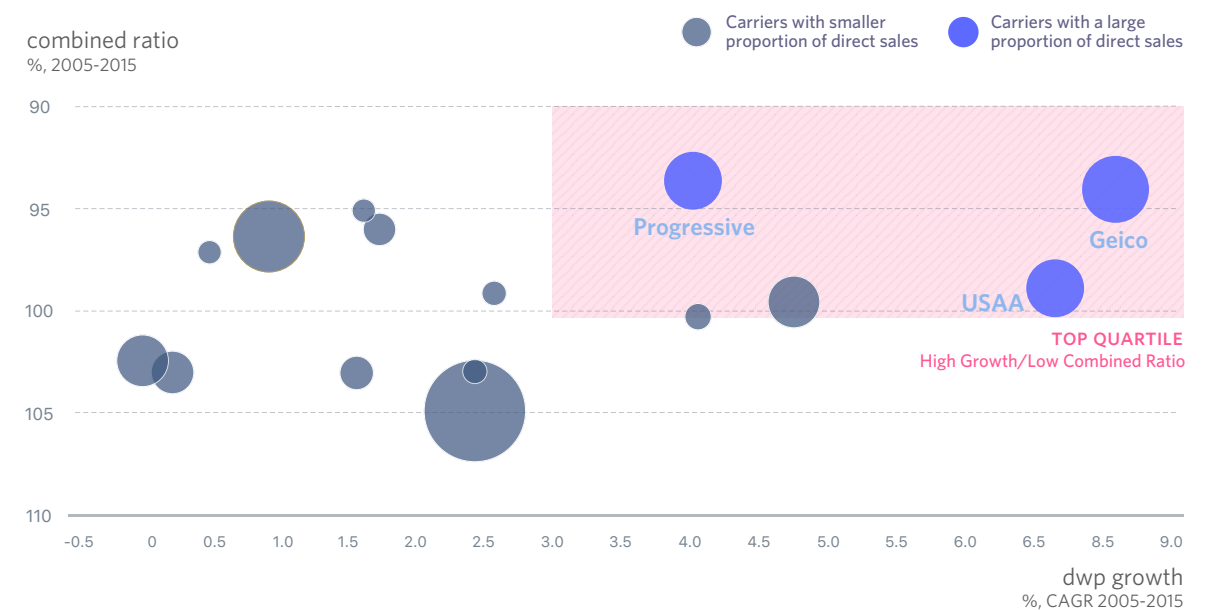
by earned premiums) and enjoy some of the highest growth in direct written premiums (Exhibit 1). Arguably, their success stems from their digital culture: they have moved swiftly to embrace technological innovation and focus on changing customer needs. The outcome is a high level of automation that enables them to cut costs and price keenly, and a determination to make buying insurance easy for customers. Personal lines insurers that fail to act similarly will surely struggle to compete.

⁴ J D Power US Insurance Shopping Study, 2016.

Exhibit 1

Direct sales can enhance growth for personal lines insurers¹

The top 15 personal lines carriers by size in 2015²



¹ Figures refer only to the direct written premium (DWP) growth and combined ratio of the personal lines of each insurer
² Size of the bubble represents size of 2015 personal lines DWP
Source: AM Best, McKinsey analysis

Small commercial and simple term life policies will be next to go the direct route, both as customers grow increasingly comfortable using virtual channels and as the combination of more data and technology enables insurers to underwrite a large share of these risks automatically, limiting the need for intermediaries. Movement is already apparent in the life segment. Jennifer Fitzgerald, CEO of PolicyGenius, a US-based aggregator of term life quotes that aims to make buying a life policy simple for consumers, says people cannot understand why, if they can do something as seemingly complicated as their tax returns on their own, they cannot figure out how to buy a life insurance policy unaided. Haven Life, a direct term life carrier in the United States, offers an online application process that takes less than 20 minutes and makes an immediate decision on term coverage up to \$1 million.

Direct insurance for small commercial is still rare, but a McKinsey survey of more than 1,500 customers with small commercial policies showed 60 percent would be interested in buying directly. Large commercial and specialty policies will be the last to feel digital's pull given their complexity, the fact that brokers fully control distribution, and the lesser price elasticity of buyers compared to other segments.

The function

It is already the case that consumer-facing functions such as marketing, customer service, and claims can fulfill

customers' expectations only if they are strongly digitally enabled. Because these areas lend themselves to digital experimentation, bringing about change should not be overly difficult. In marketing, for example, testing messages and channels in order to find out what is most effective presents little risk for an insurer and can produce answers quickly if A/B tests are used (whereby two versions of a web page or app are tried out to decide which one performs better).

In the US, carriers that mostly sell directly have the lowest combined ratios and enjoy some of the highest growth in direct written premiums.

Before long, however, companies will need to be prepared to broaden their change efforts to wherever the adoption of digital technologies will enhance competitiveness. In underwriting auto insurance, for instance, real-time data from the Internet of Things is leading to more accurate pricing and risk selection based on factors such as how fast a person is driving or how hard they are braking.

Strengths and weaknesses

Our research, as described in the box below, suggests there are certain cultural attributes that underpin a mature digital environment and help drive superior performance: an appetite for risk, a test-and-learn mind-set, organizational agility, and a desire to collaborate internally and externally. Often, of course, these cultural attributes are nurtured by certain management or organizational practices. Is the leadership team a good role model, for example, or are functions set up in a way that makes collaboration possible?

Various tools exist to help a company ascertain its cultural starting position and to indicate what needs to change and what does not. These include McKinsey's Digital Quotient® and the Organizational Health Index.

How to start

There are myriad ways to achieve a digital culture, and the path each company chooses will be unique. In general, there are a number of actions companies can take to kick-start change and speed them on their way. Here we describe some that reinforce three particular traits of high-performing digital companies—customer-centricity, collaboration, and comfort with (calculated) risk-taking.

Customer-centricity

Most businesses make decisions by considering the business case and what competitors are up to. Customer-centric

companies expand the framework for decision making, putting the customer's point of view among their top considerations. A question on the table should always be, "How does this create value for the customer?"

“You’ll be penalized if you fail over a long period of time, so fail fast.”

— Eric Gewirtzman, CEO of US online insurance agency Bolt

At Amazon, for example, internal presentations addressing business problems are known as “working backwards documents.” They start by identifying how a proposed solution would help improve the customer experience, be it a better price, improvement in service, or increased selection. Only then does the presenter work backwards to present the business case. It is a mind-set that some insurance incumbents are endeavoring to enforce. Sandeep Bakshi, the CEO and managing director of Indian life insurer ICI Prudential, insists decisions made by employees, whatever their rank, must have one of three outcomes: improved customer experience, more business, or less risk.

Many other businesses are engaging customers in the product development process, as there is no point asking what they think of a new product or service once it has been launched. If they are dissatisfied, the development has been a waste of time and money. Customer needs should be understood at the outset and feedback sought continually as the product is developed.

Aviva has an internal app that connects employees to the digital insight the company has about its consumers, including live feeds from social media or curated calls from its contact centers.

The more people reached by that feedback, the better. To this end, Aviva has an internal app that connects employees to the digital insight the company has about its consumers, including live feeds from social media or curated calls from its contact centers. “The purpose is to give our people the ability to nibble on real consumer feedback in an entirely raw fashion without making a huge event of it,” says chief digital officer Andrew Brem. “So if you’ve got two minutes, you could read a few tweets about what our customers are

really saying to us or hear a few calls. The idea is just to get our people connected with our customers.”

A sure way to quicken a shift toward a customer-centric culture, of course, is to link employee compensation to metrics that promote it—for example, metrics that measure customer satisfaction directly, or relate to other attributes of high-performing digital companies that affect customers indirectly, such as speed to market.

Collaboration

Collaboration is key not only because it improves customer understanding and decision making, but also because it does so quickly. Our research shows that more than 70 percent of insurers take from six months to more than a year to move a digital initiative from idea to implementation. That is too slow. Scott Simony, head of industry at Google, explains why. “Insurance is a highly regulated industry and it is not easy to move quickly—but the fact is consumers are moving at exceptional rates. So I’d say that the companies that will stand out are the ones that are going to find ways to move a bit faster, at the pace of the people they’re insuring.”

The way to achieve this pace and cut development time dramatically is to set up small, cross-functional teams that take an agile approach to their work. In a functional set-up, no one owns the full customer experience and it can take many work sessions to cobble together a complete view of it. But a cross-functional team, focused on the single goal of

improving the customer experience, can do that rapidly.

The team, located together and working in sprints to meet specific weekly development targets, introduces early prototypes or minimum viable products (MVPs) that satisfy some—not all—customer needs and can be improved with customer feedback. If the team is also empowered to make decisions without seeking higher authority, it can cut delivery time to as little as three to four months.

“It’s really hard to stop a prototype because it’s touchable, feasible.”

— John Straw, Investor, Bought by Many

Pure digital companies such as Spotify were among the first to adopt this agile approach, and insurance companies are increasingly following their lead. John Straw, an entrepreneur with investments in the insurance industry, and formerly the chairman of the digital advisory board at UK travel agent Thomas Cook, recalls his experience building a new insurance website for the company. “It was the prototyping part that made the big difference. Rather than put the plans through a committee, I took some of my budget and went to a WordPress

developer and said, ‘Build me a working prototype of the new insurance website.’ It took four weeks. I then took it to the innovation committee, and it was relatively simple from there. It’s really hard to stop a prototype because it’s touchable, feasible.”

Risk taking

On the subject of experimentation, the inventor Thomas Edison is reputed to have said, “I haven’t failed, I’ve just found 10,000 ways that won’t work.”

In a digital age, insurers need the same mind-set. Concern over the costs of failure can be minimized by the use of the test-and-learn approach encapsulated in MVPs—the frequent gathering of feedback means a company will not travel far in the wrong direction before correcting course. United Services Automobile Association, a US-based insurer, now tests some 8,000 ideas each year, generating roughly 250 patents. Yet a culture that understands the value of calculated risk-taking is one that also accepts failure, and learns from set-backs. Some organizations openly celebrate the lessons learned in order to encourage their employees to take risks.

Organizational changes and the role of the CEO

The way a company chooses to organize itself can significantly affect the pace of cultural change. There are many options. For example, some companies tackle the cultural challenge from within, in the belief that this is the only way it will take hold, while others set up a separate division

for digital initiatives on the basis that they need distance and a degree of autonomy from the old business to flourish. That division will look more like a start-up, with its own goals, new digital talent, agile processes, and the autonomy to act toward these goals.

United Services Automobile Association, a US-based insurer, now tests some 8,000 ideas each year, generating roughly 250 patents.

Youse Seguros, the online insurance sales platform of Brazilian insurance company Caixa Seguradora, was set up in this way. According to CEO Eldes Mattiuso, “It was an essential move. You have to start from scratch. You have to forget about the rules of the old company and think like a start-up. If I’d had to follow the traditional product development procedures it would have proved impossible to move quickly, or to use the cloud, for example. It would have taken us a year and a half to launch a single product.” Eventually, once the new culture takes hold, the division can be reintegrated.

Aside from these considerations, or other actions a company might take, the element that underpins all efforts to embark upon cultural change, and sustain it, is the commitment of the CEO and the leadership team. It falls to them to explain to the organization why cultural change is so important and to model the required behaviors. Some gain inspiration and conviction for this by visiting other companies around the world; Dean Connor, CEO of Sunlife, takes his management team to Silicon Valley once a year, for example. Others spend time with customers, then share what they have learned, perhaps in a live-streaming interview, or underscore the importance of a changed culture in every meeting. Whatever the specific tactics, it is the demonstration of senior commitment that is the surest way to bring about change. Everything emanates from there. □

Tanguy Catlin is a senior partner in McKinsey’s Boston office. **Somesh Khanna** is a senior partner, and **Julie Goran** is a partner, both in the New York office.



A roadmap for a digital transformation

No insurance company has yet completed a digital transformation — one that fully harnesses the power of digital technology to rethink every aspect of the organization. But a number of carriers are making remarkable progress, indicating the direction others should take.

The future of insurance will be digital. That much is certain. The industry might have been slow to feel digital technology's impact, protected by regulation, the size of companies' in-force portfolios, and customers' tendency to stay put with their insurers. But the pressure is mounting. In auto insurance, a handful of direct carriers already enjoy the lion's share of profits. Disruption of other lines of business will surely follow. Distribution channels, products, underwriting technology, competitors, and even business models will shift as technology attacks market inefficiencies and customer expectations evolve.

Most insurers are responding to some degree, albeit often cautiously. Some see how digital technology will transform pieces of the business, but find it harder to envisage how the entire value chain and business model might change. They therefore content themselves with investing in a new sales channel, launching a service app, or automating a few processes. At other carriers, executives believe a transformation will not be completed on their watch, because the magnitude of change required will leave no part of the organization untouched and could take up to a decade. So why bet on an uncertain future and risk cannibalizing existing profits or alienating distributors when they face more pressing issues, such as regulatory compliance?

A growing number of executives, though, are facing up to digital reality. They know that digital technology can significantly improve the performance of their current business. They know that first-movers

have an advantage. And they are keenly aware that digital can give birth to entirely new business models that shake up sectors, leaving companies that fail to adapt struggling to survive (newspapers are a case in point). They have therefore taken steps toward transforming their businesses.

The CEO cannot simply sanction a digital transformation; he or she must communicate a vision of what needs to be achieved, and why.

They are far enough advanced to know that each stage of the transformation will present challenges. The first will occur at the outset, when the CEO must set the company on the right course for success. More will present themselves during the first six to 18 months—the launch and acceleration phase—when initial changes have to start taking root, and yet others will arise during the long haul of subsequent years, when digital initiatives need to be scaled across the enterprise and digital capabilities and new ways of working become the lifeblood of the company. Already, the industry's digital pioneers are meeting these challenges and demonstrating to fellow CEOs ways

in which they can be overcome. And from these early efforts and successes a set of ten guiding principles is starting to emerge (Exhibit 1).

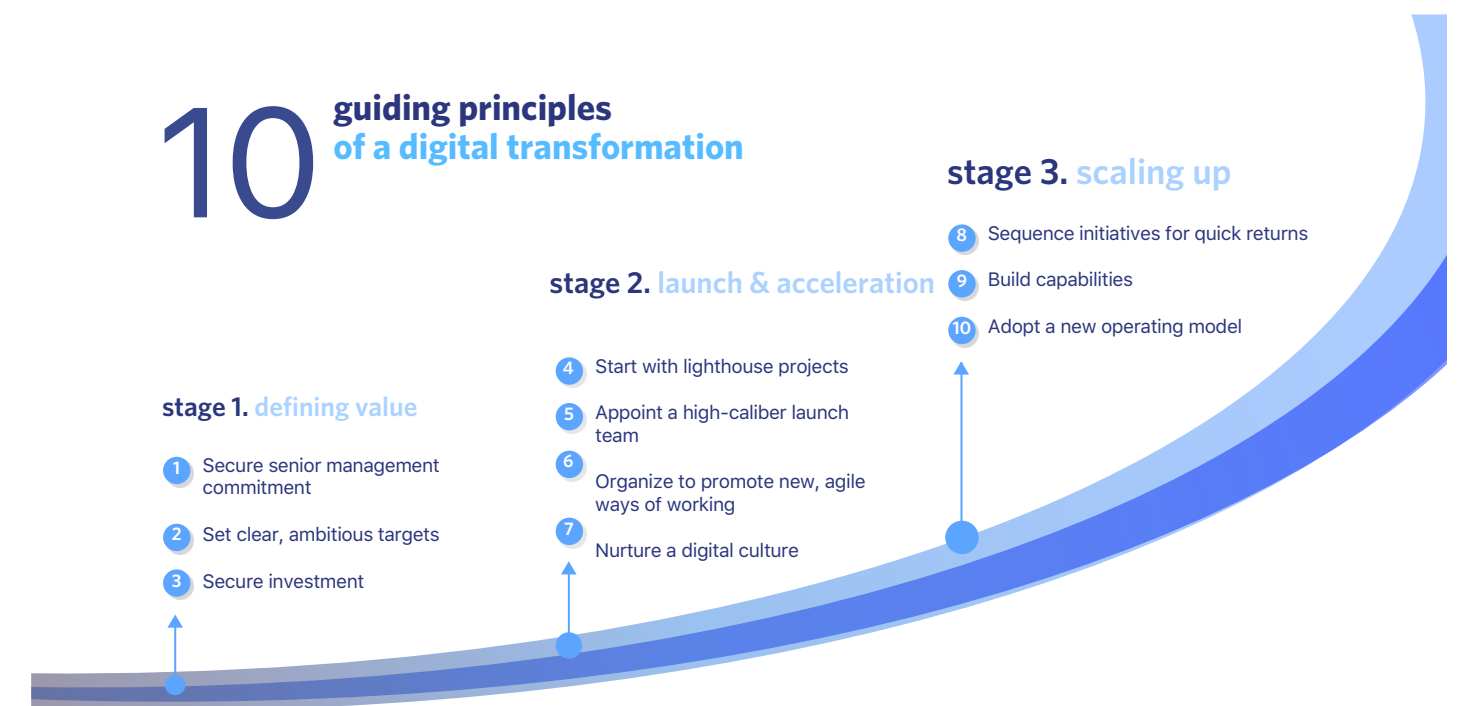
Defining value

To set a digital transformation on the right course a company must place it at the core of its agenda, and understand the magnitude of that undertaking. It is not for the fainthearted, but CEOs are heading in the right direction if they grasp the fundamental importance of heavyweight management commitment, are willing to make significant investments, and set clear, ambitious targets.

1. Secure senior management commitment

Any transformation will be dead in the water if it does not have the commitment of the CEO and the leadership team. That statement seems almost glib, given how often CEO commitment is positioned as the solution to any major challenge. But the CEO cannot simply sanction a digital transformation; he or she must communicate a vision of what needs to be achieved, and why, in order to demonstrate that digital is an unquestionable priority, make other leaders accountable, and make it harder to back-track. Hence, in 2015, Allianz announced that a key strategic growth

Exhibit 1



initiative was to become “digital by default”—indicating the extent of the changes ahead. Similarly, ING branded its transformation “Fast Forward.”

It’s not enough just to have CEO sponsorship. It needs to be provocative, disruptive, ambitious, and often uncomfortable sponsorship to be successful.”

— Andrew Brem, chief digital officer, Aviva

With the vision set, results are then achieved through relentless daily engagement. Andrew Brem, chief digital officer of Aviva, says CEOs need to be “single-minded and aggressive” about driving the transformation. “There’s no way you can do digital transformation by halves,” he comments. “Our CEO is chirping in my ear the whole time. He is very activist. He bases himself in our garage frequently. He drops into meetings. He just starts talking to people. It’s not enough just to have CEO sponsorship. It needs to be

provocative, disruptive, ambitious, and often uncomfortable sponsorship to be successful.”

2. Set clear, ambitious targets

To set the organization’s sights at the right level, investments need to be linked to clear, ambitious targets. This helps on three fronts. First, it signals the magnitude of what digital technology can deliver. Without targets, people who find it hard to accept that the old ways of doing things were massively inefficient might be content to sign up for a 10 percent improvement in cycle time, for example, when 100 percent is possible. External benchmarking can help in this respect by reinforcing the conviction that cutting the time it takes to, say, process a claims submission from 90 minutes to 20 is not good enough if someone else has reduced it to four. A company can be certain that if it does not match that benchmark soon, others will.

Second, setting clear targets at the outset prevents back-sliding when the going gets tough. And third, it imposes discipline on the process of deciding which initiatives to pursue for maximum impact.

Targets are needed for each source of value creation—cost savings, revenues, improved performance of agents, and satisfaction of employees and customers—and for new ways of working and the new capabilities required. They can be set, for example, for the frequency of releases, the percentage of processes that will

be automated, the percentage of transactions that will be migrated from one channel to another, the fraction of new code that will be tested automatically, the level of personalization that will be achieved, and the number of campaigns that will be run each month.

An insurer with premiums worth more than \$5 billion should expect to hire between 20 and 100 new specialists during the first 18 months of a transformation.

3. Secure investment

Digital transformation is likely to require significant investment. European insurer Axa, for example, invested €950 million over just two years. Our experience suggests that in IT alone, companies with outdated systems might need to double their current spending over a five-year period. That investment is likely to result in lower profits for a while—but without it there is a serious risk to profits in the longer term. Importantly, companies will need to allocate investment both to improve the current business and to

build new businesses as the insurance model evolves. To acquire expertise in new fields and keep abreast of innovation, for instance, insurers will need to invest in partnerships or a venture capital arm, perhaps both, as well as in their own innovation labs.

Launch and acceleration

It is easy to launch change initiatives. It is hard to keep them afloat and spawn more. Often companies decide to fund several, assign people, even set up separate units. But then the initiatives fail to take off and the old ways of doing business continue much the same—at which point executives wrongly conclude there is no urgency as the market is not ready for change.

To ensure early efforts thrive and build momentum, companies should consider carefully which projects to start with and support them with the necessary resources. Prerequisites include a high-caliber launch team often led by a chief digital officer (CDO), consideration of organizational structure, and the nurturing of a digital culture.

4. Start with lighthouse projects

To win early support, companies should start with projects that offer potential for significant rewards with manageable risk. Such projects include customer services activities and the redesign of the claims process, from the moment a customer needs to file a claim to the moment of reimbursement. Customers will be delighted, cost savings can be as high as

40 percent, and effectiveness, measured in return on investment, can rise by as much as five percentage points.

5. Appoint a high-caliber launch team

The importance of securing a high-caliber launch team, often under a CDO, cannot be overstated. A CDO can prove invaluable in co-ordinating a transformation—avoiding duplication by devising a methodology for the redesign of customer journeys that can be replicated across the organization as digitization efforts are extended, for example. He or she can also ensure the appropriate technology and skills are in place, decide the sequence of the transformation, monitor progress against targets, and ensure that tactical day-to-day priorities get the attention they need. But the role of CDO is a temporary one. At the end of the nineteenth century, many companies employed a chief electricity officer to ensure supplies of what was a new industrial commodity. A few years later, none did. Key recruits to the launch team include designers to contemplate customers' unmet needs and inform the creation of experiences, products, and services; data scientists; scrum masters to facilitate agile development; and developers who can work in the modern IT environment. Roughly, an insurer with premiums worth more than \$5 billion should expect to hire between 20 and 100 new specialists during the first 18 months of a transformation.

That is not a huge number, but the competition for digital talent and the advantage technology companies have in attracting it makes finding people of the

highest caliber a considerable challenge. The scarcity of elite data scientists, for example, has been a factor in some insurers' acquisitions of cutting-edge artificial intelligence start-ups; \$5 million to \$10 million per employee can be commanded in these so-called "acqui-hire" deals.

“We have an advantage when it comes to culture. We are a tech company in the insurance space, not an insurance company that plays with technology.”

– Adam Lyons, founder and CEO, TheZebra.com

One way to meet the challenge is to start by hiring a renowned expert to serve as an anchor hire, who will help to attract others, on the basis that they will be drawn to him or her more than they would be to an insurer *per se*. Some companies go further than hiring individuals and acquire agencies that specialize in design thinking. To help satisfy the expectations of their ambitious recruits, companies might have to adapt their traditional value proposition, based on span of control, with a different

kind that promises empowerment in their work on high-impact digital initiatives. “The talent piece is essential,” says Andrew Brem. “I’ve hired an entirely new digital team. I’ve brought in people from the world of gaming, from travel, from retail, from pure digital. And they’ve bought in a lot of people too. There are some particular skills I’d call out. One would be digital production design. Another would be digital marketing on the social side. And another would be data analytics, particularly on the customer side rather than risk.”

People leadership skills are essential too. Transformation is not just about tipping everything upside down, reinventing products, and disrupting value chains. It is partly about balancing old and new and integrating fresh talent with old, valued hands. As Clara Shih, founder and CEO of “advisor marketing cloud” company Hearsay has observed, digital-savvy hires from outside the industry might ace building a digital-direct, e-commerce business, but are often ill-equipped to modernize insurers' existing channels, where huge, value-creating opportunities await. “The reason traditional agency distribution hasn’t innovated is because it’s very hard to find someone steeped in digital who also understands field sales, and vice-versa,” she says.

6. Organize to promote new, agile ways of working

The way a company organizes itself is key to a successful launch. Setting up a digital unit independently of the organization will promote new ways of working essential for digital success, such as agile product

development, test-and-learn methods that speed progress while keeping the focus on customers, and cross-functional teams that pool specific types of expertise.

“The reason there hasn’t been more innovation within traditional distribution ... has been that it’s very hard to find someone with a digital skill set who also understands field sales and vice versa.”

– Clara Shih, co-founder and CEO of Hearsay Social

A digital unit can also help attract and retain those specialists, while offering them freedom from incumbents' organizational constraints and the support of like-minded colleagues. If such people are simply parachuted into the existing structures of incumbents they can become bored and frustrated at the pace of change. They need to be empowered to make a swift impact, which often means giving them authority to make their own decisions.

Separating a digital component from the rest of the organization is not entirely the answer, however. To begin with, newcomers can (unintentionally) run roughshod over what is valuable in an incumbent: the reason many insurance companies have been around for more than a century is that they excel at what they do. They can also start to create channel conflict, particularly if innovations threaten to cannibalize revenue streams. The digital unit therefore needs to be reintegrated at some stage, and that becomes more difficult as time passes. Whatever the choice, the ultimate goal has to be to enmesh the old and the new.

McKinsey research has shown that 46 percent of financial services executives feel cultural or behavioral change is the biggest challenge they face in pursuing their digital strategies.

7. Nurture a digital culture

We have touched upon how digital ways of working and thinking—fast, collaborative,

empowered—will be the default mode of new recruits with digital skills. These methods also need to take hold across the organization, and now is the time to start nurturing them.

So much needs to change. A focus on customer needs rather than process and procedure, continuous customer feedback, comfort with testing and learning and hence with occasional failure, and collaboration—all are vital. But insurers can be made to feel they are being asked to jettison the things that have made them successful and adopt an untested culture. No wonder McKinsey research has shown that 46 percent of financial services executives feel cultural or behavioral change is the biggest challenge they face in pursuing their digital strategies.

They are not, of course, being asked to abandon the traits that have made them successful, but to renew their heritage with innovative ways of thinking and working (see “Building momentum for cultural change”). Brad Auerbach, US industry manager at Facebook, describes it as recalling what initially made them successful. And there are relatively easy ways to kick-start change and gain support. For example, rather than making decisions by considering the business case or what competitors are doing, insist that the starting point is “How does this create value for the customer?” Moreover, change can begin in areas where there are fewer risks—in marketing, for example, by testing messages and channels to find out what is most effective.

“Agile principles are now standard operating procedure for software design, but they’re also applicable any time you need to orchestrate a large number of people to get something complex and multi-faceted done over an extended time frame.”

— Marcus Ryu, co-founder and CEO at Guidewire Software

Scaling up

At the 18-month point, companies should be making good progress. They should have a handful of initiatives up and running and be starting to capture value. But just when everything seems under control is also the time to supercharge the transformation and do everything on a grander scale. The thoughtful sequencing of subsequent initiatives is key to this. In addition, close attention will need to be

paid to building more capabilities. And to reap the full rewards of a transformation, eventually an entirely new operating model will be required.

8. Sequence initiatives for quick returns

Sequencing with a view to quick returns is key to building scale fast. The more value a transformation captures as it progresses, the more it becomes self-funding and the greater the support it garners. Often a company’s approach is to let a thousand flowers bloom. But this spreads scarce resources thinly. Moreover, transformation incurs costs at a time when competition is probably putting pressure on margins. Hence the imperative to thoughtfully pursue a manageable number of digital initiatives to tend the performance of the core business while cultivating future sources of growth (see “Capturing value from the core”).

Initiatives that are strategically important, pay back quickly, and reduce complexity are the ones to prioritize. This almost always means looking for ways to cut costs—a counterintuitive notion for many executives who tend to focus on digital technology’s growth potential. But context matters. A company’s financial pressures will shape the sequencing to some degree. So will its IT, if legacy systems restrict initial choices. And companies need to be flexible. It could prove hard to recruit the particular people needed, while technology and customer behavior will continue to evolve.

Tracking returns is essential to ensure all available value is captured. Often,

targets can be raised during the course of the transformation as prototypes reveal greater productivity improvements than have been assessed on paper. And when initiatives are successful and deliver the intended financial benefits, the board and top team should be emboldened to push to achieve more. But while concentrating effort and attention on what works well matters, so does letting go of what does not.

9. Build capabilities

By now it will be apparent that insurers will have to invest in more than just digital technologies themselves to scale up digital initiatives. Marcus Ryu, co-founder and CEO at Guidewire Software, contends that it is only by modernizing core operating platforms — most importantly policy administration, billing, and claims systems — that insurers can externalize the data and business logic necessary to deliver a satisfying digital experience for the policyholder or distribution partner.

Skills as well as systems will need to be boosted. But if a company struggles to hire 20 to 100 new people for the launch team, how should it go about hiring several hundred? Searches are likely to extend to developer communities and to technology conferences and similar events. The quest for talent might even lead companies to establish partnerships with software providers.

A huge internal training job will be needed too. Business leaders will need to understand IT's strategic value—the

reason one large European insurance group has set up an IT literacy program to educate and update business line managers, while all newly appointed top business managers must take a three-day training module to help them understand and capture IT's strategic value (see “Modernizing IT for a strategic role”).

Ultimately, however, it will be important to help all employees rethink the way they work, as the end result of a digital transformation is the establishment of a company-wide agile operating model.

10. Adopt a new operating model

Whatever structures a company chooses initially, it will reach the stage when only a fundamental organizational redesign will do. Silos drawn along functional lines have always been a drag on collaboration and performance in large organizations. In the digital age, when companies need to reinvent the way they work on the fly, an inability to connect all parts of the organization to share data, expertise, and talent can be crippling.

The only way forward for a company is to learn as it goes and figure out how to apply lessons as scale is built.

That is why companies will have to lean away from a traditional matrix structure with rigid functional boundaries if the transformation is to succeed. They will need a network structure, organizing around sources of value, with product managers empowered to make decisions with implications that cut across functions. Teams will not be permanent. They will be dissolved when they capture the value at stake, then regroup around new sources of revenue growth or cost reductions. Some companies call them scrum teams, others tiger teams, portfolios, or tribes. Whatever the label, the ossified matrix is giving way to a more agile one. In other words, the entire organization, not just IT, will adopt an agile approach to working. “Agile principles are now standard operating procedure for software design,” says Marcus Ryu, “but they’re also applicable any time you need to orchestrate a large number of people to get something complex and multi-faceted done over an extended time frame.”



Insurers that pursue digital transformation will meet challenges. IT projects fall behind schedule, channel conflicts arise, and unexpected regulatory concerns emerge. Typically, companies also struggle with cultural issues and challenges in recruiting new types of talent.

No rule book will solve all of this. A transformation is not a science. The only way forward for a company is to learn as it goes and figure out how to apply lessons as scale is built. Along the way there will be important markers of success. IT strategy will become clearer as early prototypes

afford insight into decisions relating to technology architecture, data architecture, and platforms. Customer satisfaction is likely to jump. Cycle times will be shorter and costs will fall. New ways to accelerate revenue growth will reveal themselves. This is the time to double down on efforts.

A closing thought, and perhaps one that reframes the challenge: the term digital transformation puts the emphasis on technological change. But it becomes clear to anyone who understands digital technology's potential that what is afoot is less of a digital transformation and more of a fundamental rethink of the corporate model, for which digital technology is the catalyst. Sources of revenue, efficiency, and the organization's structure are all up for scrutiny, as are talent models, which need to offer more flexible, more empowering, and more rewarding career paths. Some executives might feel the reframing makes the challenges more daunting still, others that it makes the opportunities more exciting. We are in the second camp. □

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Its application reveals that, relative to sectors such as telecoms, travel, and retail, the insurance industry remains in the early stages of digital transformation. Indeed, among the nine industries measured, insurance ranked seventh, scoring an average of 31 points out of 100 (Exhibit 1).

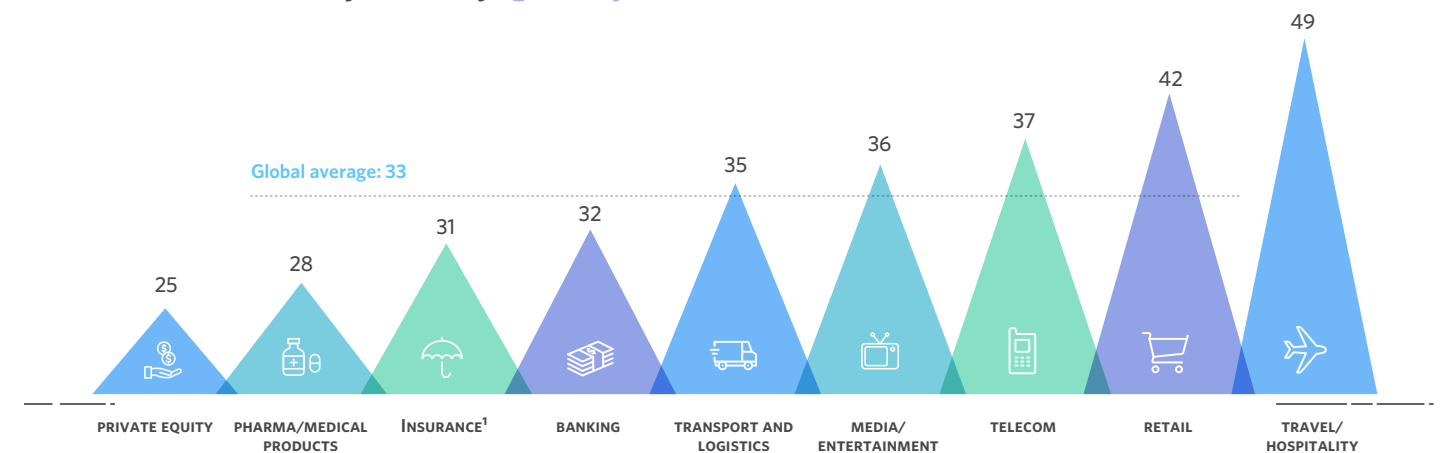
McKinsey research shows that this lag is due largely to a weak digital culture. Of the five attributes important to a digital culture—an appetite for risk, a test-and-learn approach to product and service development, agility, willingness to

collaborate internally, and willingness to collaborate externally—US P&C insurers struggle most with the first three (Exhibit 2).

The stark performance differential matters. Top P&C insurers, those that score 50 and higher, are increasing revenue 1.5 times as fast as the rest of the field and operating with a combined ratio that is eight percentage points lower. Our research examined what insurers are doing differently in the four management practice areas to outperform their peers (Exhibit 3).

Exhibit 1

Distribution of Digital Quotient® score by industry, globally



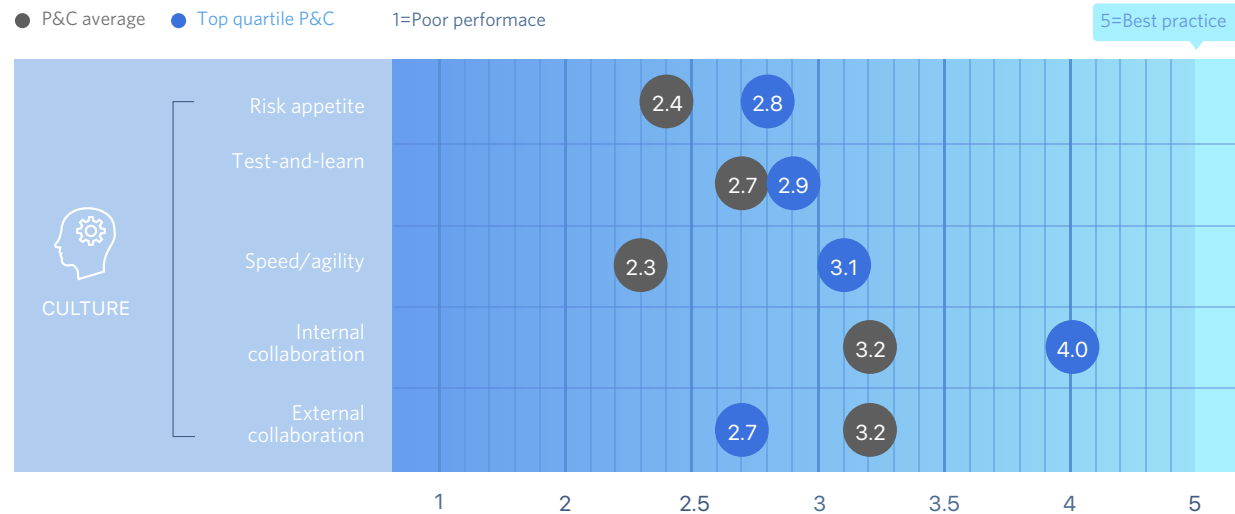
¹ Includes P&C and Life
Source: USDEC

Digital Quotient: Where does your company stand?

To assess the digital maturity of businesses, and hence their ability to thrive in a digital world, McKinsey has devised a simple metric, the Digital Quotient®. The DQ evaluates 18 management practices connected to four areas—digital strategy, capabilities, culture, and organization—that correlate most strongly with growth and total returns to shareholders.

Exhibit 2

P&C insurers' performance scores in the five attributes important to a digital culture



Strategy. Top-performing P&C insurers scored on average 73 for the effectiveness of their digital strategy, compared to an average of 40 across all companies. This strong performance was driven by three enablers: a bold long-term vision based on a clear and shared articulation of customer priorities, strong support from senior leaders, and a firm set of targets for growth, market share, customer satisfaction, and return on equity.

Capabilities. The best performers were particularly strong on connectivity between channels and digital content creation, earning an average score of 43 for their digital capabilities compared to an

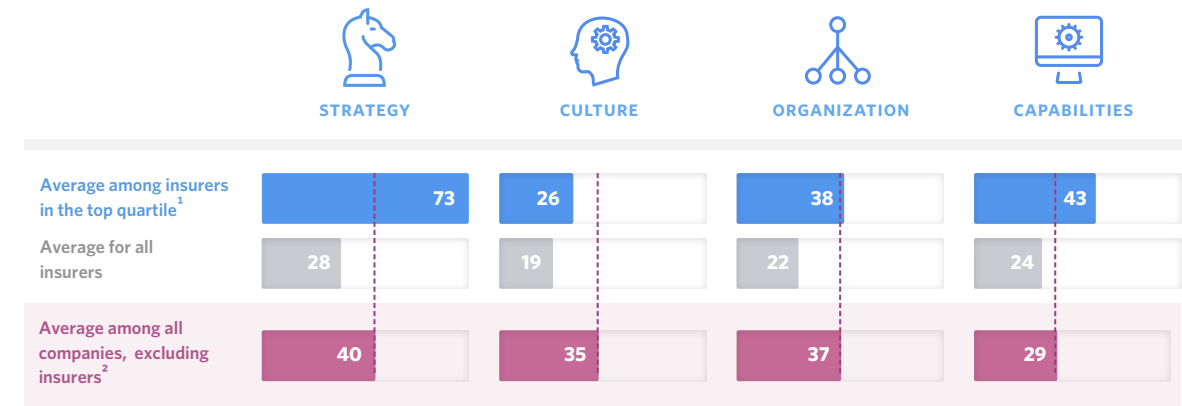
average cross-industry score of 29. They generate 47 percent of all sales over digital channels, compared to 11 percent for the average insurer. They also make it easy for customers to file first notice of loss claims online, receiving 15 percent more such notifications over digital channels than the average insurer.

Culture. A handful of cultural attributes separate outperformers from the rest of the pack. They have a greater risk appetite for digital initiatives, embrace a test-and-learn mind-set, enforce cross-disciplinary collaboration, and look outward for inspiration.

Exhibit 3

Insurers' digital maturity as measured by the Digital Quotient®

Points out of 100 for P&C insurers in each of four areas



¹ Sample of some 30 insurance companies worldwide.
² Sample of 200+ companies drawn from range of US-based, non-insurance industries.

Organization. High-quality governance and employee practices, and the effective alignment of roles and responsibilities, are especially correlated with market success. But even top-quartile companies that institute dynamic measurement and talent development practices can struggle to adapt the way they work. Insurers on average record poor to middling performance in fostering a digital organization, with an average score of 22 compared to an average of 37 for all industries. □

For further details of the survey, see see Tanguy Catlin, Ido Segev and Holger Wilms, "The Hallmarks of Digital Leadership in P&C Insurance," McKinsey & Company, August 2016.

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