

EY's 2016 Sensor Data Survey

Disrupt or be disrupted

EY's survey results outline the perils – and potential – of new data sources for insurers.



Building a better
working world

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Executive summary

Once futuristic concepts - wearable technology that tracks behavior and promotes healthier living, apps and devices that record driving patterns, in-home and building sensors that monitor environmental conditions, drones and other geographical information systems - have become here-and-now phenomena. While their current adoption is not widespread, early adopters have made clear that these technologies are ready for integration into market value propositions and standard operating procedures.

The growing adoption of these technologies – and the usage-based, “pay-as-you-live” business models they enable – confirms that the insurance industry has reached a tipping point. The right bold action can lead to significant value creation in the very near term, while “wait-and-see” delays or insufficient change will leave insurers even more competitively vulnerable.

To understand how insurers view the risks and opportunities of sensor data and other new data sources, EY surveyed senior executives from nearly 400 insurers around the globe, as well as 1,400 firms from other sectors, including banking, electronics, retail, telecom, automotive and other sectors. The survey addressed both current practices and plans for tomorrow.

The results make clear that forward-looking and top-performing insurance organizations are already innovating with telematics, wearable technology and sensor data, though not to the extent of leaders from other sectors. Why is sensor data so important to insurers in particular? On the strategic front, it presents a clear and compelling opportunity to re-engineer the fundamental value proposition through transformative product innovation to benefit customers and shareholders.

There are also significant tactical advantages across the enterprise, with performance improvement opportunities at the core of the business:

- Assessing risks more precisely and empowering underwriting teams
- Designing products faster and pricing them more profitably
- Connecting with customers more directly and relevantly based on greater visibility into their changing needs
- Revolutionizing claims handling and service experiences
- Maximizing profitability through better targeting

Of course, non-traditional insurers from outside the industry have similar access to – and in some cases ownership of – these capabilities and technologies, which greatly increases the imminent threat to current insurance leaders.

About the survey

In 2015, EY's global insurance practice conducted a first-of-its-kind survey to explore the implications of sensor-based technology with C-level and other senior executives from a range of industries.

Objective: define the ways in which new data and emerging technologies might shape business innovation, product and pricing strategies, risk and regulatory management, customer engagement and operational transformation.

Participants:

- ▶ Role: C-suite (75%) and VP or higher (97%)
- ▶ Companies: 1,782 organizations globally, including nearly 400 insurers
- ▶ Sectors: insurance, banking, electronics, retail, travel, automotive, telecommunications
- ▶ Size (revenues):
 - ▶ <\$1 billion: 20%
 - ▶ \$1 billion - \$10 billion: 35%
 - ▶ \$10 billion - \$50 billion: 30%
 - ▶ >\$50 billion: 12%
 - ▶ No reply: 3%
- ▶ Countries represented: Argentina, Australia, Brazil, Canada, Chile, China, Czech Republic, France, Germany, India, Italy, Japan, Mexico, Netherlands, Poland, Russia, Singapore, Spain, UK, US

Considering the overall impact and the stakes for the industry, a few scenarios should be considered:

- ▶ Direct, unmediated customer relationships may soon become the rule, rather than the exception, as insurers gain direct access to this objective and unfiltered data. Traditional distribution patterns will be disrupted once agents and advisors are no longer controlling and brokering the access to customer data, and as insurers cultivate and fully integrate these newer technologies.
- ▶ Advanced intelligence about customers means it is possible for insurers to know more definitively who their customers are, what they do and think, and how they change over time. Such insights will no longer be based mainly on insurers' own data, but rather on more diversified and timely data sets that combine vast historical information with real-time streams. This collision of data will give insurers the ability to model and take action much more precisely and proactively than before.
- ▶ Such intelligence will enable rapid advancements toward truly individualized relationships, as opposed to the generic segmenting and rudimentary targeting of the past. Insurers can devise and bundle products with much greater sophistication and precision. Mass customization will lead to increased value for some customers and less value for others. "Downselling" may become as common as upselling. With features, pricing and access tailored for individual customers, insurers will be able to optimize their customer base for profitability and simultaneously manage risk and underwriting functions more effectively.
- ▶ The days of selling "just insurance" may be numbered. Some disruptors will be well positioned to promote healthier, more secure and safer living through the use of sensor technology, rather than just contracts protecting personal finances from ill fortune. The view insurance as another product feature represents a tectonic shift in the way customers evaluate among service providers.

In summary, the survey results illustrate just how extensive, profound and lasting the impact of sensor technologies will be to the industry. There is also considerable debate about the possibility of more focused risk pools potentially reducing profits of insurers that do not understand them. Survival in a changing insurance market will require a shift in mind set and capability, the adoption of different business models and the integration of new data and technologies.

This report includes key findings and analysis conducted by EY's insurance advisors and industry professionals, and outlines a path forward based on the lessons learned by the success of leaders and specific implications and actions that apply across the insurance enterprise.



Part 1:

Monetizing the collision of sensor data: what it is and why it matters to insurers

Given the ubiquity of buzzwords regarding data, it is worth defining our terms. For the purpose of the survey, we defined “sensor data” as data streams from:

- ▶ Wearable or personal technology, sometimes called “fit tech,” often used in the context of monitoring heart rate and other health-related metrics. This technology is rapidly developing, with prototype patches already performing blood work, ECGs and automatically administering drug doses.
- ▶ Sensors on objects, including personal and commercial vehicles and shipping containers, that measure distances traveled, speeds and frequency and level of braking.
- ▶ Location-based sensors, such as those in factories, warehouses or offices and in-home sensors, including “smart” thermostats and security technologies, such as alarms and cameras.
- ▶ Other geographic information systems (GIS) that provide geophysical, topographical, climatological and hydrological data, as well as information about utility grids and flight path, and which may include drone and satellite imagery.

This data is directly accessible by or streams to insurers via sensors or mobile devices, though third-party organizations may also play a role in owning, aggregating and distributing to insurers. Dark data – data already owned and stored by insurers, but not currently used – should also be included.

All of these data types are potentially useful for the full range of products and lines of business, from commercial (which was an early adopter and has been an advanced user of such data for many years), to life, property and casualty and health.

The results frame the relationship between new data streams and existing data sets, and the relative importance of each. Specifically, data from wearable technology will surge in importance, relative to web behavioral data and self-reported customer data. See *figure 1*.





This shift is important within insurance because insurers are positioned to become much less reliant on agents and customers to provide data. Historically, that data has been subjective, filtered and not readily available, especially in the event that agents were responsible for “owning” customer data. Instead, as direct streams from sensors and wearable technology become commonplace, any organization can easily have objective, unfiltered and easily accessible data.

Consider the questionable accuracy of self-reported data. On insurance applications, misrepresentations of certain behaviors (smoking, alcohol intake, exercise regularly, miles driven by week) are common. Sensor data, along with social media information, can help insurers validate the accuracy of information provided by agents and consumers. And it can enhance the value of self-reported data, on which insurers are more reliant than any other industry. See *Figure 2*.

Figure 1:
Importance of data sources

Q8. Assuming that your customers have agreed to share data, which sources and types of information would be MOST important for competitiveness in your industry? Select top 3. N=1,784

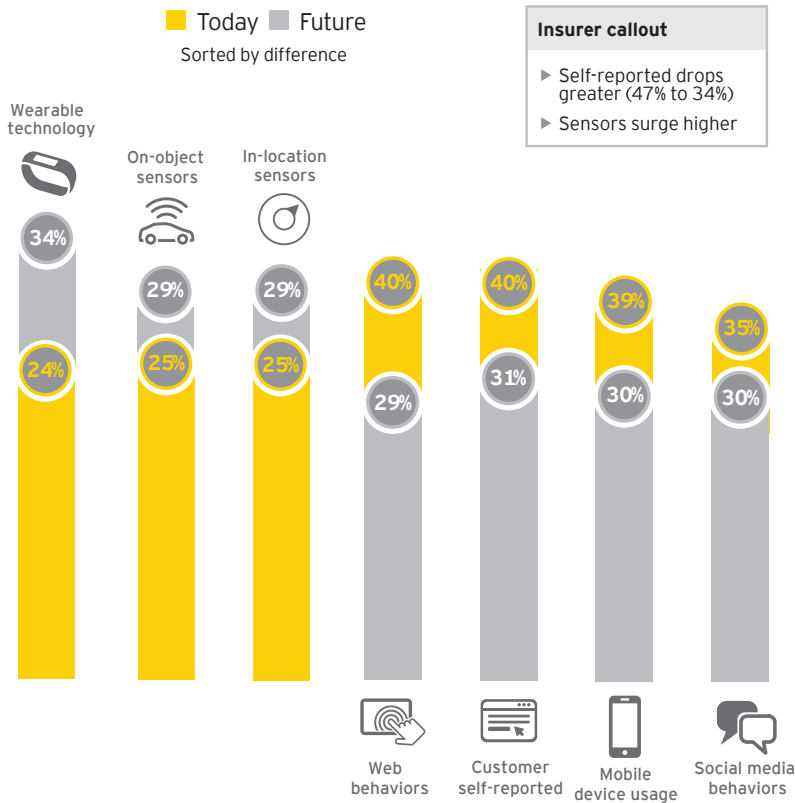
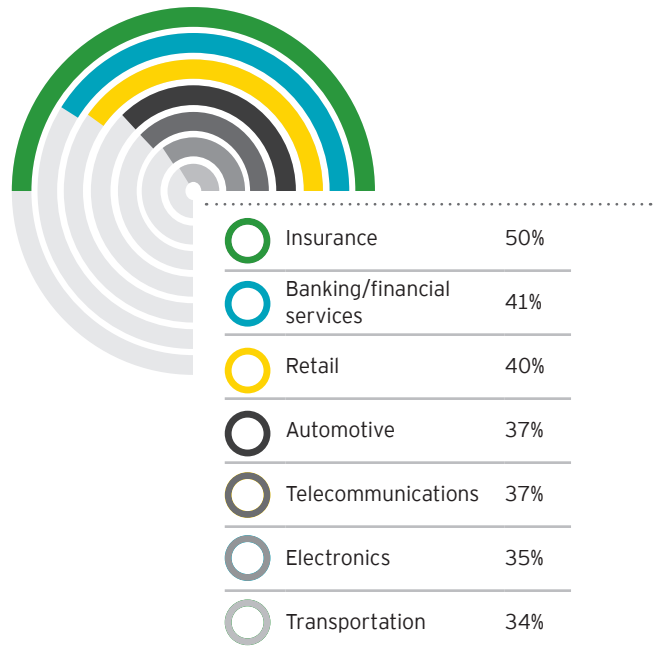


Figure 2:
Insurers need self-reported data today more than any other industry

Self-reported data is the most important data for competitiveness in the industry today.





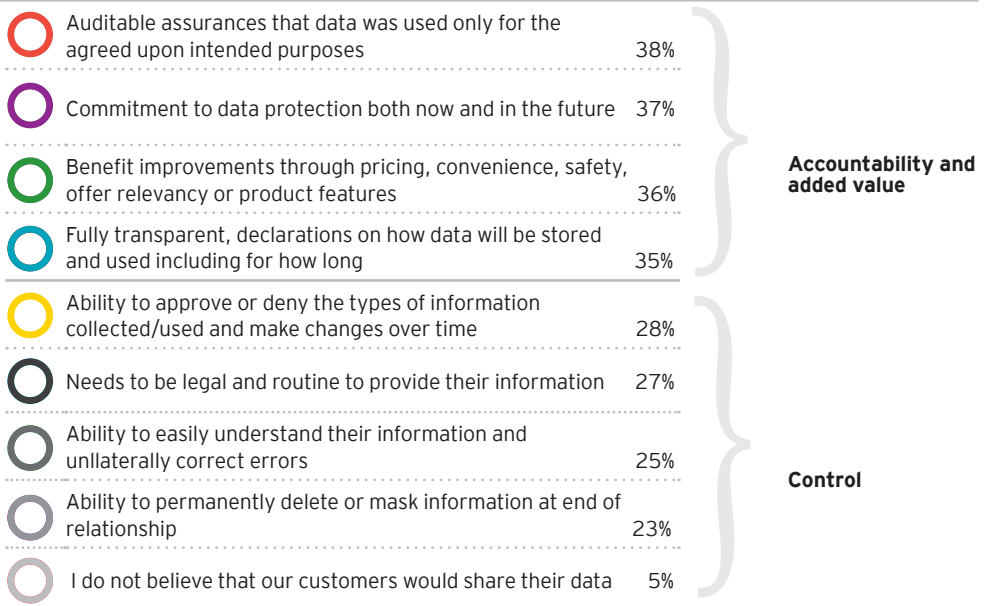
The customer view: The customer impact must be considered, not least because they are the ones providing the data. The essential question is, “What value or benefits must be offered to customers to share such data?” The survey results make clear that executives believe customers will share personally identifiable information (PII), provided the rewards outweigh the risks, and that they have a sense of what consumers are looking for. See Figure 3.

Accountability and added value are top priorities for customers, while accuracy and control are less important, according to survey respondents. Beyond the protection of data, customers are seeking clarity and confidence about how their data will be used, that it will only be used for stipulated purposes and that they will yield some value (whether preferable pricing, more convenience or value-adding features) for sharing it. Correcting errors in their data or deleting data types scored significantly lower than these other concerns.

The bottom line is that insurance executives must ask themselves if the added value from improved pricing and product features is greater than the risk associated with accountability, control and protection of the data.

Figure 3:
Customers conditions for sharing their PII

Q7. What would it take for your customer to agree to the collection and use of their unique information such as their activities or their product usage? [Select top three]. N=1,782.





These findings raise several significant implications. For example, the frequency, extent and high visibility of data breaches mean customers may come to demand more value for sharing information – and insurers must consider the value proposition as much as their protocols for protecting data. Similarly, they may seek to limit their risk exposure to data breaches or shift that risk to other parties by choosing not to collect or maintain certain types of PII that is available through third-party channels.

Further, new data provides an opportunity for insurers to retake the information advantage relative to policyholders and agents, and reduces the insurer's reliance on customer self-reported or brokered data. Risk pools can be determined using direct streams of detailed and granular data, meaning some broker and agent activities will no longer be needed.

Customer data security and privacy

Implications

- ▶ High-profile data breaches may lead customers to demand more value for sharing information
- ▶ Generic, blanket privacy policy statements will no longer suffice

Actions

- ▶ Engage customers to identify what value they will seek in exchange for their data
- ▶ Revisit data protection protocols and new, emerging architectures
- ▶ Don't store or maintain customer data that is readily available
- ▶ Acquire and internalize data not replicable externally
- ▶ Turn to external parties to maintain certain types of PII
- ▶ Consider engaging regulators and industry peers in developing robust or auditable "generally accepted privacy principles"

Part 2:

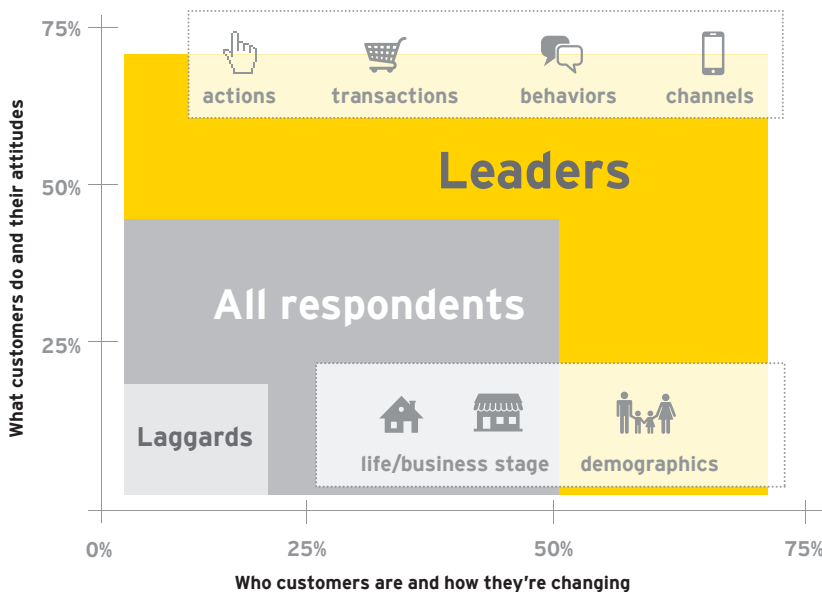
Leaders vs. laggards across industries: what top performers think, know and do

The survey methodology sought to provide a clear view of the approach and practices of top-performing organizations across industries in terms of their use of new data and emerging technologies.

The clearest difference between leaders and laggards is that leaders are much better at advanced analytics, thanks to a holistic and broad-based approach. See *Figure 4*. Qualitatively, leaders have more of what they need to know about their customers when they need to know it. Specifically, they have better insight into:

- ▶ Who their customers are: persistent facts about life/business stage, preferences, demographics, and social and professional networks
- ▶ What they do and think: transactions and trackable interactions, plus a sense of values, wants, needs and attitudes
- ▶ How they change: evolving circumstances and where they are headed

Figure 4:
Near/at best-in-class customer information



Looking deeper, leaders continually seek more context in terms of customer data and insights by prioritizing the integration of external sources and enabling more business users, while laggards optimize the status quo. What's more, 75% of laggards are dissatisfied with their company's advanced analytics capabilities – meaning this is a status quo that is likely not worth optimizing. On the other hand, leaders are quite satisfied with their advanced analytics capabilities, though they clearly have a bias toward continuous improvement. See *Figures 5 and 6*.

Defining our terms: survey methodology

Leaders vs. laggards

Leaders: Organizations in the top third in bottom-line profitability and new product introductions during the previous 24-month period.

Laggards: Organizations in the bottom third on those same measures during the same time period.

Advanced analytics: Complex predictive and prescriptive analysis requiring data sets to be combined and analyzed by statisticians or data scientists using sophisticated techniques and specialized software packages (e.g., SAS, SPSS or R); dashboards, reporting and general business analysis are not included for the purpose of the survey.

Figure 5:
Organizational data priorities

(sorted high to low by differences)

- Shared top priorities**
1. Improving confidence in the data
 2. Protecting the data
 3. Reducing cost of data management
 4. Ensuring freshness at point-of-use
 5. Connecting disparate data sources

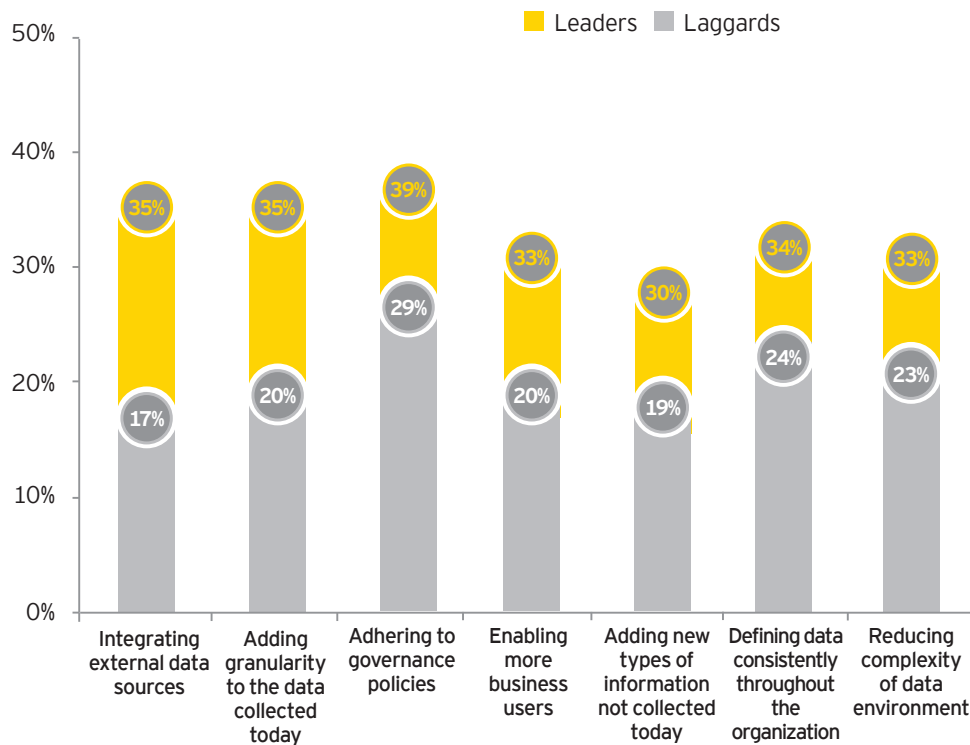


Figure 6:
Fully satisfied with current advanced analytics

(sorted high to low by differences)

Leaders see 3x more opportunity.

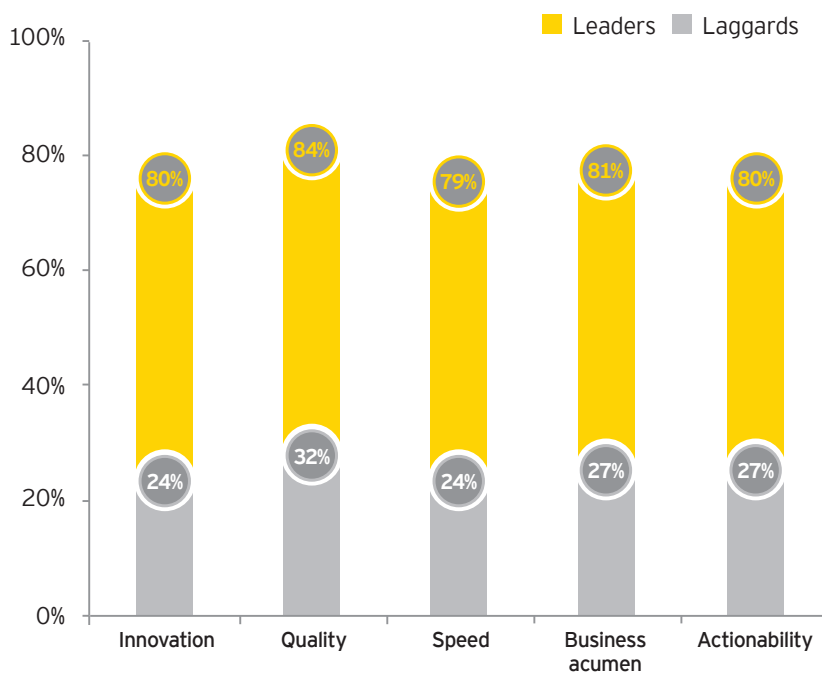
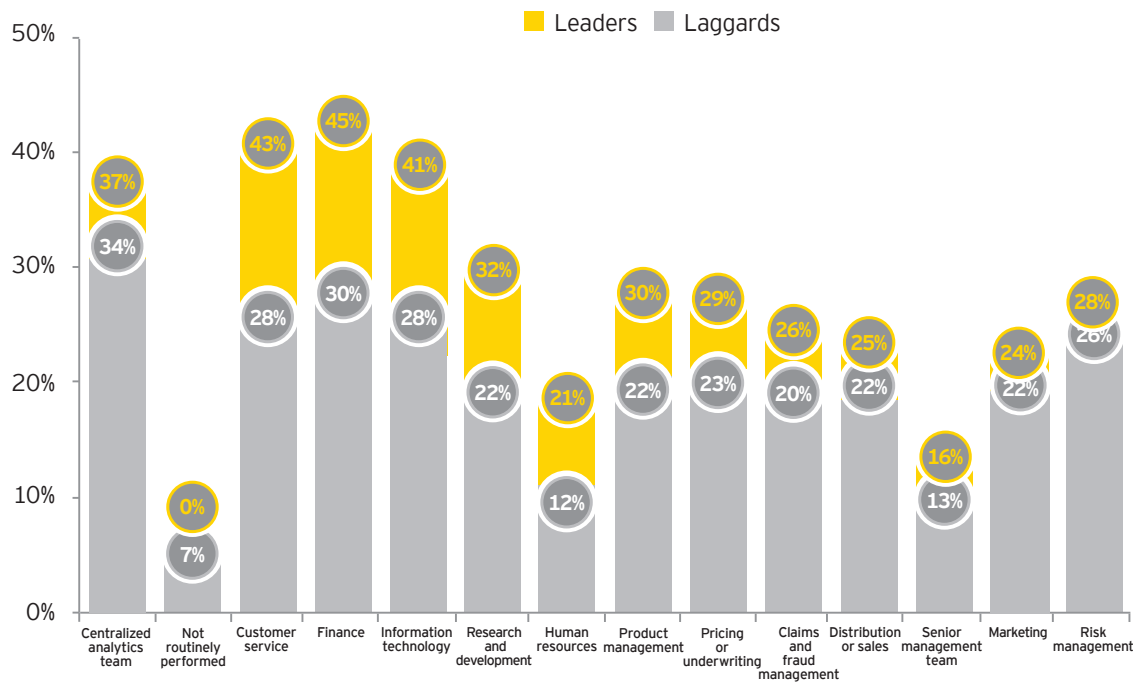


Figure 7:

Functions performing advanced analytics

(sorted high to low by differences)

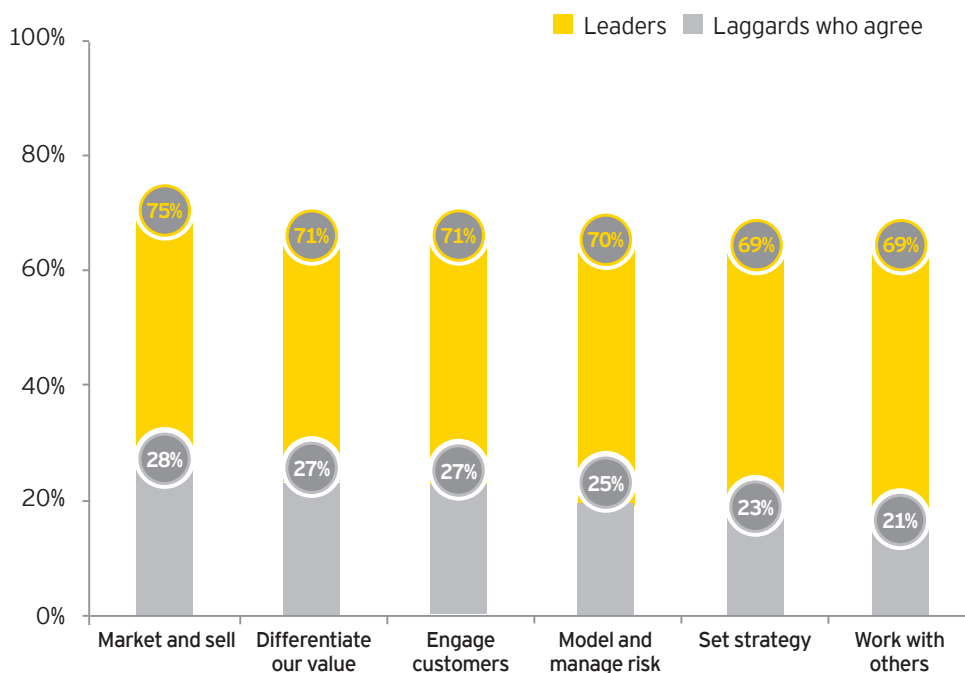


The survey results indicate that organizational and cultural factors may be driving leaders forward. Among top performers, advanced analytics commonly is performed throughout the organization, including within risk, marketing and sales groups. Advanced analytics expertise and capabilities are distributed, in other words, with functional leaders and groups challenged and expected to use analytical insights. See Figure 7. Interestingly, the creation of stand-alone analytics centers of excellence or centralized functions appears to lead to a false sense of security. It seems that leaders insist that analytics is “everyone’s job,” while laggards assign the responsibility to relatively few people.

Such a holistic and broad-based approach means leaders can monetize insights at industrial scale. This is perhaps one reason why leaders see more and deeper value creation opportunities than laggards do. Again, leaders see a role for new data in everything, from setting strategy to modeling and managing risk to marketing and selling. See Figure 8. Further, they are more open to partnering and collaboration, better able to act with agility in the marketplace and better at remaining relevant to customers.

Figure 8:

Where new data sources drive improvements



Who knows their customers best?

Survey respondents were asked to identify best-in-class firms in terms of customer knowledge and insights. It is no surprise that technology leaders dominated the top 10. The first insurer to make the list, Aegon, ranked 41st overall.

- ▶ 1. Apple
- ▶ 2. IBM
- ▶ 3. Google
- ▶ 4. Microsoft
- ▶ 5. Amazon
- ▶ 6. HP
- ▶ 7. Chase
- ▶ 8. Huawei
- ▶ 9. Dell
- ▶ 10. Samsung



Where insurers stand

The survey results confirm that insurers lag considerably behind their counterparts in other sectors when it comes to their ability to optimize long-term value, collaborate with customers for long-term benefits and leverage new insights. See Figures 9 through 11. As stark as this reality is, insurers must find a way to improve, and new data can provide a starting point for closing the gap.

Figure 9:
Insurers struggle to optimize long-term value

Able to define strategies that optimize long-term value of your product or customer portfolio

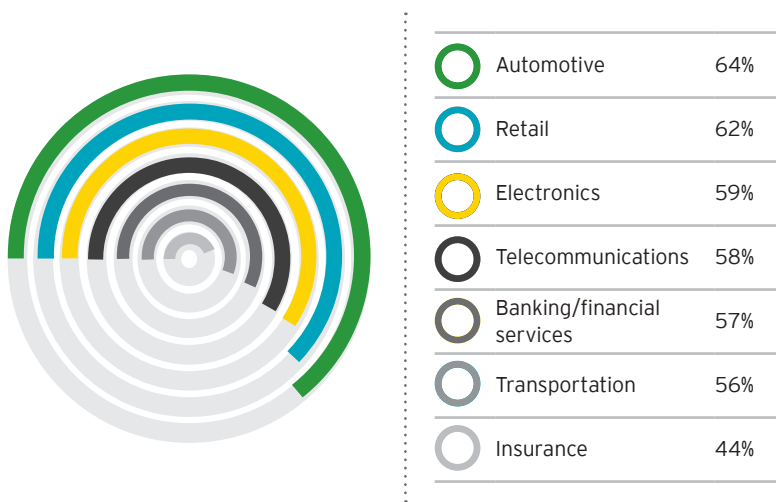


Figure 10:
Insurers are not as able to co-create and collaborate with customers for mutual benefit

Ability to co-create and collaborate with customers for mutual benefit

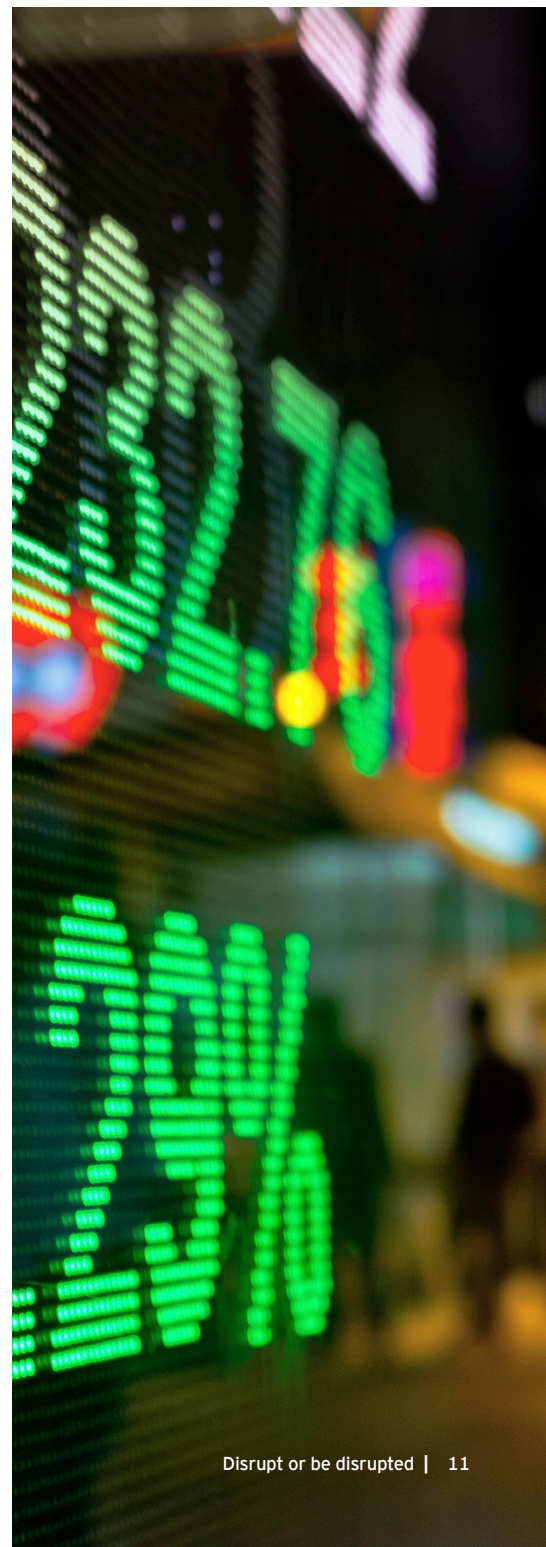
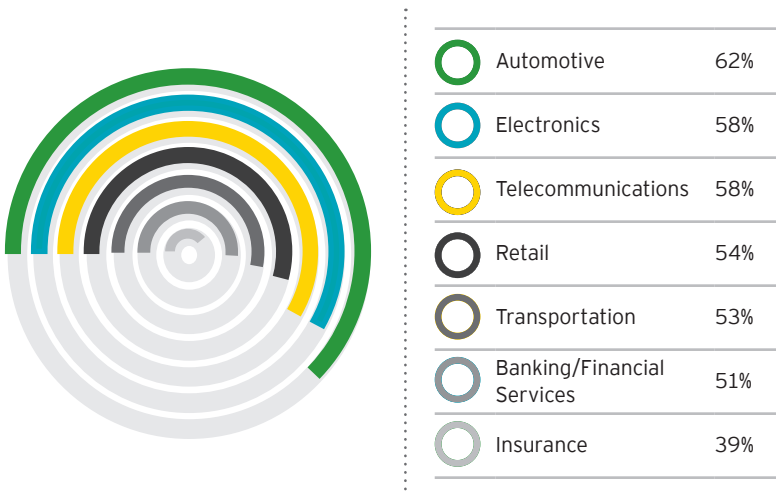
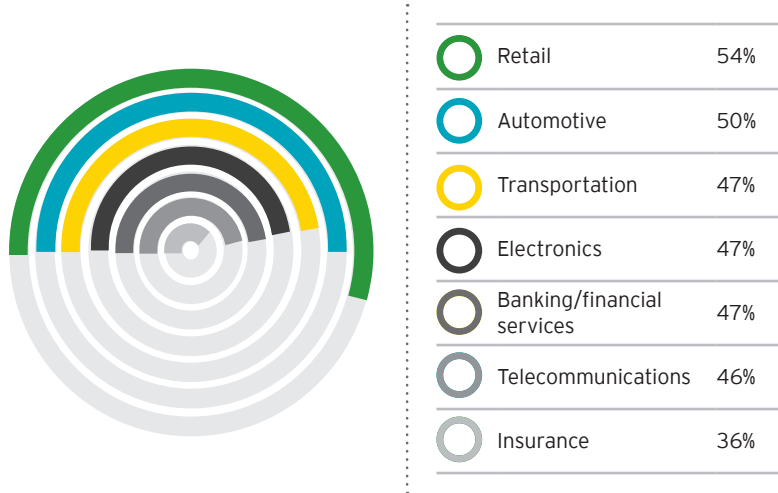




Figure 11:
Insurers are less able to utilize insights from new data sources to get customers more value

Ability to utilize insights from new data sources to get customers more value



Creating an advanced analytics culture

Implications

- ▶ New data is challenging legacy approaches to the way in which insights are derived and leveraged
- ▶ Ingestion of new data is taxing traditional architectures and creating hurdles in an effort to communicate value

Actions

- ▶ Think about the new questions that need to be asked and answered
- ▶ Create focus on layering insights back into business as usual
- ▶ Second-guess old architectures and drive simplified approaches
- ▶ Create mechanisms for managing change and encourage test and learn pilots

Part 3:

Now what? Defensive and bold actions for the next generation of insurance leaders

Given insurers' lagging position, the critical question is how to move forward. At a macro level, sensor data will help insurers address their top priorities. According to survey respondents from the insurance industry, profitable growth is the first item on the strategic agenda, cited by 37% of respondents as one of their top two business priorities. See Figure 12.

Innovation has become a baseline expectation. Sixty-six percent of respondents feel pressure to innovate today, while 75% of respondents feel pressure to deliver innovation within the next three to five years. See Figure 13. This reflects the

increasing consensus that the industry will look and operate differently very soon.

More relevant and meaningful customer interactions are a great place to start. In the short term, insurers can derive marketing and persistency benefits through different interactions with their clients. A test-and-learn approach to the implementation of wearables would help insurers prepare for the new wave of innovation based on this technology. The customer adoption of wearables presents opportunities to offer different services and undertake improved risk modeling. Increased and connected

data streams gradually bring the customer into focus, which enables better matching of products and services to their needs. For instance, insurers, supermarkets and health care companies all may offer loyalty bonuses or discounts on well-being services, healthy food, fitness programs and premiums.

Figure 12:
Top two business priorities

Q6. Indicate your organization's most important goals for the next 2-3 years. [Selected as first or second importance.] N=1,782

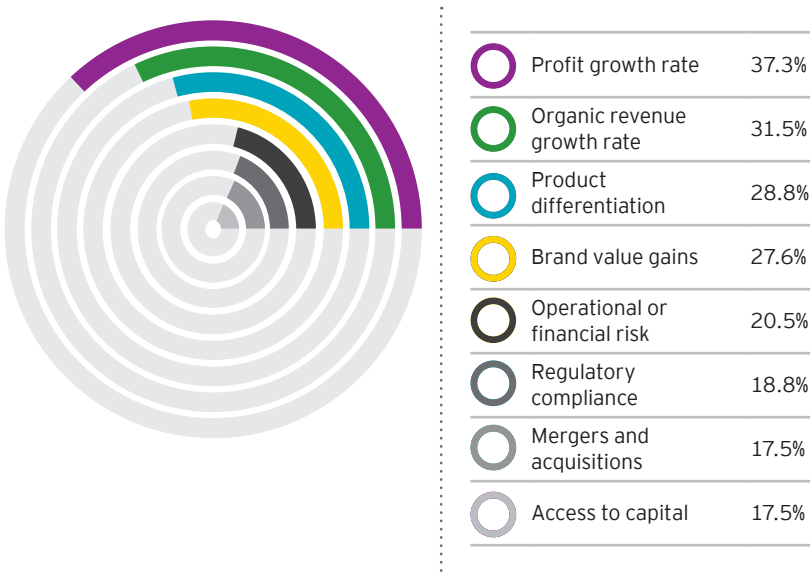
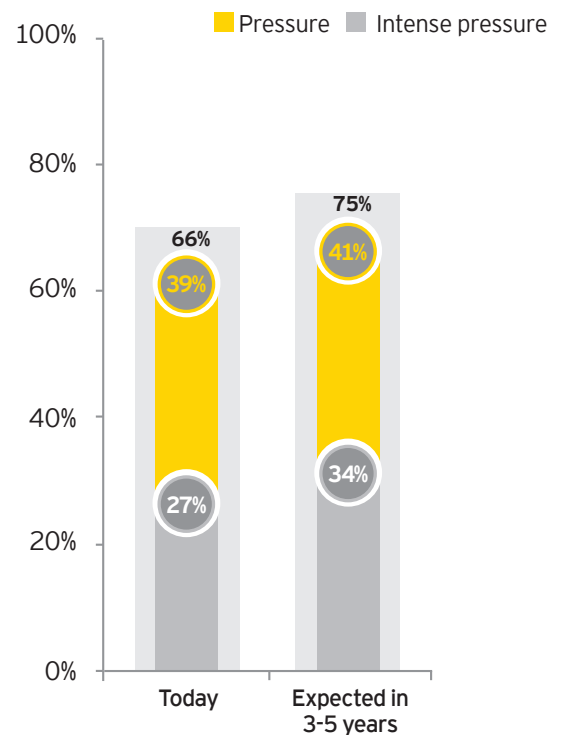


Figure 13:
Market pressure to innovate

Q20. To what extent is your organization under pressure (i.e., regulatory, competitive concerns, untapped market opportunities) to innovate with insight from new data? N=1,782



Innovation in action: Allianz1

Allianz Italy attracted 100,000 new customers in little more than a year after launching an innovative product in a market traditionally resistant to buying insurance. Allianz1 allows consumers to design and build their own policies based on 13 specific “building blocks” from P&C, life and health insurance lines. Through a digital interface optimized for tablets, consumers can see exactly what each policy component costs and how much coverage each provides. Telematic devices are used for automotive insurance and the streamlined process for sharing information eliminates a significant customer experience issue. Further, insurers can use the digital channel to adjust their coverages (adding a family member, for example). Allianz1 has been positioned as a “lifestyle” brand that provides financial peace of mind. The keys to success? According to Allianz executives, it was “revolutionizing the product architecture and pricing techniques and integrating P&C and life insurance” components.

Product innovation and marketing

The survey results highlight the broad-based tactical impact of new data types and sources, and those areas where new data can drive improvements. A large majority of respondents agreed that new data will:

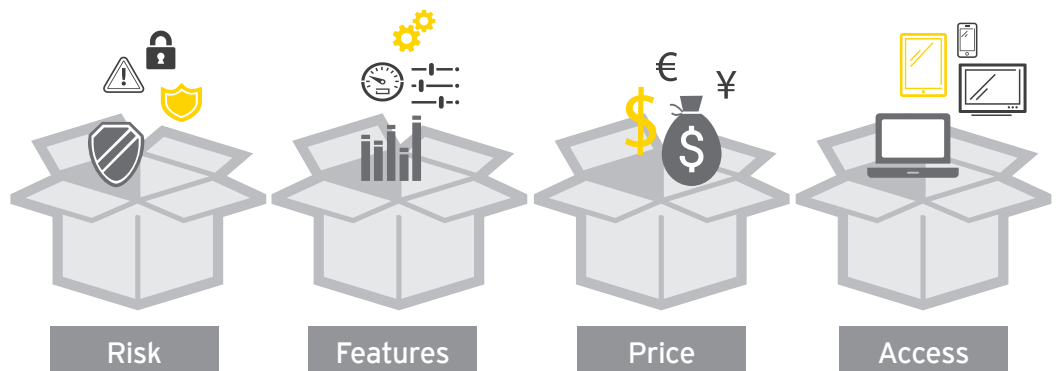
- ▶ Improve product innovation and feature bundling
- ▶ Lead to some customers getting less value (e.g., higher prices, fewer features) due to our ability to understand their true costs
- ▶ Lead to some customers getting more value (e.g., lower fees, better features) due to pricing and service personalization

In driving product innovation, insurers should seek to go beyond personalization to truly individualized targeting, based on the fully contextualized profiles that sensor data and associated models will create. More granular and predictive views of customers mean insurers will no longer be forced to generalize product offerings, with the same standard features, pricing and access for everyone. Instead, they can tier, target and “featurize” offerings based on the specific needs of much narrower and profitable segments – even “segments of one.” Such mass customization capabilities may prove to be the most revolutionary aspect of new data and emerging technology disruption in insurance. It allows insurance brands to differentiate in a market that has long been commoditized. See *Figure 14*.

Bundling is also critical for breaking down the barriers between lines of business and types of coverage. For instance, life and auto policies can be linked to increase insurers’ share of wallet with individual customers. See sidebar, “Innovation in action: Allianz1.”

Figure 14: The future of product innovation

“Componentized” product bundles based on tailored features and pricing





At the same time, insurers must be prepared to subtract features and eliminate discounts for those individual customers who are not likely to contribute sufficient premiums or profits. “Name-your-price” models have proven to be effective (and brand appropriate) in offering bare-bones products to a specific segment. With data-driven downselling, less may very well turn out to be more profit for insurers. Certainly it can balance the value proposition to benefit both customers and company. For an industry obsessed with upselling and cross-selling, the notion of “downselling” may seem illogical (especially to sales executives). However, the benefits are too compelling to ignore.

Beyond top-line growth, however, challenging and reassessing risk management practices and enhancing modeling practices based on new data can drive product innovation. When insurers have visibility into the cost and profitability of specific bundle components, they can offer high-value customers enticements to renew existing policies or buy more products. Riskier and less profitable customers will not necessarily be encouraged to make additional purchases. Over time, the stronger fit of features to risk can optimize the customer mix for profitability.

In the broader competitive context, the current marketplace bifurcation becomes less relevant when it becomes possible to profitably offer services to mid-market customers that were previously only profitable for high-end customers. Adverse customer self-selection will undermine late adopters’ profit margins and risk profiles – which may equate to a “going-out-of-business” strategy in extreme cases.

Product innovation	
Implications	Actions
<ul style="list-style-type: none"> ▶ More precise understanding of the cost of specific product features and components (along with rising consumer expectations) enables scalable personalization of products 	<ul style="list-style-type: none"> ▶ Focus on product enhancements, rather than additional channels, to drive innovation ▶ Develop “featurization” capabilities – the ability to bundle specific components, access and pricing in individualized products ▶ Be prepared to “downsell” to unprofitable customers ▶ Seek new insights to balance customer value with company profitability





Underwriting

Perhaps more than other functions, underwriters recognize the value of the aggregation of different data types. For instance, they understand intuitively how the convergence of different data types leads directly to increased precision in assessing risk. That is true both in the immediate-term context (e.g., making attractive policy renewal offers to profitable customers) and over longer time horizons (e.g., the duration of life insurance policies). And it is clear that effective underwriting is essential to furthering the “pay-as-you-go” revolution in insurance. See sidebar, “*Innovation in action: pay-as-you-go.*”

New data and emerging technologies can help underwriters address what may be the industry’s greatest challenge – pricing policies and estimating necessary reserves. Currently, backward-looking claims data and historical risk studies provide the basis for estimating future outcomes. New data and technology can help insurers track the evolution of risk over time (beyond initial underwriting cycles) and manage the emergence of that risk through new interaction points. Thus, there will be increased opportunities to deliver services to help clients manage evolving risk exposures.

Again, commercial insurers have led the way. In-vehicle sensors and tracking devices were installed in trucking fleets decades ago. Back-office capabilities for modeling the impacts of natural disasters are quite mature. Those advancements were prompted by the devastating impacts of Hurricane Andrew in 1992 and clearly paid off during the experience of Superstorm Sandy in 2012, where insurers carefully tracked the impact of the storm as it approached land and proactively alerted policyholders of imminent risks.

Sensor data are increasingly moving into the front office, especially relative to rating and product pricing, a very hot topic in underwriting circles. The value comes from the real-time insights and momentary data, which is most useful around specific incidents and also creates richer historical views. This value will increase over the long term as insurers gain deeper and more detailed understanding of macro changes in consumer behavioral patterns and the evolution of geophysical risks across neighborhoods or cities, or even relative to single structures. Here again, the increasing richness of data - layering wearable technology data with GIS streams, for example, and contrasting real-time data against historical patterns – enables deeper understanding of individual dimensions of risk, as well as the broadest possible views.



New data types and sources are also shaping the ongoing evolution of underwriting's role in the business. At top-performing organizations, underwriters now play non-traditional roles and facilitate innovation. Depending on the specific activities, they act, in effect, as decision scientists, sales executives or customer advocates. Consider a few scenarios:

- ▶ In developing new products, underwriters help define core elements – including relevant rules and pricing frameworks – that are necessary to build standardized product architectures from which tailored offerings for specific market niches can be efficiently launched.
- ▶ Through constant monitoring of customer exposures via sensors, underwriters can recommend real-time pricing and policy term modifications to optimize insurance protection and “elasticize” premiums.
- ▶ Underwriters can model the impact of new health and well-being services to manage mortality and morbidity risk over time.
- ▶ The ongoing evolution of predictive modeling, supported by more powerful data aggregation, allows underwriters to seek finer levels of granularity in “what if” scenario analysis, as well as transactional model development.
- ▶ Underwriters seek sales opportunities through integrated marketing and sales platforms with both internal and external data feeds, such as real-time news, social media updates and market research.
- ▶ They can help meet rising consumer expectations by continually searching, interrogating, analyzing, packaging and delivering data to account teams, with the objective of keeping everyone current on the insured's business events and activities.

Again, as much as any other functions within the enterprise, underwriting is poised to experience considerable disruption with the onset of sensor data.

Innovation in action: pay-as-you-go

If insurers are to individualize products and make “segments of one” a reality, they must develop more flexible and transparent products, as well as dynamic pricing and payment capabilities. Usage-based insurance (UBI) and “pay-as-you-go” models are rapidly expanding beyond proof-of-concept experiments and gaining traction with buyers. In fact, there are an estimated five million active UBI policies in 35 countries around the world. The base is low today, but the growth prospects are bright. In fact, EY estimates that UBI policies will reach 15% market penetration by 2020 in Europe, Asia and the Americas. That is very good news for insurers, given that UBI can reduce claims costs by up to 40%, policy administration costs by up to 50% and substantially reduce acquisition costs.

Underwriting	
Implications	Actions
<ul style="list-style-type: none"> ▶ New data sources will enhance the value of existing historical data sets, as well as previous investments in technology and the modernization of underwriting ▶ Underwriters are playing a larger role in product design and sales 	<ul style="list-style-type: none"> ▶ Combine different data sets (e.g., GIS and wearable technology) to enhance modeling capabilities and generate richer insights ▶ Unleash underwriting leaders and teams to contribute to the product design innovations, such as modular and customizable product architectures ▶ Embrace advanced analytics and data science programs as a means to attract talent

Innovation in action: Australian financial well-being

The Australian Financial Health Index (AFHI) forms a core component of EY Wellbeing, a well-being program developed by EY that aims to raise awareness and empowers workers and citizens to understand their financial needs at different phases of life and “prepare for the best.” The EY Australia member firm worked with financial services leaders to build a comprehensive index of financial well-being and educate consumers on their financial needs at different phases of life. Beyond increasing consumer awareness, the objective is to align product offerings to the market needs for financial management, retirement savings, investing and preparing for the unexpected. As such, it positions insurers and other financial services companies to do well by doing good.

Life insurance

The traditionally intrusive and lengthy underwriting process for life insurance is ripe for automation and streamlining. This is particularly true given the long track record of group underwriting and general comfort level of dealing with broad swaths of demographic data, and because sensor data provides the means to answer a lot of the questions from yesterday’s paper-based application forms. In taking the first steps with new data, life insurers are focused on attracting millennials and younger customers, as well as on policies with lower face amounts. Wearables are a powerful new tool for insurers seeking to increase their relevancy to this emerging cohort of buyers.

One potential scenario: life insurers conduct limited preliminary underwriting and then offer wearable technology early in the customer relationship for ongoing risk profiling. The idea is to get new and younger consumers in the door, offer some component of pay-as-you-go to fit their budgets and offer value in the form of healthier living (not just downside protection). The end goal is to build a strong long-term relationship. In this sense, life insurance product design may be transformed through rating adjustments and discounts tied to the quantifiable demonstration of healthier lifestyles.

The opportunity for life insurers to strengthen customer relationships by meeting changing consumer needs is also worth mentioning. For instance, there is strong growth potential for those insurers who are able to automate retirement planning processes and offer simpler and more affordable products designed to generate retirement income for the middle market of retiring baby boomers. The key for insurers may be to “do well by doing good” – that is, meeting the pressing societal need for more retirement income in the mass market. *See sidebar, “Innovation in action: Australian financial well-being.”*

To make this a viable and scalable business, insurers must generate more precise insights into their customers’ life events, while also providing education about their options and income needs. Further, they must convince consumers to share financial information if they are to achieve the necessary innovations in product design and distribution.

Life	
Implications	Actions
<ul style="list-style-type: none"> ▶ New data can streamline the life application process and lower the barrier to entry for younger customers 	<ul style="list-style-type: none"> ▶ Develop the transparent and flexible product structures and dynamic payment capabilities necessary to support usage-based-insurance and “pay-as-you-go” models ▶ Seek ways to engage customers based on their needs (rather than current product portfolios)



Claims

Considering the relatively low frequency of claims events and small percentage of customers involved, claims is unlikely to be in the vanguard of adopting sensor data and other new data types. However, there are several important implications to consider, both in loss prevention and in claims management or servicing.

In terms of claims prevention, in-home sensors can monitor for fire, wind and water damage. In-vehicle sensors can also be useful in providing warnings in case of dangerous driving patterns. Within group health insurance, the discounts offered to employees who monitor their activity levels and heart rates could be considered a claims prevention program. Increasingly, fitness monitors may feature in officer-and-director insurance. Currently, insurers are seeking to quantify the economic impact of these and other claims prevention measures.

Looking at commercial lines, insurers already offer sophisticated capabilities in tracking adverse weather patterns and advising customers to take precautionary measures (e.g., re-routing shipments of goods or closing offices). Sensors can also help large employers gain better insight into their risk of employee liability and workers' comp exposure, as well as how their buildings and facilities are used.

Cybersecurity is another area where insurers could use real-time data feeds and monitoring to do more than simply indemnify the risk of data breaches and help corporations actually prevent incidents. Corporations are likely open to sharing more data with insurers in exchange for discounts on cybersecurity policies or other benefits.

There are also data-driven opportunities related to incident management and claims service. Insurers may proactively offer towing or deliver "loaner" vehicles in the event of an accident, rather than just covering these costs. Similarly, they could provide accommodation and arrange transportation in the event of significant damage to a home.

Still, it is worth asking if customers want or expect insurers to do much more than notify the fire department if sensors detect a sudden and dramatic increase in temperatures. The makers of smart thermostats and appliances, as well as home security firms, may be useful partners for insurers, since they offer complementary or overlapping services. Even in the context of claims, where adoption has been slow, it is clear how sensor data can serve as an engine for service innovations and for enriching the customer experience.



Claims	
Implications	Actions
<ul style="list-style-type: none"> ▶ New data sources and type should be focused on both loss prevention and incident management 	<ul style="list-style-type: none"> ▶ Align claim prevention strategies to customer-facing programs (e.g., lower group health rates for employees wearing fitness monitors) ▶ Offer enhanced services to the right customers in the aftermath of incidents

Part 4:

The road ahead: forming the plan and taking action

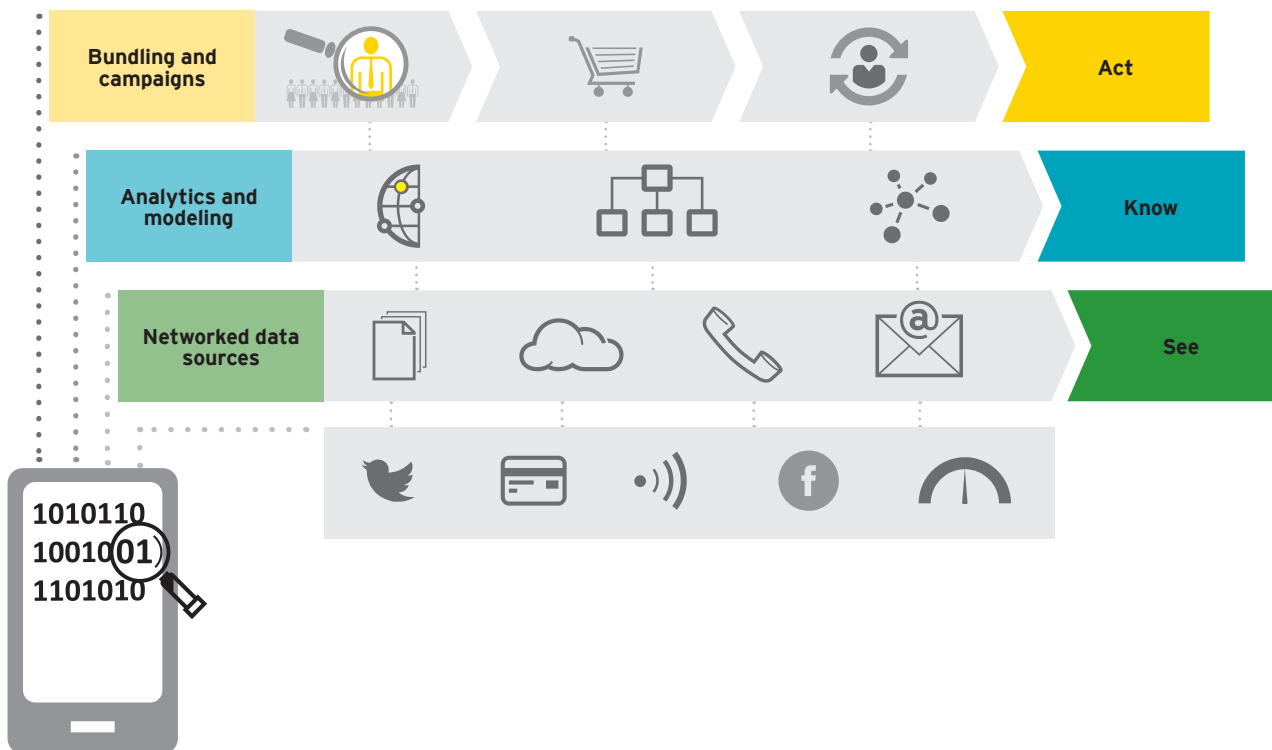
Historically, the insurance industry has been reluctant to embrace transformational change, even when faced with significant external threats. Some of the barriers are cultural and organizational, while others are technological or operational. But the calls for transformative change in the industry - which come from both forward-looking executives, as well as analysts and pundits - have grown more intense, with data-driven disruption looming on the immediate-term horizon.

First the good news: The survey results confirm that senior leaders recognize the profound impacts and transformational nature of sensor data. It is fair to say that there is increasing recognition of competitive threats from new players, whether they are world-renowned technology leaders, hedge funds and capital providers, automotive companies, health care organizations or dynamic start-ups. Although the potential is significant, insurers are struggling to operationalize sensor data.

The industry's significant progress in terms of piloting should be acknowledged. But experimentation will not be enough. Yes, pilots make sense, but small-scale "science projects" must give way to big commitments, significant investments and cultural change. Consider the technology barriers. Many large enterprises remain constrained by legacy systems, despite their openness to receiving and using new data. Indeed, there is scarcely an actuary, claims leader, marketing or sales executive alive who doesn't want more data. Significant numbers of data scientists are already in place but in short supply. Current systems simply cannot handle the variety and volume of data necessary to transform critical operations.

Similarly, it is no longer enough to merely generate insights; insurers must integrate them into "business as usual" operations and, ultimately, monetize them. In this sense, an "all-in" mindset relative to new data is necessary to compete among the next generation of insurance providers.

Figure 15:
Monetize the data and insights with targeted features and pricing





Engage customers to help formulate your data strategy: All insurers, regardless of product portfolio or operational footprint, should directly engage their customers to learn their preferences and willingness to interact differently based on sensor data. As EY's *2014 Global Consumer Insurance Survey* concluded, the opportunity is ripe for insurers to enrich and deepen their customer relationships. Sensor data must be a lever for overhauling the value proposition in ways that speak directly to changing customer needs. Thus, insurers must identify the optimal pricing approach for customers willing to share data via sensor-based technologies, and understand whether insurers prefer dedicated devices or mobile apps for sharing data.

Start solving for technology – partner, develop or takeover?

Because of legacy system limitations and the variety and volume of data in question, having the right technology strategy is critical. An overall ecosystem approach, rather than discrete software or “point” solutions, is undoubtedly the right approach for this new era. Such a holistic environment will incorporate both internal and external data sources, and both “live” and historical data feeds, proprietary models and real-time analytical outputs. See *Figure 15*. The goal is to enable more rapid and focused action across the board, from analyzing risk and pricing products to making retention offers and servicing accounts.

With so many new data sources, very few companies could build a fully functional data ecosystem on their own. Thus, insurers must find the right partners and focus on integrating external data sources and establishing the right governance policies.

“Err on the side of share”: It is crucial that insurers look beyond conventional data management approaches, which may greatly limit the upside of investments in new data. Perhaps the biggest shift is away from centralized data control, which is no longer necessary as more companies – and indeed entire industries – have reached the conclusion that 360-degree customer views are impossible. Instead, highly contextualized 90-degree or 180-degree customer views are sufficient to drive better outcomes in specific interactions.

The logic is simply this: if insurers can get the data they need when they need it, then they don't have to own it. That is especially true if the data they can access from third parties is of richer quality, increased granularity and greater accuracy than the data insurers have already.

Another benefit to consider: reduced exposure to risks with data ownership (chief among them liability in the event of a data breach). Thus, insurers must err on the side of sharing, rather than owning, data outright.



Conclusion

Move forward or move on

Test and learn about the consumer behavior that would be the most valuable to influence. Identify existing assets that can be enhanced and where competitive advantages can be furthered through the use of new data. Understand the options in partnering, acquiring or building your own capabilities in leveraging new data streams.

These are the essential steps on the road ahead for insurers. As with any disruptive trend, a balance must be struck between formulating the right strategy and taking action. Insurers, with their traditional risk aversions and reluctance to change, would be well served in cultivating a bias toward near-term action that befits the urgency of market changes in this new data-driven era.

Further reading:



Health Insurer of the Future



2015 Retail Life Insurance and Annuity Executive Survey



Global Consumer Insurance Survey 2014



The future of underwriting







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