OCTO

Issue 3

Digital Transformation Through Connected Insurance

In this issue

Gartner

Introduction

Gartner forecasts the number of connected things will exceed 25 billion across consumer and business applications by 2020. IoT devices generate massive amounts of data about human behaviors and health, home safety and security, vehicle usage, physical asset utilization, and more. Almost every one of these connections could be attached to an insurance policy.

The explosive growth of IoT devices and the benefits afforded by IoT to insurance necessitates a connected insurance strategy. Connected insurance isn't a future state, as Figure 1 shows, on page 3, insurers are using IoT today to improve risk management, claims management, and customer engagement.

Risk management: Traditionally, insurers have used proxy data to identify the risk of loss for an asset. The internet of things (IoT) gives insurers access to real-time, individual, and observable data on an asset's (or person's) risk of loss. This data is directly actionable for risk pricing and mitigation. By identifying actions or behavior that are causative of risk and leveraging IoT sensors that monitor these behaviors, insurers can create algorithms that tie observed behavior directly to pricing models. Insurers can similarly leverage this data for risk mitigation by providing timely and specific feedback to insureds rewarding safe behavior and warning of risky behavior.

Claims management: The claims management function has relied on subjective policyholder reporting and after-the-fact analysis regardless of business line. IoT allows insurers to detect loss events in near real-time through dedicated event detection sensors (e.g. connected smoke detectors and telematics-based crash detection) or through behavior monitoring sensors and advanced analytics (e.g. cardiovascular event detection through a wearable sensor). This use of IoT sensors for claims management, connected to an insurance IoT platform, enables insurers to mitigate losses, combat fraud, decrease claim settlement time, and improve policyholder satisfaction.

Customer engagement: Unlike a retail bank, most policyholders only interact with their insurer when they file a claim and during policy renewal. Nearly all insurers struggle to engage with their policyholders in a positive, frequent, and constructive way. This lack of engagement contributed to the commoditization of personal insurance. Low engagement, combined with highly price-elastic customers, leads to customer churn that costs the insurance industry almost half a trillion dollars per year. Low retention rates and the high cost of new customer acquisition are a major business challenge across the entire insurance industry. IoT can help insurers engage with customers, reduce acquisition costs, and improve retention rates.

Regards,

Andrew Lee
Head of Market and Sales Intelligence
Octo Telematics

Figure 1. The Growth of Connected Insurance

	Auto	Home	Life
Use cases	Risk pricing Claims management Customer engagement	Claims mitigation Claims management Customer acquisition	Risk pricing Claims mitigation Customer acquisition
Who is using it?	Most top 20 US insurers 100+ insurers globally	15+ insurance carriers in the US	< 10 insurance carriers in the US
Impact	Up to 14 pp combined ratio improvement	~10% reduction in claims costs	~30% reduced claims costs

Source: Octo Telematics

Connected Auto Insurance

Auto insurance

Improving risk assessment

Insurance telematics provides a step-change improvement in risk assessment over traditional factors that are largely proxies for how, how much, when, and where vehicles are operated. Insurers can combine granular telematics data with contextual, policy, and claims data to develop a score which is highly predictive of risk. Done correctly, insurers can create a score that provides double-digit lift, optimizes the lift above and beyond traditional factors, and identifies factors that cause vehicle accidents.

One 2018 study which compared the level of predictiveness of classical (non-telematics) risk models against telematics-based and hybrid (telematics and traditional factors) models showed the classical model ranked least predictive. Progressive Insurance, the US leader in UBI, released findings stating that driving behavior predicts accidents more than two times over traditional risk factors. Milliman has similarly announced a telematics-based risk score that is up to 6 times more powerful than using traditional factors alone. Octo's risk score, the DriveAbility™ Score, has been proven to provide 10-12 times lift to score predictiveness.

Risk mitigation

A review of relevant studies on traffic accidents by Stanford Law School suggests that greater than 90 percent of all vehicle accidents are caused by human errors and deficiencies. Yet most drivers rate themselves as safer than average. Claims mitigation – critical for driving down an insurer's combined ratio – requires timely and specific education and training to improve driver safety. Vehicle telematics gives unprecedented insight into driver behaviors and habits, allowing insurers to detect risky habits in near-real-time and provide feedback and education on the specific behaviors exhibited by the policyholder. In one study by the Insurance Research Council, 56 percent of participants said they had made changes in how they drive after installing a telematics device. Another study found that safe driving increased by as much as 30 percent with the use of a telematics app.

Telematics risk mitigation mechanisms

- **Short- and long-term behavioral feedback on policyholder behavior:** Immediate alerts, daily reports, and driver scoring provide feedback to telematics users, allowing drivers to understand how their driving habits impact safety, and respond accordingly. Immediate feedback helps drivers change their behavior, while trend reports and driver scoring help reinforce behavior change and improve habits over the long-term.

- **Incentivizing safe driving:** Insurance discounts offered for safe driving incentivize improved behavior, helping to reinforce gains made in safety. Gamification flips the focus of driver improvement from reactive feedback to proactive. By incentivizing drivers toward safer behavior – whether the incentive is a coupon, reward, or digital badge – telematics can help people drive safer immediately, without the need to wait for a critique of poor driving.

- **Reducing distracted driving:** According to AT&T, 70 percent of drivers use their smartphones while driving. Sixty-four percent of all road accidents in the United States involve cell phone use. Telematics-driven mobile apps can identify when someone is driving and restrict inbound texts, calls, or other cellphone behavior to reduce distracted driving. Telematics devices can also detect the symptoms of distracted driving, highlight these events to the driver, and provide awareness of the safety impact of this behavior.

Claims Management

The use of auto insurance telematics data beyond risk assessment is a new concept in the US market. In Europe, insurers have been using telematics data to improve claims outcomes for decades. Insurers in the US have recently started leveraging their investment in telematics technologies to improve claims. Claims outcomes have possibly the greatest impact on retention and referrals over any other factor. A report from J.D. Power shows that "satisfaction with the claims experience impacts customer retention and referrals." Eighty-three percent of those who had the best claims experience reported they "definitely will" renew their policies. Eighty-four percent would recommend their insurer. For those that had the worst claims experience, only 10 percent would renew with or recommend their insurer.

From a purely financial perspective, the impact of telematics on claims is well-documented:

- 10 percent reduction in total claims costs

- 60 percent or greater reduction in time to settle claims

- 20 percent reduction in claims frequency
- 80 percent reduction in fraud
- 30 percent reduction in lawsuits
- 30 percent reduction in whiplash claims paid

Octo's partners have reported double-digit improvements in combined ratio with mature programs leveraging telematics to improve claims. Similarly, insurers such as Zurich, Ageas, and Co-operative insurance have reported using telematics data to reduce claims costs by 30-60 percent.

Customer Engagement

In auto insurance, telematics is leveraged primarily for two customer engagement uses: driving feedback and behavior change, and customer acquisition and retention.

Individualized and personalized driving behavior feedback creates opportunities for insurers to incentivize safer driving behaviors and create regular micro-engagements with policyholders. Regular feedback, paired with incentives, can help insurers create a positive relationship with policyholders they previously did not have.

Telematics is also a strong tool for customer acquisition and retention. For example, a try-before-you-buy (TBYB) telematics product can remove hurdles to customer acquisition by providing a commitment-free channel to attracting safe drivers. TBYB programs have been shown to be more efficient acquisition tools than price comparison websites, specifically because of their risk predictive capabilities. TBYB programs allow insurers to offer customers value-added propositions (such as premium discounts, driver coaching, and gamification) in a fully digital customer experience.

The worst-case scenario for an insurer is to lose a policyholder directly following a loss event. Consider auto insurance where the average annual premiums paid is around US$1500, the average cost of a property damage claim is around US$3638 and acquisition costs range from US$500 - $800. Losing an average customer following a claim, even after three years of premiums would barely cover the cost of the claim and acquisition. By leveraging near-real-time event detection through event stream processing and post-event analytics, insurers can better retain customers after a loss event. Example opportunities include:

- Through streaming event processing, insurers can identify a loss event in near-real-time and offer loss mitigation services such as emergency response services. These services provide peace-of-mind during stressful times for policyholders and can help drive up retention rates.
- After an appropriate period post loss detection, insurers can proactively reach out to policyholders to begin the claims process. By being proactive, insurers can help policyholders feel valued, improve claims settlement times, and improve retention.
- With post-event analytics, insurers can glean critical insights into the cause and severity of loss for use in damage estimation and fault identification. With this information, insurers can begin the claims process and reduce the amount of input required from a policyholder. Shorter settlement times, more accurate settlement amounts, and a better claims experience can all drive up retention.

Source: Octo Telematics

Connected Homeowner's and Renter's Insurance

Homeowner's and Renter's Insurance

Consumers are already investing heavily in smart home technology to make their homes safer and more convenient. Insurance carriers can leverage this trend to help policyholders mitigate risk across a series of critical risks in the home, including:

- **Water damage:** With non-weather water damage making up 20 percent of total claims, and claims costs averaging around US$**9000**, insurers will find that water flow sensors can provide a low cost method for monitoring and preventing claims. Smart water flow monitors can detect leaks in a home's plumbing, alert the homeowner, and in many cases shut off water flow to affected pipes. One study by the **ACE Group** predicts that more than 90 percent of water damage claims could be avoided through the use of automated leak detection and mitigation systems.

- **Fire damage:** Fire-related claims are the most expensive homeowners' insurance claims, responsible for nearly one quarter of total claims costs. Three of every five **home fire-related deaths** resulted from fires in homes with no smoke alarms (38 percent) or no working smoke alarms (21 percent). Smart smoke and carbon monoxide detectors have been developed to address the two greatest challenges with traditional alarms: off-premises notification and alarm status verification. BI Intelligence **estimates** a home equipped with a connected smoke detector that automatically alerts the fire department could potentially cut an insurance payout by an average of US$35,000.

- **Property theft and damage:** The average cost of a property-theft related claim is around US$2250. The chances of a home burglary rise by 300 percent when a home has no security system. One example of a connected home insurance program is American Family's partnership with Ring. American Family offers a US$30 discount on Ring's video doorbell products. If the homeowner installs the doorbell, they become eligible for AFI's Proactive Home Discount. In the event of a burglary, Ring will reimburse the homeowner's policy premium.

Roost Telematics has partnered with leading North American insurers to successfully launch home telematics programs focused on fire and water damage claims mitigation. Roost has reported that their sensors and automated reporting lead to 5-15 percent reduction in claims for their insurance partners.

Customer Engagement

Connected insurance can provide both the analytical base and the digital channels needed to engage with policyholders effectively. IoT data allows for more effective personalization across all interactions insurers have with their customers: from sales and marketing to customer service and claims. IoT adds an additional layer of location and events-based data insurers can use to engage with customers in the moments they are needed most. Examples include:

- During or after an event – after a fire, leak, or break-in is detected, insurers can offer customer care calls, emergency assistance, or automated claim reporting.

- Time and usage – via small changes in IoT data reporting, insurers can provide recommendations on vehicle maintenance.

- Location – based on the location of the policyholder's property, insurers can use digital channels to provide insights into risky weather events and help mitigate risk.

With the right data sets, insurers can also identify behaviors that signify buying intention, such as moving, having a child, or shopping for competitive insurance pricing. By identifying buying intention, or preempting it, insurers can offer appropriate risk-based discounts to retain low-risk policyholders, offer better-fitting insurance products, or move a high-risk policyholder off their book of business for high-risk policyholders.

Source: Octo Telematics

Connected Workers' Compensation Insurance

Workers' Compensation Insurance

Risk Assessment and Mitigation

Insurers often work with employers to incentivize better employee health (through gym memberships and workplace health programs) and improve worksite safety (through training). Wearable sensors provide employers and insurers with a significant new opportunity to mitigate worksite risk and improve employee health.

- **Worksite risk mitigation:** Wearable sensors provide employers with the opportunity to detect risky worksite behavior (such as poor lifting behavior), provide on-the-spot feedback to avoid that behavior, and enable employers to monitor improvements in that behavior over time. One industrial corporation has leveraged wearables to reduce the number of high-risk lifts performed by workers in a pilot program by **80 percent**. IoT-driven behavior change can reduce workers' compensation costs by more than **20 percent**.

- **Lifestyle risk mitigation:** Wearables provide insurers and employers with the insight they need to monitor health and wellness program adherence. Insurers can tie gym reimbursements to workout frequency and severity. Employers can monitor physical rehabilitation via IoT sensors to ensure injured workers are completing the programs their doctors prescribed. Smartphone-based IoT programs can similarly monitor drug rehabilitation program participation and help mitigate recidivism.

Claims Management

More than almost any other use, wearables provide the opportunity for employers and insurers to reduce worker's compensation costs through fraud detection and reduction. Workers' compensation fraud costs the US $7.2 billion annually, borne mostly by employers and insurance carriers. Wearables can be used to identify behaviors that indicate fraud such as employees working manual labor during recovery, missed or skipped drug rehabilitation meetings, detecting injuries that occur off job-site, and possibly even detecting disparities between reported job-related injuries and actual events.

Source: Octo Telematics

Connected Life and Health Insurance

Life and Health Insurance

Risk assessment and mitigation

The **costs** of care for hypertension, diabetes, asthma and other chronic conditions amount to 86 percent of the United States' $3 trillion annual healthcare spend. As employers bear most of the burden of this cost, preventing chronic conditions is critical to employers' bottom line. IoT devices can be used to detect health characteristics such as blood glucose levels, temperature, and heart rate and identify healthy behaviors such as sleep, exercise, and stress. This data can be analyzed to provide automated feedback that encourages healthy habits.

John Hancock recently announced that it would sell interactive life insurance policies that incentivize health behaviors through the optional use of a wearable device for policyholders of their life insurance Vitality product. The program is designed to incentivize policyholders to stay fit via rewards and discounts. The announcement came after a successful **pilot** in which participants:

- Lived 13-21 years longer than the rest of the insured population
- Generated 30 percent lower hospitalization costs than the rest of the insured population
- Took nearly twice as many steps as the average American
- Logged more than three million healthy activities including walking, swimming, and biking

- Engaged with the program approximately 576 times per year – compared to customers with traditional insurance, who engage with their life insurance company one or two times per year on average

Claims Management

Smart devices provide a unique ability to both detect a health event before it happens through leading indicators and to detect and mitigate the severity of an event. For example, a smart wearable device can monitor blood glucose measurements, notify the wearer if glucose levels drop, and provide doctors with trend data to help them understand how well their patient is managing their diabetes. Insurers can tie this type of monitoring to policyholder incentives and provide real-time feedback to improve chronic disease management outcomes. A similar smart wearable device that detects heart rate and temperature could be used to identify a heart attack, alert the insurer, and provide a mechanism for providing emergency services to thew policyholder. Wearable devices, with the right sensing capabilities, have been proposed to detect cancer, stress, diabetic emergencies, hypertension, asthma attacks, and many other chronic disease-related emergencies.

Across health-monitoring smart devices, insurers have the ability through real-time health monitoring to avoid claims, reduce the severity of claims, and improve policyholder satisfaction.

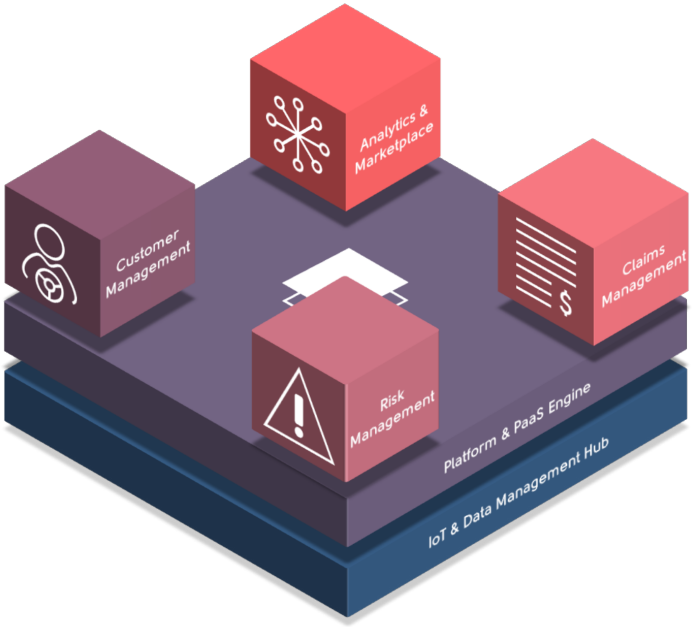
IoT is well positioned to help combat fraud in health insurance. Data on location and health statistics can give insights into what happened before, leading up to, and after an event causing a medical claim. Insurers can use this data to detect pain levels and combat drug-seeking behaviors, detect behaviors inconsistent with disability claims, and to shift liability from a health insurance claim to (or from) a workers' compensation claim.

Octo's Connected Insurance Platform

Octo's insurance IoT platform is custom built to help insurers effectively leverage IoT data within and across business lines. It blends the benefits of an end-to-end IoT platform with dedicated vertical use cases that span the complete insurance value chain. This unique approach is how we deliver solutions that are transforming the insurance industry.

Octo's platform includes pre-built use cases and digital channels to connect with, engage, and improve relationships with policyholders. By leveraging policy, claims, digital engagement, and IoT data, our platform can help insurers incentivize risk reduction efforts, improve processes that lead to increased customer satisfaction, and become an everyday part of policyholders' lives.

Figure 2: Octo's Connected Insurance Platform



Source: Octo Telematics

Each new connected insurance product and connected line of business adds new sensors, new applications, and new processes that carriers need to support (See Figure 3). Outsourced IoT point solutions can add additional complexity and missed value as critical steps in the process such as data collection, analytics, and logistics are managed by the vendor.

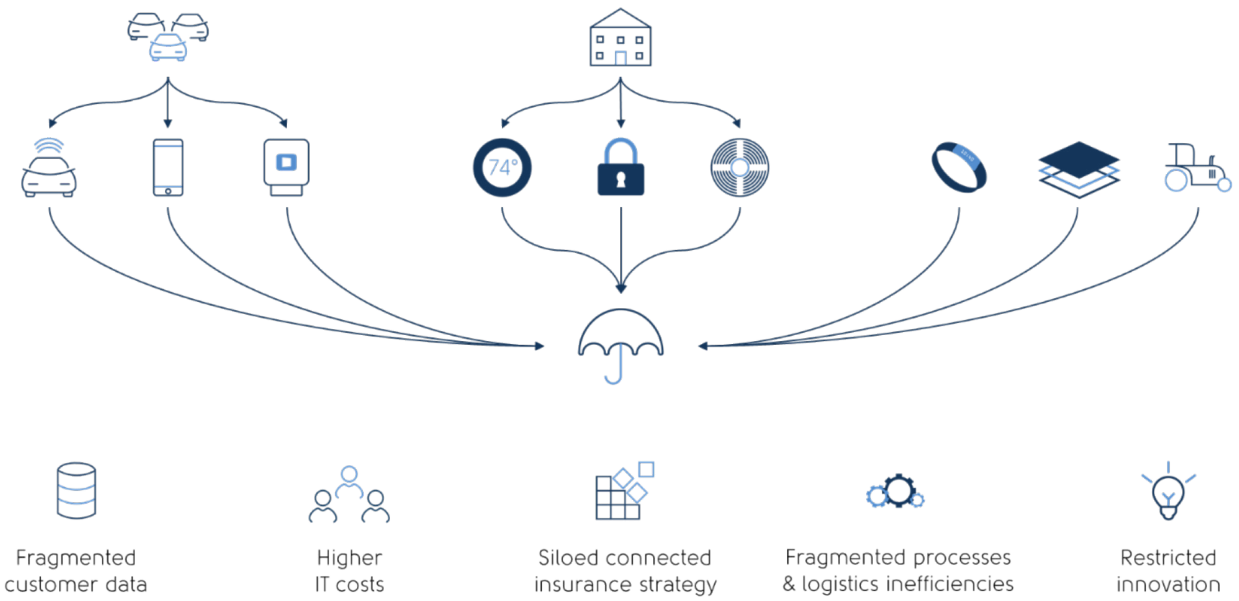
This fragmented approach to connected insurance can lead to:

- **Fragmented customer data** – Point solutions and business-line specific IoT strategy leads to data silos both within lines of business and between lines of business, minimizing cross-vertical benefits.
- **Higher IT costs** – Point solutions lead to the creation of additional teams to support connected insurance products within lines of business, leading to missed process and logistics efficiencies.
- **Siloed insurance IoT strategy** – Line of business-level connected insurance strategy restricts opportunities for cross-business line pricing, claims management, and customer engagement.
- **Process & logistics inefficiencies** – Each IoT source must be integrated into core systems as it is selected, leading to increased integration costs and increasing the cost of vendor switching.
- **Restricted innovation** – Data, product strategy, and process silos lock IoT data into individual lines of business, restricting cross-business line pricing, claims, and customer engagement innovations.

A true connected insurance platform addresses these challenges by being:

- **Cloud-based** – Built for the cloud, Octo's platform provides the flexibility, scalability, security, and efficiency you need for an

Figure 3: The Complexity of Connected Insurance



Source: Octo Telematics

enterprise-level solution, without the infrastructure cost.

- **Fully modular** – Each module can be leveraged individually or as part of the comprehensive platform, allowing you to leverage your in-house solutions or Octo's as needed.

- **Extensible** – Our partner ecosystem, APIs, and platform development tools allow you to extend the value of the platform as you explore new use cases and connect new lines of business.

- **Insurance-specific** – Our platform provides the power of a horizontal IoT solution and the insurance-specific applications needed to improve risk assessment, manage claims, and engage policyholders.

- **Sensor-agnostic** – New IoT-based products and connected lines of business add complexity to your device strategy. Octo's platform is fully device-agnostic, allowing us to ingest data from any source.

Through these characteristics, insurers can enable true digital business transformation in risk management, claims management, and customer management.

- **Risk management:** IoT data enables a step-change improvement in risk assessment over traditional factors. By combining the IoT data and advanced analytical capabilities provided by the platform with traditional factors and claims data, insurers can create new risk assessment models that are far more predictive than traditional models.

- **Claims management:** Insurance IoT is critical for claims avoidance, claim mitigation and improving claims outcomes. Near-real-time data processing enables claims event detection and proactive first notice of loss while advanced analytics allow for event reconstruction and fraud prevention. IoT data changes the claims paradigm, drives down costs, and improves customer satisfaction.

- **Customer management:** IoT data provides unprecedented insight into customer behaviors. With the right tools, insurers can leverage these insights to offer truly individualized products that stand out in the market. Powerful, behavior-based engagement tools allow insurers to create personalized interactions that reduce claim frequency, improve customer satisfaction and lead to higher retention.

Insurers typically use our connected insurance platform to:

- **Go to market with innovative insurance products:** Develop, deploy, and manage innovative IoT-based insurance products across lines of business. From home safety systems, to pet tracking, to auto telematics, IoT-driven insurance products elevate the insurance value proposition and add real value for policyholders. Octo's platform includes pre-built vertical use cases and tools to build your own.

- **Drive more profitable growth with insurance analytics:** IoT data enables the analysis of behavioral, contextual, and event data to create predictive models for the insurance industry. Our platform includes tailored analytical engines for risk assessment and claims management while also providing tools for custom business intelligence analytics.

- **Become a fully digital insurance with an enterprise connected insurance platform:** Our platform provides a 360° view of customers across lines of business and enables seamless communication across channels. This enterprise-level solution provides the foundation on which insurers can digitize their business. IoT-driven engagement tools such as mobile apps drive engagement, satisfaction, and loyalty.

- **Extend the connected insurance value proposition:** Octo's platform blends SaaS and PaaS models, allowing insurers to leverage their preferred tools, Octo's pre-built use cases, and the insurer's own custom intellectual property into a powerful engine to transform their business. Advanced platform analytics capabilities enable insurers to leverage data from core systems and Octo's platform for innovative new use cases.

As highlighted in Gartner's *Insurance CIOs Must Build an Intelligence Platform to Support Digital Insurance*, Octo's connected insurance platform:

- Enables enterprise intelligence that drives benefits across the entire value chain – in this case by enabling improvements in core business processes and outcomes through the power of insurance IoT

- Provides insights for data processes, supports automation, and delivers both decision accuracy and a single source of truth through platform tools and ecosystem partners

- Provides both best practice analytical reporting and powerful analytics tools that alleviates the need for core systems analytics while creating enterprise-level analytics opportunities

Source: Octo Telematics

Research from Gartner

Insurance CIOs Must Build an Intelligence Platform to Support Digital Insurance

To enable digital transformation, insurance CIOs will need to build digital business technology platforms that include robust enterprise intelligence capabilities that will fuel business processes and decisions across the value chain.

Impacts

- Enabling enterprise intelligence that will drive benefits across the entire value chain will require that insurance CIOs increase their IT investments substantially in 2020.
- To have a successful intelligence platform, CIOs will be required to establish a center of excellence that will supply data and insight for business processes, support automation and deliver both decision accuracy and a single version of the truth.
- The development of an intelligence platform will lessen the need to have analytics in the core system but necessitate that core systems be systems of record, not systems of innovation.

Recommendations

Insurance CIOs transforming insurance in an era of disruption should:

- Inventory all data and analytical assets across the company, sorting them based upon complexity and business value. Identify those that are needed but missing and begin to build a cost estimate for what is needed in both the short and long terms based upon the digital strategy that is in place and the future-state digital approach that is projected by management.

- Seek help to augment staff via partnerships with universities, ecosystem partners, insurtechs or external services providers. Document needed skills and build strategies with HR on how to acquire them. Identify which are needed in the short term while staffing is trained or hired and which are needed in the long term for skills not needed internally.

- When conducting RFPs for core systems, identify the minimum data and analytics requirements for those systems, comparing them to the enterprise analytics strategy and the data that is to be housed in the intelligence layer of the organization.

Analysis

As digital maturity increases in P&C and life insurers, many business and IT leaders seek new ways to build out new business models that will help them succeed in their local market. Many innovative insurers are building strategies to more effectively leverage intelligence across the value chain, becoming what Gartner would refer to as a data-driven or intelligent insurer. As part of this transition, IT leaders will need to build a foundational business capability to exploit data to help improve decision accuracy, to automate or innovate business processes and to implement machine learning, all to improve business outcomes. To achieve this, however, CIOs need to develop a strategy aimed at building and leveraging enterprise intelligence.

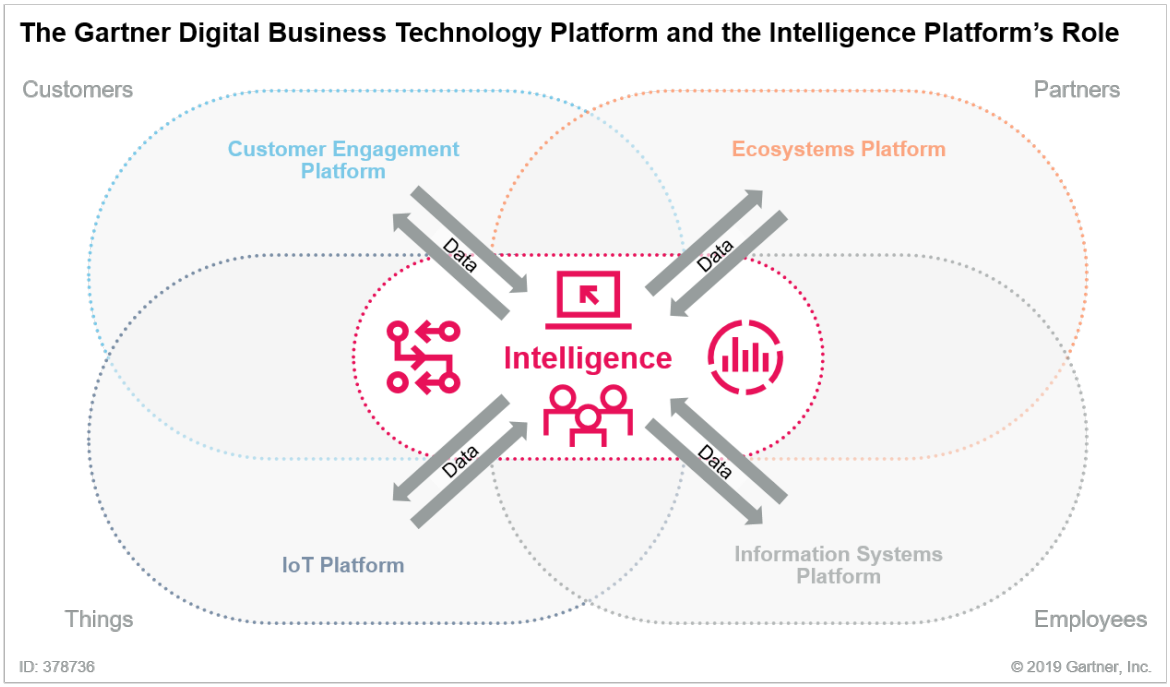
Today, few insurers have data mastery, or the organizational strategy and skills to effectively exploit data and drive such new value as data monetization. However, most will not achieve it. Gartner predicts that by YE22, 40% of digitally mature insurers will have achieved the data mastery necessary to allow them to dominate their markets. These companies will be able to leverage this capability to dominate their markets, challenging companies that cannot leverage intelligence for such tasks as loss prevention, risk management, personalization, fraud detection and automation. To be an intelligent insurer that effectively leverages data mastery for competitive advantage, P&C and life insurance CIOs will need to craft a plan to develop a digital business technology platform (for more information, see Figure 1). This platform will become the new technical foundation for business processes, spanning from marketing through underwriting and claims.

The heart of this platform is intelligence and must be developed. It cannot be bought off the shelf. This intelligence platform includes not just technology but also the people skills, organizational processes and data (including raw data, algorithm analytics and models) needed to support its operations. This model goes beyond just being an IT ambition; rather, it constitutes the vision for organizational transformation for digital success. There are large-scale technical components, though, of which the CIO must be aware. The intelligence platform must include such subplatforms as the analytics platform, the data management platform and the emerging data and governance platform.

This platform approach will be new and foreign to most insurance CIOs. CIOs must first understand what the platform is and its role in digital business success. It may be in opposition to existing IT roadmaps and strategic plans laid out for digital development. In most cases, insurers have large data repositories that are spread out across the organization and others that are inaccessible. However, most business leaders report that they cannot turn this into information. CIOs will need to work with their business counterparts to build a digital business technology platform (DBTP) strategy that specifically enables needed intelligence through new staffing, data, governance and technology approaches.

This note will review three impacts that the creation of a DBTP will have on insurance CIOs and how they should prepare for fulfilling this vision as intelligence

Figure 1. The Gartner Digital Business Technology Platform and the Intelligence Platform's Role



Source: Gartner (February 2019)

grows through new data acquisition, strategies mature and such new business models as the monetization of data emerge. This includes focusing on building enterprise intelligence and on the interrelations between the intelligence layer and the surrounding systems in order to provide a holistic view of information and the shift of intelligence as the center of the IT strategy (away from core systems) (see Figure 2).

Impacts and Recommendations

Enable Enterprise Intelligence to Drive Benefits Across the Entire Value Chain

Past Gartner CIO studies have found that analytics has become the biggest discretionary spend for a few years running. However, Gartner customers say that these investments are not enough, leaving gaps across the company where business units and functions are underfunded as well as staffing limitations as they face difficulties hiring advanced analytical and data science skills. There are many problems with the current operating model, including:

- Lack of IT spend to support the necessary intelligence requirements of the company. Overall, IT spending among insurers is static, dropping slightly in 2018 as the average IT spending per revenue went to 3.1%. Additionally, the study found that 65% of the budget went to "running the business" and 22% to "growing the business." That leaves only 13% of IT budget allocated to transformation. While projects around data and analytics would be in both the growth and transformation areas, that budget is shared with customer experience projects, legacy upgrades and other necessary projects.

Figure 2. Impact Appraisal for Insurance CIOs

Impact Appraisal for Insurance CIOs

Impacts	Top Recommendations
Enabling enterprise intelligence that will drive benefits across the entire value chain will require that insurance CIOs increase their IT investments substantially in 2020.	▪ For effective data and analytics in the intelligence platform, identify the primary data that has the greatest impact on business outcomes and start their data governance efforts here. ▪ Challenge existing budgetary priorities by building a risk model showing how insufficient investments in intelligence will result in underwriting losses, growing fraud and lack of customer retention, as examples.
To have a successful intelligence platform, CIOs will be required to establish a center of excellence that will supply data and insight for business processes, supporting automation and delivering decision accuracy and a single version of the truth.	▪ Leverage the teams that are already in existence in the company versus starting from scratch. ▪ Seek help to augment staff via partnerships with universities, ecosystems, insurtechs or external services providers.
The development of an intelligence platform will result in less of a need to have analytics in the core system but that core systems be systems of record, not systems of innovation.	▪ When conducting RFPs for core systems, identify the minimum data and analytics requirements for that system, comparing it to the enterprise analytics strategy and the data that is to be housed in the intelligence layer of the organization. ▪ Strengthen your integration capabilities for both technical and data integration.

ID: 378736

Source: Gartner (February 2019)

- Data issues that have never been addressed, such as dirty data and trust in data or, more generally, business-relevant data and analytics governance.

- Lack of the technical foundation needed to support business uses. During inquiries and discussions, Gartner insurance clients report to Gartner that they have large investments in such classical technologies as data warehousing and BI. However, Gartner finds that their investments in such advanced technologies as predictive analytics, machine learning and artificial intelligence to support such core business processes as claims, fraud and underwriting are lacking. While new applications are being developed by niche vendors (such as insurtechs offering claims analytics) and by enhancements to core systems, adoption is still low and these technologies often operate in stovepipe environments.

These are major gaps and issues that insurance CIOs will have to face in fulfilling a DBTP. Today, CIOs will need to inventory the assets, data and competencies that they have across the organization, comparing them with best practices and emerging business priorities. However, without increased investment, all of these efforts will fail. Organizations will have only limited ROI from analytics projects and not find the results for which business had hoped. Innovative models tied to digital business outcomes cannot be developed without proper staff who have advanced data science skills. New technology adoption will

be lacking as IT struggles to leverage outdated solutions or seek open-source options. Business will be dissatisfied as it cannot obtain the data and analytics needed to improve underwriting, claims and customer experiences. CIOs must begin to evaluate this problem immediately.

Focus on data and analytics is on the rise and will only grow as insurers proceed with digital maturity, understand the value of intelligence and/or face new regulations that demand better reporting or data management (such as Solvency II or GDPR). CIOs must begin to build the business case for growing the investments to fill the gaps in what will be needed in the long term within the intelligence layer of the DBTP.

Recommendations:

Insurance CIOs should drive excitement by the business so that leaders in underwriting, claims, actuarial, marketing and sales, for example, will want to invest more in data and analytics and then build the necessary budgets to fund them. Specifically, CIOs should:

- Identify key data leaders in analytics, IT, data science and the business. Create a cross-company team to review and determine the requirements of the intelligence layer and its role in enabling digital maturity. This team should work to educate the team on "the art of the possible" and opportunities that enterprise intelligence offers to the organization through a series of workshops.

- Determine the main issues you can solve for the business and highlight them. Assess key questions that the business wants answered — e.g., influencers of churn, life event or life style segmentation or new attributes related to risk. Document what data is housed internally to support those questions and which data is missing. Identify third-party sources to augment internal data to better answer core questions if possible. Calculate the cost of using third-party data versus the application of AI to support this analysis.

- Focus on using the right data, not all the data. For effective data and analytics in the intelligence platform, identify the primary data that has the greatest impact on business outcomes and start your data governance efforts there. Do not try to tackle all data on Day 1 but start with a small sample of data needed to answer the more critical questions of the business.

- Challenge existing budgetary priorities by building a risk model showing how insufficient investments in intelligence will result in underwriting losses, growing fraud and lack of customer retention as examples. Compare each business function strategy against analytics needs. Drive visibility into the long-term risks of underinvestment through hosting workshops to share this model with business peers and management.

- Review new data needs and assess their impact on the intelligence platform including costs of data collection, storage and management. For example, assess the impact that IoT and ecosystems will have on your intelligence needs, such as what new data will be incoming, where it will be stored, issues around privacy and security of this data, how or if data is to be shared and how data is analyzed. Look carefully at issues around data sharing and protection as your local regulation stipulates.

To have a successful intelligence platform, CIOs will be required to establish a center of excellence (COE) that will supply data and insight for business processes, supporting automation and delivering decision accuracy and a single version of the truth.

Important elements of the intelligence platform are skills and resources. CIOs must ensure that there are sufficient resources in both the business and IT. Today, there are many staffing gaps within most insurance companies. A mid-2018 Gartner study of insurers found that:

- Only 34% of respondents have a chief data officer (CDO).
- Only 26% of respondents have an analytics COE in IT.
- Only 31% of respondents have a data science department.

Business and IT leaders will often find it difficult to find resources but they will need to face this problem head-on and immediately. They will need to find internal resources plus look externally to build the right sourcing model for success.

This can be accomplished by creating a COE for data and analytics. This team will be responsible for not just data management but also ensuring that all sources needed for core business processes are clean and accessible. It will also find synergies across the company in areas like data science, where they can identify repeatable algorithms that can be used in multiple lines of business or business functions. This will result in four major benefits that should not be overlooked:

- It will ensure that transactions that are being automated have the right data at the right time to support each process for the right outcome. Ensuring that each process has the right data is essential when undergoing process automation projects and when deploying such technologies as RPA. The results will be more opportunities for automation across the enterprise and more complex decision-based tasks that can be automated by combining RPA with analytics.
- It will supply the relevant data to the business to help with decision accuracy and impact. Data that is inaccessible currently will become accessible and trusted. Data needed for analytics, for example, should be extracted and moved to a data warehouse, analytical application or data lake to be cleaned. Then skilled staff can help business unit owners build the right analytics and needed algorithms as well as make sure that they have the data needed to populate algorithms for business optimization. This will result in better decisions — done both by employees and by AI. This will lead to improved underwriting profitability and risk selection, reduced losses through improved fraud detection and improved personalization of customer experience. It may well lead to a data hub strategy as well.
- It will help enable companies to shift from siloed insight into holistic insight. Relevant data will be aggregated (either physically or logistically) so that intelligence can be more accurate for the enterprise. Concerns about single versions of the truth will be overcome through this approach. This will drive better reporting and operational decisions as well as consistency in modeling, which the industry needs.
- It helps insurers assimilate new data, such as any coming from other parts of the DBTP like IoT and business ecosystems partners. Most data initiatives focus solely on internal data and traditional third-party data providers. New data sources are emerging and two of the most important are ecosystem partners and IoT devices. Insurance CIOs need to begin to determine how they will integrate and manage these new data sources for analytics as well as determine regulatory issues around how data can be used and security around data protection. The establishment of an intelligence platform will help with both data use and control including

governance and security and privacy, which are risks in today's operational environment.

In this model, employees will no longer need to search for data and analytical outcomes and scores will be fed automatically and in real time and linked to the business outcomes that they will impact. This will help with productivity and staffing challenges and provide the foundation for future AI- and machine-based work that is keyed to high automation. This is accomplished through aggregation of data, centralization of algorithms and team building for data science resources that are shared across the organization. Working with business and data leaders (including the CDO if there is one), CIOs should begin to draft this vision out in 2019. Development of the COE will take time and resources might be hard to find depending on geography and local competition. Actuarial departments can help with sourcing some data science skills, but most companies will need to look externally for support. Training programs can be initiated, university recruitment programs started and external services providers used in the short term while staff is identified, trained or hired.

Recommendations:

Insurance CIOs should:

- Leverage the teams that already exist in the company versus starting from scratch. Given the high use of RPA today within the industry, leverage those efforts to jump-start a business case for improved centralized intelligence. While working with leaders involved in RPA projects, identify the data requirements to optimize those projects and the ROI associated with intelligent business processing.

- Discuss staffing needs with the head of the actuarial department, identifying those skill sets that have data science and insurance knowledge that can be leveraged in such other business departments as claims, underwriting and marketing. Create a team of already-internal skilled people that could be used as needed or have career aspirations that would make them good candidates for a centralized intelligence team.

- Seek help to augment staff via partnerships with universities, ecosystem partners, insurtechs and external services providers. Document needed skills and build strategies with HR on how to acquire these skills. Identify which are needed in the near term while staffing is trained or hired and which are long-term skills not needed internally.

- Assess the IT department skills and resource pool to identify training opportunities and individuals who would be best positioned in the CoE. For multinational companies or those with multiple operating groups, you may wish to do this at the global level versus facing regional challenges.

The development of an intelligence platform will lessen the need to have analytics in the core system but necessitate that core systems be systems of record, not systems of innovation.

Based upon Gartner client interactions, most insurance CIOs consider core systems (such as policy administration) as the center of their IT plan. This is because IT and business leaders have fixated on transaction processing as their core competency. However, in the digital insurance mode, core systems are systems of record. Core systems are important for transaction processing, but their focus is lessened as being the center of enterprise information.

During the past few years, many core system vendors have extended their systems to include various data capabilities, including analytics or data hubs (i.e., data management platforms). Some have partnered with analytics companies or even acquired them to obtain this capability. Some offer this within the base system while others offer analytics as an adjacent product. With this DBTP approach, however, the approach taken by core system vendors is challenged.

Having analytics in the core would be acceptable for small monoline insurers that have only one policy administration system, perhaps, but complex insurers with multiple lines of business and systems would need to centralize enterprise analytics. For medium to large multiline companies, there is a need for advanced analytical capabilities, which may not be found from core systems and centralized data storage that would combine data from a vast range of core and ancillary systems. The core system will remain the system of record for regulatory and financial reporting because it houses the issuance and financial data needed for state and federal regulations. That means that buyers today who are buying digital platforms from core system vendors that contain analytics may be overbuying. This may lead to duplication, as Gartner has already seen in multiple client experiences in which firms fell victim to building analytics by line of business at the core system level. For example, one client reported that the P&C division bought analytics from a core system vendor but they had to extract all the data and then run enterprise analytics, which drove up the cost substantially while also creating a lapse in reporting time.

Insurance CIOs will need to focus on integration between core systems and intelligence layers. This means that core systems need open APIs that will feed data warehouses and analytical systems and that ETL tools be leveraged to shift and standardize data. CIOs will need to build a single version of the truth and help avoid the data redundancy that happens today through line of business purchase decisions. This will also enable other business units to access needed data through the intelligence platform, which may not be possible today.

Integration is key with this approach. However, that may be challenged by legacy core systems, which are not based on services and cannot have data extracted easily. Success in this is correlated with success in legacy modernization. While some insurers operate newly architected core systems — including those that are cloud-based — many still have legacy environments hampered by aged systems that challenge integration. CIOs must develop integration approaches — including a range of methods including ETL to APIs depending on the use case and the speed for information accessibility — to overcome these challenges. The key will be openness and the ability to feed and consume data across the core system and intelligence platform, which are needs that must be enabled through new technical approaches.

Recommendations:

Insurance CIOs should:

- When conducting RFPs for core systems, identify the minimum data and analytics requirements for those systems, comparing them to the enterprise analytics strategy and data that are to be housed in the intelligence layer of the organization. Avoid duplication as much as possible. Smaller insurers may find the core system's analytical and data hub capabilities satisfactory to their business needs, whereas larger insurers will focus more on enterprise integration.

- Seek core systems with easy data-extraction capabilities, including ETL and APIs, to allow easy integration with BI, analytics and other intelligence-based systems.

- Strengthen your integration capabilities for both technical and data integration. Invest in new training and skills for ETL and API-based data exchanges and connectivity as well as those related to new data management platforms.

Evidence

[1] 2018 Gartner Data and Analytics Study conducted on-site at the NA and Australian Gartner D&A Summits and to a subset of clients online. There were 35 insurance respondents ranging from Asia, NA and Europe.

Source: Gartner Research Note, G00378736, Kimberly Harris-Ferrante, Andrew White, 20 February 2019

About Octo Telematics

Octo is the number 1 global provider of telematics and data analytics solutions for the auto insurance industry. Founded in 2002, Octo is one of the pioneers of the insurance telematics industry. Today, Octo is the largest and most experienced insurance telematics company in the world, transforming auto insurance through behavioral, contextual and driving analytics for more than 100 insurance partners.

Octo has more than 5.6 million connected users and the largest global database of telematics data, with over 228 billion miles of driving data collected and 456,000 crashes and insurance events analyzed (as of December 31, 2018). Octo applies proprietary algorithms to this market-leading database to deliver powerful new insights into driver risk, informing solutions that benefit both auto insurance companies and policyholders. The company is headquartered in Rome, with offices in Boston, London, Stuttgart, Madrid, and Sao Paulo.

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