Top-10 Technology Trends in Property & Casualty Insurance: 2019

What You Need to Know

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Introduction

The P&C sector has been witnessing slow but resilient growth in premiums, with the real premium growth rate stabilizing gradually after the financial crisis. However, in 2017, there was a decline of 0.5 percentage points in the real growth rate of premiums and profitability also trended down for the third consecutive year. The P&C sector has been particularly affected by heavy underwriting losses due to the rise in natural catastrophe losses and overall auto claims costs.

Spurred by rapid technological advancements, the industry is coping with a change in customer expectations, in which insurance customers increasingly demand a digital, simplified, and personalized experience. Therefore, insurers must now cater to changing customer expectations to ensure retention and stabilize the top line. Margin pressures brought on by heavy underwriting losses in recent years must also be tackled.

Insurers have responded by leveraging voice assistants and connected devices to increase customer touchpoints and by providing a variety of value-added services to improve meaningful customer engagement. P&C insurers have also started offering new models of insurance such as parametric and on-demand insurance and have developed sophisticated cyber risk assessment tools to address gaps in coverage and to gain access to new avenues of revenue generation.

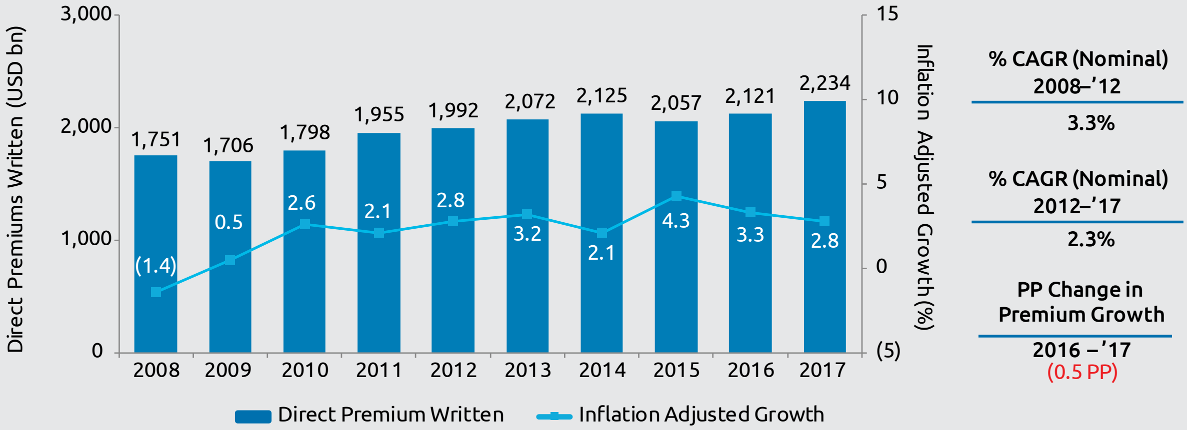
Insurers are exploring artificial intelligence (AI), analytics, and distributed ledger technology (DLT) to enhance fraud detection and loss prevention capabilities, improve operational efficiency, and streamline their internal processes. Insurers are also considering strategic partnerships with appropriate InsurTech firms to foster innovation and gain cost efficiencies.

Finally, insurers have begun to open their platforms through APIs for seamless delivery of services to customers and better integration with ecosystem partners. P&C insurers are gradually moving to a digitally integrated, efficient ecosystem, with seamless information flow between ecosystem partners.

Property & Casualty Insurance Industry Landscape

Over the last 10 years, the P&C business has been witnessing slow but resilient premium growth, with real premium growth declining 0.5 percentage points in 2017 to 2.8% as compared to 2016 (Exhibit 1). The decline was primarily related to a slowdown in emerging markets, with 2017's 6.1% real premium growth rate down 3.7 percentage points from 2016. Meanwhile, advanced markets witnessed a steady 1.9% real premium growth in 2017.

Exhibit 1: Global Direct Non-Life Insurance Premium[a] Written (USD bn) and Inflation Adjusted Growth (%), 2008-17



a: Global non-life insurance premiums include health insurance premiums
Source: Capgemini Financial Services Analysis, 2018; Sigma Explorer, Swiss Re Institute, accessed October, 2018

Industry profitability is also under pressure, trending downward for the third consecutive year, with sector return on equity (ROE) declining to 5.1% in 2017. The overall combined ratio for the eight major non-life markets[1] deteriorated to 101.8% in 2017 from 99.4% in 2016.[2] The decline was primarily driven by heavy underwriting losses due to rise in natural catastrophe losses across the globe as well as an increase in overall claims costs in the auto insurance sector.

Insured natural catastrophe losses surged to $135 billion in 2017, marking an increase of 165% over the previous year and making it the costliest year for insurers since 1980.[3] Auto insurance claim loss costs have been increasing steadily since 2012 because of an increase in claims frequency and severity. Claims frequency is driven by increases in miles driven and occurrences of distracted driving, etc. Increased claim severity is mainly driven by rising medical treatment costs and increasing usages of the sophisticated and expensive sensors and other high-end devices in today's vehicles, which raises repair costs.

1 The markets include aggregate of US, Canada, UK, Germany, France, Italy, Japan, and Australia

2 Swiss Re, "sigma NO 3/2018: WORLD INSURANCE IN 2017: SOLID, BUT MATURE LIFE MARKETS WEIGH ON GROWTH," March 2018, http://institute.swissre.com/research/overview/sigma/3_2018.html, accessed September 2018

3 Munich Re, NatCatSERVICE, https://www.munichre.com/en/reinsurance/business/non-life/natcatservice/index.html, accessed September 2018

Changing customer expectations and rapid technological advancements are also affecting the P&C sector.

P&C insurers are leveraging technology to respond to the fast-evolving market environment (Exhibit 2). They are using technologies such as artificial intelligence (AI) and advanced analytics in innovative ways to enhance customer engagement, improve operational efficiencies, and better integrate with their ecosystem.

This report explores the top 10 trends shaping the P&C insurance sector and details actions to navigate fast-evolving market dynamics.

Exhibit 2: P&C Insurers Responding to Fast-Evolving Market Environment

	Business Trends Affecting P&C Insurers
1	Changing customer expectations
2	Slowdown in premium growth
3	Profitability under pressure
4	High catastrophic losses and weather related claims
5	Increasing auto and cyber claims cost
6	Advancements in technology

Implications For P&C Insurers

	Actions Taken By P&C Insurers to Combat Market Forces
1	Enhancing customer engagement through the use of voice assistants and connected devices
2	Increasing customer touchpoints and becoming a partner by providing value-added services
3	Exploring new models of business to close coverage gaps and establish new revenue streams
4	Improving operational efficiency and streamlining of internal processes by leveraging blockchain technology and automation
5	Enhancing loss prevention and fraud detection capabilities through use of AI and analytics
6	Leveraging InsurTechs for fostering innovation and gaining cost efficiencies

Source: Capgemini Financial Services Analysis, 2018; Sigma Explorer, Swiss Re Institute, accessed October, 2018

Trend 01: Value-added services enhance customer engagement

P&C insurers are offering value-added services to increase customer touchpoints and drive meaningful engagement.

Background

- Insurers are providing value-added services to customers in the form of easy-to-use mobile apps.
- When combined with core offerings, value-added services can increase interactions with customers and drive meaningful engagement.

Key Drivers

- Customers, especially the Gen Y and tech-savvy segment, desire for convenient, personalized services with frequent touchpoints, similar to the experience they get from BigTech firms such as Amazon. Hence, there is a need for insurers to create a new ecosystem around the customer to engage him as often as possible.
- Insurers' need to increase customer touchpoints to improve customer satisfaction.
- Smartphone penetration and the growing popularity of mobile apps that enable insurers to engage with customers better.
- Increased adoption of connected devices such as safety sensors and telematics are enabling preventive risk and monitoring services.

Trend Overview

- Connected devices enable insurers to increase interactive touchpoints with customers and allows for personalization of offerings:
  - Insurers are offering value-added services such as roadside assistance, home monitoring, and other support services that enable users to get tips on driving behavior, manage routes during adverse weather, etc.
  - Allstate partnered with crowdsourced navigation app Waze, so that Waze users can request roadside assistance from Allstate's Good Hands Rescue service using the Waze app. The app allows users to track the tow or service provider's location and share it with others.[4] Allstate's mobile app Drivewise offers tips to stay safe on the road as well as a performance review of insureds' driving.[5]
  - American Family Insurance partnered with Frontpoint, a wireless home-security provider, to enable customers to protect their homes affordably. Under the partnership, American Family customers can purchase the $600 Frontpoint home-security system for $99.95 and qualify for burglary and smart-home discounts.[6]

4 *PR Newswire,* "Allstate Roadside Services® Hits the Road with Waze to Provide Roadside Help for Drivers Needing Assistance," November 14, 2017, https://www.prnewswire.com/news-releases/allstate-roadside-services-hits-the-road-with-waze-to-provide-roadside-help-for-drivers-needing-assistance-300554163.html, accessed September 2018

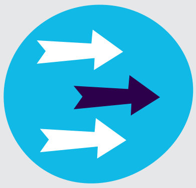
5 Allstate website, https://www.allstate.com/drive-wise.aspx, accessed September 2018

6 American Family Insurance press release, "American Family Insurance, Frontpoint partner to protect homes," October 19, 2017, https://newsroom.amfam.com/american-family-insurance-frontpoint-partner-to-protect-homes, accessed September 2018

Exhibit 3: Various Value-Added Services Provided by P&C Insurers

Source: Capgemini Financial Services Analysis, 2018

  - With an eye on proactive risk mitigation, GuideOne Insurance, one of the largest church insurers in the United States, partnered with home telematics provider Roost in early 2018 to provide Roost's Smart Water Leak and Freeze Detectors for free to participating clients.[7]
- Insurers have begun to use mobile devices to provide value-added services in the form of intuitive apps.



Implications

- Increased customer touchpoints through value-added services can help insurers gain customer loyalty.
- Through value-added services in the form of mobile apps, insurers can capture customer mindshare by being present on their phones to increase ease of access.
- With connected devices and mobile apps, insurers can collect customer data to personalize, up-sell, and cross-sell services.
- Value-added services that enable risk prevention can help reduce claims costs while those that can be monetized can open new revenue streams.

7 *GlobeNewsWire*, "GuideOne Insurance Selects Roost® Property Telematics Solution," February 13, 2018, https://globenewswire.com/news-release/2018/02/13/1339746/0/en/GuideOne-Insurance-Selects-Roost-Property-Telematics-Solution.html, accessed September 2018

Trend 02: Connected devices simplify claims and enrich customer engagement

P&C insurers are leveraging connected devices to streamline claims processing and improve customer engagement.

Background

- With today's focus on loss prevention and control, connected devices – sensor-based devices with the ability to transmit data – are being adopted more often.
- Insurers can leverage connected devices to increase customer interactions and to provide timely insights from analysis of collected data.

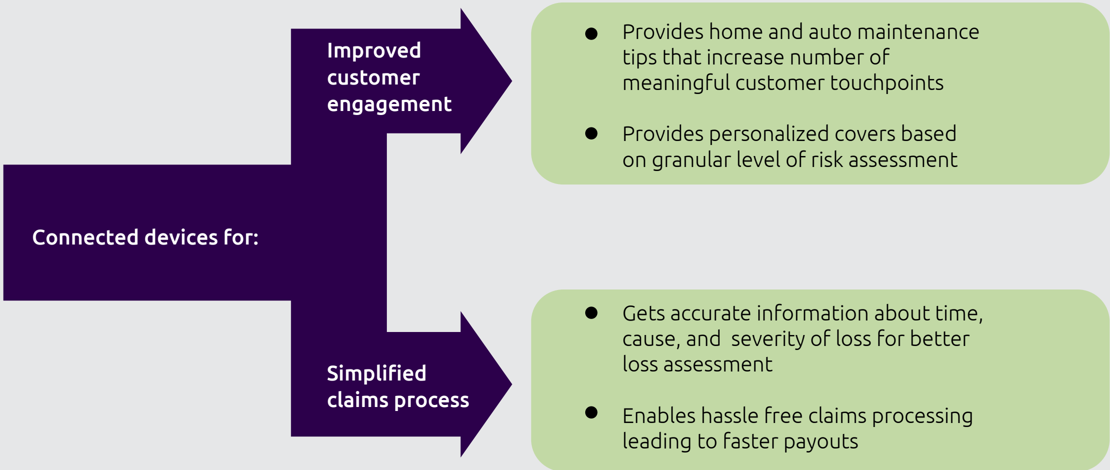
Key Drivers

- Insurers face rising customer demand for personalized and proactive services.
- The connected device market is growing, with 125 billion connected devices estimated to be in use by 2030.[8]
- Advanced sensors in mobile phones enable mobile apps to act as connected devices.

Trend Overview

- Insurers are leveraging connected devices and providing useful tips and advice on driving behavior, home maintenance, etc. to drive meaningful customer engagement:
  - Liberty Mutual is testing home-monitoring tool, Dwellbeing, to empower homeowners to monitor plumbing, ventilation, and other home systems and appliances. The platform notifies users when it detects that maintenance is required and provides tips on how to service the damaged items.[9]

Exhibit 4: Connected Devices in Claims Processing and Customer Engagement



Source: Capgemini Financial Services Analysis, 2018

8 *IHS Markit*, "Number of Connected IoT Devices Will Surge to 125 Billion by 2030, IHS Markit Says," Jenalea Howell, October 24, 2017, https://technology.ihs.com/596542/number-of-connected-iot-devices-will-surge-to-125-billion-by-2030-ihs-markit-says

9 *Corporate Insight*, "Liberty Mutual Brings Smart Home System to P&C Insurance with New Dwellbeing Tool," Henry Marshall, February 2, 2018, http://corporateinsight.com/liberty-mutual-brings-smart-home-system-to-pc-insurance-with-new-dwellbeing-tool

- Real-time data from IoT (Internet of things) devices gives insurers immediate first notice of loss notifications and better insights into the cause as well as the severity of the loss, which can significantly reduce the time to connect with customers and assess claims:
  - Certified Collateral Corporation, a provider of cloud, mobile, telematics, and hyperscale technologies, enabled an insurer client to detect when telematics-enabled vehicles have been in an accident and text customers to learn if they want to file a claim.[10]
  - Allstate is planning a system in which auto losses are detected by a telematics system and confirmed by the policyholder. Claim assessment by an AI system will review data gathered by the telematics system apart from the driver's inputs, resulting in faster damage assessment.[11]
- Insurers are also leveraging real-time data from connected devices to come up with personalized covers where the premium is based on a granular review of risk and use:
  - P&C insurer State Auto, Octo Telematics, and U.S. online marketplace EverQuote have partnered to provide customers with personalized auto insurance discounts. Users of EverQuote's social safe-driving app, EverDrive, can share their driving data to become eligible for discounts based on their driving behavior.[12]

Implications

- Insurers who leverage data from connected devices can perform more accurate underwriting and better risk pricing.
- Data from connected devices can provide timely warnings and prevent losses, which can reduce claim costs and create a better customer experience.
- Insurers need real-time data processing and execution capabilities to successfully take advantage of data from connected devices.

10 *Repair Driven News*, "CCC: A.I.-human estimate writing coming Q1 2019; crash detection for insurers ready now," John Huetter, August 16, 2018, http://www.repairerdrivennews.com/2018/08/16/ccc-a-i-human-estimate-writing-coming-q1-2019-crash-detection-for-insurers-ready-now/

11 *Repairer Driven News*, "Allstate: Highly automated FNOL process coming 'pretty fast,' 25% liability calls could be AI in 2019," John Huetter, September 20, 2018, http://www.repairerdrivennews.com/2018/09/20/allstate-highly-automated-fnol-process-coming-pretty-fast-25-liability-calls-could-be-ai-in-2019/

12 *Business Wire*, "Octo Telematics Signs First Partners to Octo DriveAbility Marketplace," September 6, 2018, https://www.businesswire.com/news/home/20180906005705/en/Octo-Telematics-Signs-Partners-Octo-DriveAbility-Marketplace, accessed September 2018

Trend 03: Voice assistants make meaningful customer engagement a reality

P&C insurers are enhancing customer experience by leveraging voice assistants across the value chain, including claims management.

Background

- Voice assistants are gaining popularity and user adoption riding on the coattails of successful BigTech and retail giant voice assistants:
  - According to a research by Capgemini Research Institute, voice assistants would become a dominant mode of customer interaction, with 40% of consumers preferring to use a voice assistant rather than a website by 2020.[13]
- Voice assistants have the potential to be a cost-effective and meaningful customer engagement tool with the ability to personalize interactions.

Key Drivers

- Insurers' need for more customer touchpoints and outstanding experience at each touchpoint.
- Advancements in AI areas such as Natural Language Processing (NLP), speech recognition, etc. have led to increased voice assistant popularity:
  - The number of customers using voice assistants is estimated to reach 1.83 billion by 2021.[14]
  - The rise in the integration of voice assistants in mobile has increased voice adoption even more.

Trend Overview

- Insurers are simplifying customers' insurance procurement journey by leveraging voice assistants to provide policy quotes, product information and coverage details, and agent appointment booking options:
  - Safeco Insurance created Insurance Advisor, an Amazon *Alexa* skill, to connect users with a local Safeco agent. The functionality also offers product and coverage information.[15]
  - Marketplaces Kanetix.ca and InsuranceHotline.com use Google *Home* to provide insurance quotes to customers.[16]

13 Capgemini website, "Conversational Commerce: Why consumers are embracing voice assistants in their lives," January 11, 2018, https://www.capgemini.com/resources/conversational-commerce-dti-report/, accessed September 2018

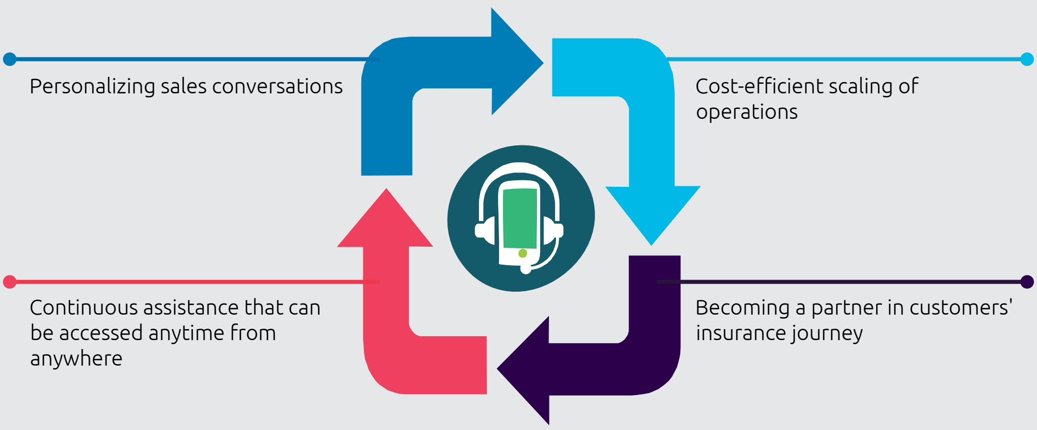
14 *Medium*, "The rise of the voice payments ecosystem," Anton Dziatkovskii, May 6, 2018, https://medium.com/@micromoney.io/the-rise-of-the-voice-payments-ecosystem-666cf658930f

15 *Corporate Insight,* "The Rise of Voice-Assistant Technology Among P&C Firms," Henry Marshall, September 20, 2017, http://corporateinsight.com/voice-assistant-tech-pc-firms/

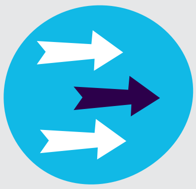
16 *Top Broker,* "Consumers embrace voice assistants at CES 2018," Andrew Lo, February 28, 2018, http://www.citopbroker.com/magazine-archives/consumers-embrace-voice-assistants-at-ces-2018-13866

- Insurers are using voice assistants to educate customers about various insurance terms and offer tips related to home and auto purchase and care:
  - Liberty Mutual partnered with HowStuffWorks and Amazon's *Alexa* to educate customers about home and auto-related issues. The firm created an online knowledge bank that covers topics such as preparing for a hurricane and buying a car and allows customers to access content via *Alexa*.[17]
  - Progressive Insurance uses Google *Home* to offer customers vehicle and home-care tips. Topics range from car buying and care to smart home technology and moving to a new home. The tips are designed to allow natural conversation with customers.[18]
- Voice assistants are also being used in claims management to make the process simpler and faster:
  - Farmers Insurance added an Amazon *Alexa* skill that allows customers to check the status of their claim and obtain contact details of their claims' representative. The function also answers questions about insurance terminology and policy coverage.[19]

Exhibit 5: Benefits of Leveraging Voice Assistants by P&C Insurers



Source: Capgemini Financial Services Analysis, 2018



Implications

- Insurers can improve customer satisfaction by leveraging voice assistants to create a hassle-free and personalized claims experience.
- Insurers can leverage voice assistants to quickly and cost-efficiently scale support operations.
- Cyber risk and privacy concerns posed by voice assistants are hurdles that insurers must navigate.

17 *BrandChannel*, "MasterThis: Liberty Mutual Teams with HowStuffWorks and Alexa for Education," Abe Sauer, February 22, 2017, https://www.brandchannel.com/2017/02/22/liberty-mutual-master-this-022217/

18 *Voicebot.ai*, "Progressive Insurance Becomes First Insurance Provider on Google Home," Ava Mutchler, March 29, 2017, https://voicebot.ai/2017/03/29/progressive-insurance-becomes-first-insurance-provider-google-home/

19 *PR Newswire*, "Farmers Insurance® Customers Can Now Ask Alexa for Policy and Claims Information," Aug 22, 2017, https://www.prnewswire.com/news-releases/farmers-insurance-customers-can-now-ask-alexa-for-policy-and-claims-information-300507456.html, accessed September 2018

Trend 04: New business models make coverage for previously uninsured risks possible

P&C insurers are exploring offerings that allow dynamic coverage and insuring previously uninsured risks.

Background

- Insurers can now provide flexible offerings as well as cover previously uninsured risks thanks to the rapid evolution of technology that allows real-time and automated transactions.
- These new models allow insurers to gain new revenue streams as they extend coverage opportunities by closing existing gaps.

Key Drivers

- Customers are demanding innovative offerings and acknowledgment of their unmet needs.
- More data is available today that can be used to perform a granular-level risk assessment to personalize insurance offerings.
- Advancements in real-time data capturing and processing systems have paved the way for sophisticated business models.

Trend Overview

- Insurers are exploring new models of business such as on-demand and parametric insurance to address current coverage gaps and customer demands for personalized and convenient services.
- On-demand protection allows customers to get cost-optimized, convenient coverage as they need it:
  - AIG company Travel Guard Canada launched on-demand travel insurance that customers access via a mobile app. The app enables Canadians to purchase coverage for blocks of time and activate it when required. The solution also uses the phone's geolocation features to sense when a user has arrived at an airport or border crossing and via notification proactively asks whether insurance protection should be activated.[20]
- Insurers have also started offering parametric insurance based on predefined catastrophe and weather parameters, which allows for insuring previously uninsured risks (or extending coverage) and settling claims speedily without dispute:
  - African Risk Capacity (ARC), a parametric disaster risk insurer for African nations, has begun a pilot roll-out of parametric insurance that covers disease outbreaks and epidemics, in partnership with risk analytics firm Metabiota.[21]

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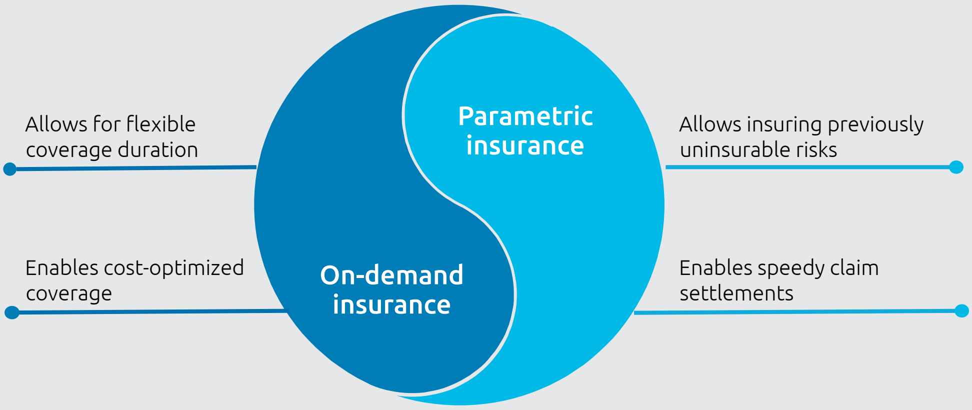
20 *Coverager,* "AIG Launches Canada's First On Demand Travel Insurance," Shefi Ben-Hutta, March 27, 2018, https://coverager.com/aig-launches-canadas-first-on-demand-travel-insurance

21 *Artemis,* "ARC and Metabiota begin parametric outbreak & epidemic insurance pilot," March 6, 2018, http://www.artemis.bm/blog/2018/03/06/arc-and-metabiota-begin-parametric-outbreak-epidemic-insurance-pilot, accessed September 2018

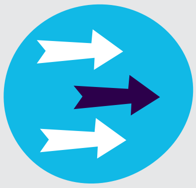
– In El Salvador, the Microinsurance Catastrophe Risk Organization (MiCRO) launched Produce Seguro, a parametric insurance product that covers business interruption as a result of excessive rainfall, severe drought, and earthquakes.[22]

– InsurTech Skyline Partners is launching a weather catastrophe insurance product for tea farmers in India. Premiums, as well as specific parameters, such as temperature and humidity thresholds that would lead to pay-out, are predefined, which enables faster claims' payouts.[23]

Exhibit 6: Benefits of New Insurance Models



Source: Capgemini Financial Services Analysis, 2018



Implications

- By offering cost-effective coverage that can be accessed on-demand, insurers can improve customer satisfaction and target previously uninsured segments.
- Parametric insurance enables faster claim payouts which may enhance customer experience and improve retention.
- To provide dynamic coverage of previously uninsured risks insurers need to ensure accurate, secure, and real-time data capture of coverage parameters.

22 *Artemis*, "MiCRO starts parametric business interruption insurance in El Salvador," June 27, 2018, http://www.artemis.bm/blog/2018/06/27/micro-starts-parametric-business-interruption-insurance-in-el-salvador, accessed September 2018

23 *Ledger Insights*, "InsurTech targets under-insured with blockchain, parametric," Nicky Morris, August 2018, https://www.ledgerinsights.com/insurtech-insurance-blockchain-parametric/

Trend 05: Cyber risk management supported by sophisticated tools

The cyber insurance market is expanding with the entry of new players and sophisticated tools for assessing cyber losses.

Background

- There has been an increase in global cyberattacks with assaults becoming progressively sophisticated.
- Such cyberattacks have spurred awareness among organizations and increased security spending:
  - Worldwide cyber security spending was predicted to increase by 8% by the end of 2018 to reach $96 billion.[24]

Key Drivers

- Cyber incidents are making comprehensive cyber protection a critical business need.
- Vast data is available and can be leveraged to develop comprehensive cyber-risk assessment models.
- Sophisticated cyber-risk management tools are the result of advancements in data processing and risk-modeling techniques.

Trend Overview

- Insurers have come up with sophisticated cyber risk management and loss assessment tools resulting in more accurate underwriting:
  - These tools leverage advanced analytics and predictive modeling which enable better estimation of the risks involved.
  - Guy Carpenter, in collaboration with CyberCube Analytics, has created a cyber risk modeling platform which applies multidisciplinary analytics to enable insurers to make better cyber underwriting decisions.[25]
  - Risk modeling and analytics firm RMS offers insurers a probabilistic cyber-risk model that enables them to understand risks and design products and allocate capital accordingly.[26]

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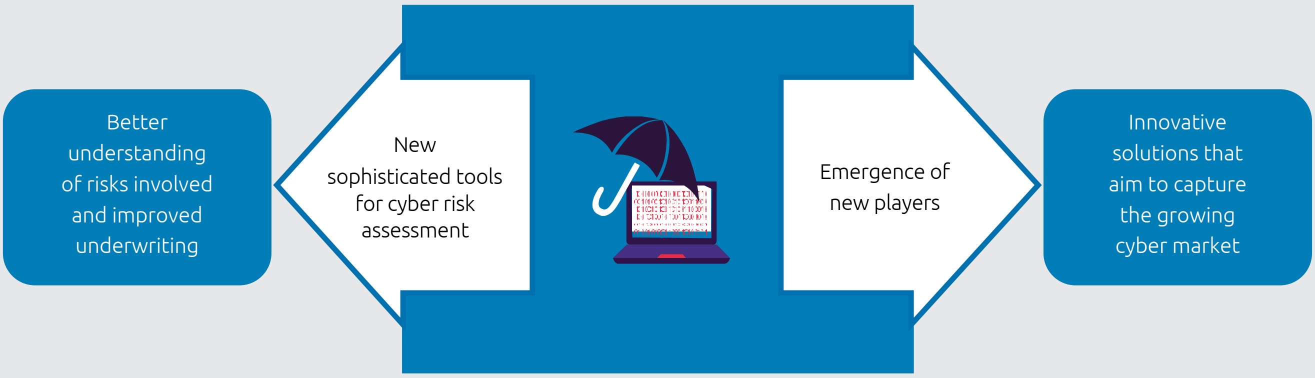
24 *IT Pro,* "Cyber security spending will hit $96bn in 2018," Clare Hopping, December 11, 2017, http://www.itpro.co.uk/cyber-security/30122/cyber-security-spending-will-hit-96bn-in-2018

25 *Insurance Business Magazine*, "Guy Carpenter and CyberCube reveal innovative cyber risk modeling platform," Ryan Smith, May 1, 2018, https://www.insurancebusinessmag.com/us/news/cyber/guy-carpenter-and-cybercube-reveal-innovative-cyber-risk-modeling-platform-99343.aspx

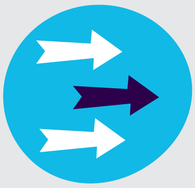
26 RMS press release, "RMS Releases Industry's First Probabilistic Cyber Risk Model," March 7, 2018, https://www.rms.com/newsroom/press-releases/press-detail/2018-03-07/rms-releases-industrys-first-probabilistic-cyber-risk-model, accessed September 2018

- Insurers are also helping commercial clients understand their existing cybersecurity so they can proactively cover gaps:
  - Commercial property insurer FM Global offers customers a cyber-readiness assessment tool that comprehensively reviews an organization's cyber exposure and allows clients to assess their organization's cybersecurity readiness.[27]
- New players are innovating cyber risk management solutions to capture the growing cybersecurity market:
  - InsurTech Corvus Insurance offers cyber coverage products, in partnership with Hudson Insurance, for organizations with annual revenues less than $1 billion.[28]
  - InsurTech Kovrr has entered the market as an enabler to insurers offering cyber coverage. Kovrr helps established insurers understand, quantify, and manage cyber risk and provides support in underwriting cyber insurance policies.[29]

Exhibit 7: Cyber Insurance Industry Landscape



Source: Capgemini Financial Services Analysis, 2018



Implications

- By leveraging sophisticated cyber risk management tools, insurers can underwrite new cyber risks and bring in additional revenue streams from the growing cybersecurity market.
- Insurer investment in advanced analytics and data processing is necessary to effectively underwrite cyber insurance policies.

27 *Insurance Business Magazine*, "FM Global rolls out new cyber-risk assessment," Mina Martin, September 14, 2018, https://www.insurancebusinessmag.com/au/news/breaking-news/fm-global-rolls-out-new-cyberrisk-assessment-111238.aspx

28 *Insurance Journal*, "Insurtech MGA Corvus Insurance Launches 'Smart' Cyber Coverage," June 18, 2018, https://www.insurancejournal.com/news/national/2018/06/18/492452.htm, accessed September 2018

29 Kovrr website, https://www.kovrr.com, accessed October 2018.

Trend 06: Distributed ledger technology brings efficiency to operations

Distributed ledger technology (DLT) is enabling P&C carriers to improve operational efficiencies and optimize costs.

Background

- A distributed ledger digitally records static/transactional data – in multiple places at the same time – based on consensus, which imparts veracity.
- DLT-based systems allow information to be stored immutably in a decentralized manner, extending security, transparency, and efficiency.

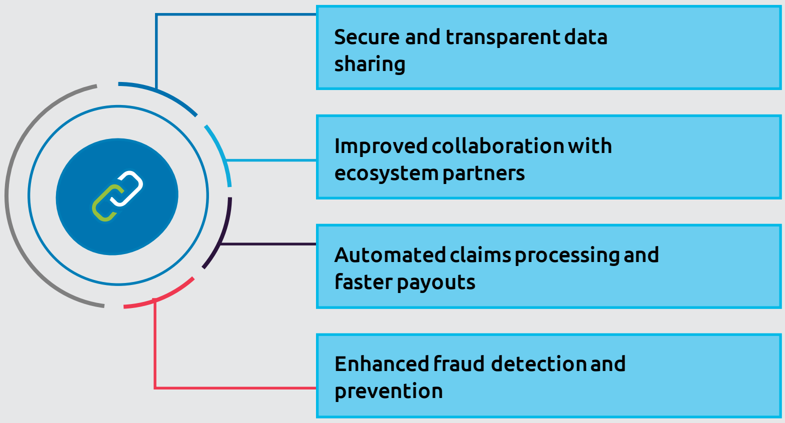
Key Drivers

- Insurance blockchain is projected to grow from a $64.5 million market in 2018 to $1,393.8 million by 2023, an 84.9% compound annual growth rate, according to a ReportLinker study.[30]
- Insurers and ecosystem partners critically need easy and secure data transfer capability.

Trend Overview

- DLT enables seamless data processing from various sources as well as validation and facilitation of transactions and claims, resulting in cost optimization and operational efficiency gains:
  - U.S.-based insurer Allianz Global Corporate & Specialty (AGCS) has implemented a blockchain-based solution prototype for a captive insurance client:[31]
    - It simplifies and accelerates international insurance transactions.
    - The solution is integrated with Citibank's CitiConnect API to allow AGCS clients to disburse payments as well.

Exhibit 8: Key Benefits of Distributed Ledger Technology

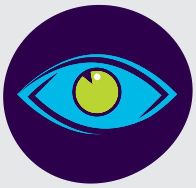


Source: Capgemini Financial Services Analysis, 2018

30 *Insurance Business Asia*, "Blockchain in insurance market tipped to surge," Ryan Smith, July 17, 2018, https://www.insurancebusinessmag.com/asia/news/breaking-news/blockchain-in-insurance-market-tipped-to-surge-106117.aspx

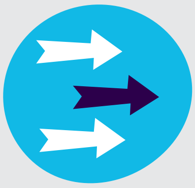
31 *Forbes*, "Allianz Prototypes Blockchain For Global Self-Insurance Client," Tom Groenfeldt, November 14, 2017, https://www.forbes.com/sites/tomgroenfeldt/2017/11/14/allianz-prototypes-blockchain-for-global-self-insurance-client/#7a24870b78e6

- Blockchain-based smart contracts enable automated claims processing, leading to faster claims payouts and increased transparency:
  - A common example is flight insurance, with companies such as AXA, Etherisc, and PolicyPal offering blockchain-based flight coverage:[32 33 34]
    - These policies use smart contracts to automate claims and increase system transparency.
    - Smart contracts built within the product trigger payments automatically based on flight data.



- DLT can also be used for validation of provenance of valuable assets, resulting in secure asset tracking and fraud prevention:
  - Multinational mining company Anglo American's diamond unit De Beers is set to launch a blockchain platform to track gems each time they change hands.[35]
- Industry wide initiatives are coming up to develop innovative solutions based on DLT:
  - Blockchain Insurance Industry Initiative (B3i), which is now incorporated as B3i Services AG, was formed by leading insurance and reinsurance players including Allianz, AXA, Generali, Liberty Mutual, Swiss Re, Tokio Marine, and Zurich.
  - B3i has developed and tested a prototype of smart contract management system for property excess of loss contracts.[36]

Implications



- DLT allows for secure and transparent sharing of data, which can enhance insurers' collaboration with ecosystem partners as well as enable improved fraud detection and prevention.
- Faster claim payouts using blockchain-based smart contracts can boost customer satisfaction and loyalty.
- DLT can help insurers optimize cost and operational efficiencies by enabling immutable, secure, and transparent data storage.

32 *CoinDtesk*, "AXA Is Using Ethereum's Blockchain for a New Flight Insurance Product," Stan Higgins, September 13, 2017, https://www.coindesk.com/axa-using-ethereums-blockchain-new-flight-insurance-product

33 *Insurance Journal*, "Insurtech Startup Etherisc Offers Blockchain-Based Flight Delay Insurance," October 30, 2017, https://www.insurancejournal.com/news/international/2017/10/30/469647.htm, accessed October 2018.

34 *Medium*, "New Product Launch: Blockchain-Powered Flight Delay Insurance," July 03, 2018, https://medium.com/@palnetwork_/new-product-launch-blockchain-empowered-flight-delay-insurance-38fcfccb5e22, accessed October 2018.

35 *Reuters*, "De Beers turns to blockchain to guarantee diamond purity," Barbara Lewis, January 16, 2018, https://in.reuters.com/article/anglo-debeers-blockchain/de-beers-turns-to-blockchain-to-guarantee-diamond-purity-idINKBN1F51NZ

36 B3i Website, https://b3i.tech/home.html, accessed October 2018.

Trend 07: AI and analytics aid fraud detection and loss prevention

P&C insurers are leveraging AI and analytics to bolster fraud detection and loss prevention capabilities.

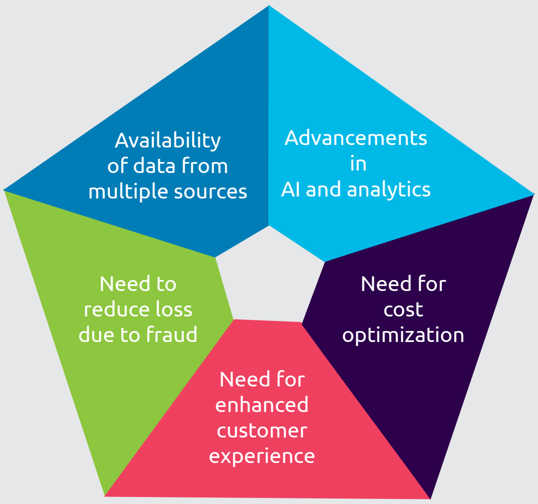
Background

- The insurance industry is moving from the traditional risk-transfer model to a risk-prevention model that helps to prevent losses and reduce claims costs.
- 3 to 4% of all claims are fraudulent and carriers that use machine learning report an end-to-end time reduction of up to 15 days for fraud cases, according to a Reinsurance Group of America study.[37]

Key Drivers

- Advancements in AI and analytics enable organizations to process huge volumes of structured and unstructured data captured from multiple sources.
- High margin pressure is forcing P&C carriers to intensify cost optimization and operational efficiency.
- According to estimates, insurance fraud costs P&C carriers $34 billion each year, which is encouraging better prevention capabilities to help reduce margin pressures.[38]

Exhibit 9: Drivers for Adoption of AI and Analytics for Fraud Detection and Loss Prevention

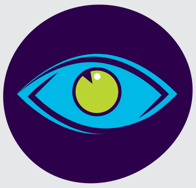


Source: Capgemini Financial Services Analysis, 2018

37 Reinsurance Group of America website, "RGA 2017 Global Claims Fraud Survey," February 16, 2018, https://www.rgare.com/knowledge-center/media/research/rga-2017-global-claims-fraud-survey, accessed September 2018

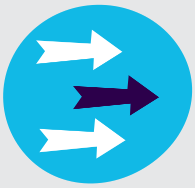
38 Insurance Information Institute, "Background on: Insurance fraud," November 6, 2017, https://www.iii.org/article/background-on-insurance-fraud, accessed September 2018.

Trend Overview



- Insurers are leveraging AI and predictive analytics to anticipate future loss events and minimize or prevent incidents:
  - U.S. corporate carrier Allianz Global Corporate and Specialty partnered with science-based analytics firm Praedicat to predict future catastrophe liability risks by using data analytics and predictive modeling.[39]
- P&C insurers are leveraging data from a variety of sources such as telematics, connected devices, and mobile to enhance their risk modeling capabilities and engage in proactive loss prevention:
  - U.S.-based InsurTech Root Insurance uses an AI-based system and driving data drawn from its mobile app to measure a driver's risk characteristics and sets premium prices accordingly:[40]
    - Root does not cover drivers who exhibit risky traits according to its rating model.
    - Root's business model aims to minimize the occurrence of future loss events.
- Using AI and analytics on data streams from social media and connected devices, insurers are improving fraud detection and prevention capabilities:
  - Allstate forged a partnership with U.S.-based Carpe Data to use the InsurTech's data and predictive scoring products to improve risk assessment and decision making while reducing claims investigation costs.[41]

Implications



- P&C insurers can reduce claims costs by practicing early risk mitigation and loss prevention through the use of predictive analytical techniques.
- Leveraging AI for fraud detection and prevention can enable insurers to decrease costs and thus reduce margin pressures.
- By engaging meaningfully with customers and assisting them with proactive loss prevention, insurers can provide better customer experience and gain loyalty.

39 Allianz Global Corporate and Specialty website, "AGCS partners with US InsurTech Praedicat to identify next generation liability risks through big data," May 11, 2017, https://www.agcs.allianz.com/about-us/news/agcs-partners-with-praedicat, accessed October 2018.

40 *Digital Insurance,* "Root looks to partner with automakers to get connected-car data," Danni Santana, October 11, 2017, https://www.dig-in.com/news/root-looks-to-partner-with-automakers-to-get-connected-car-data

41 *PR Newswire,* "Allstate Finds Fraud Faster with Innovative Data Company," November 28, 2017, https://www.prnewswire.com/news-releases/allstate-finds-fraud-faster-with-innovative-data-company-300562421.html, accessed October 2018.

Trend 08: Automation for real-time data handling is on the rise

Insurers are investing in automation of internal processes to improve real-time data handling and offer customers seamless services.

Background

- P&C carriers are increasingly using real-time data capturing tools to build a rich database of customer information:
  - According to the *World Insurance Report 2018*, 18.3% of respondents said they had developed full real-time data collection infrastructure while another 24.4% said that they were building a front-end interface for real-time data capturing.[42]
- Carriers can leverage automation to gain actionable insights from advanced analytics platforms.

Key Drivers

- Ways to deliver seamless customer service, reduce waiting times, and execute error-free processing keep insurers up at night.
- Carriers need systems that can immediately handle and process huge volumes of real-time data that is now available.
- The rapid pace of technological evolution is enabling intelligent automation of systems.

Trend Overview

- Insurers are investing in automation from sources such as telematics and connected devices to handle the vast volumes of data available:
  - U.S.-based pay-per-mile insurer Metromile's Connected Insurance Platform provides real-time insights into customer lifetime value and improves their claims journey by leveraging data from multiple sources/sensors.[43]
- Automation of internal process using RPA and AI – from quoting, underwriting, and policy servicing to loss reporting and claims processing – enables insurers to deliver seamless, convenient, and personalized customer service:
  - Allianz Global Assistance introduced a SmartBenefits suite for travel insurance plans:[44]
    - The insurer monitors flights and automatically files a claim on behalf of the customer in case of delays.
    - The policy also offers automated claims payments for greater customer convenience.

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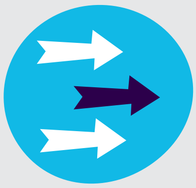
42 Capgemini, "World Insurance Report 2018," https://www.capgemini.com/service/world-insurance-report-2018/, accessed October 2018.

43 *PR Newswire,* "Metromile Announces Strategic Enterprise Partnership To License Connected Intelligence Platform," August 07, 2018, https://www.prnewswire.com/news-releases/metromile-announces-strategic-enterprise-partnership-to-license-connected-intelligence-platform-300692729.html, accessed October 2018.

44 *PR Newswire,* "Allianz Global Assistance Launches SmartBenefits(SM) That Pay Customers in Real Time for Flight Delays," August 23, 2018, https://www.prnewswire.com/news-releases/allianz-global-assistance-launches-smartbenefitssm-that-pay-customers-in-real-time-for-flight-delays-300701438.html, accessed October 2018.

Exhibit 10: Benefits for Insurers Automating Their Internal Processes

Source: Capgemini Financial Services Analysis, 2018



Implications

- Automation of internal processes can enable insurers to optimize costs and improve operational efficiencies to improve profit margins.
- Automation can boost human staff productivity, and enable them to focus on complex tasks or exceptions.
- Real-time data handling capabilities can enable insurers to generate immediate actionable insights and provide clients with superior insurance experience, enhancing loyalty.

Trend 09: InsurTech firms becoming the industry's R&D hub

InsurTech firms are becoming the R&D hubs of insurance carriers with a gamut of enabling services.

Background

- Partnership with innovative startups is a tactic to develop desired competencies quickly:
  - In the pharmaceutical industry firms collaborate with research organizations and university groups to drive innovation.
- Now, the insurance industry is similarly prepared to leverage InsurTech firms as its R&D hub.

Key Drivers

- Customer demand for innovative, customized services is up.
- The cost of establishing and maintaining an in-house R&D center is high, and established insurers' legacy systems compound the challenge.
- InsurTech collaboration offers a way for faster innovation and technology adoption.

Trend Overview

- The agility and ability to quickly address customers' evolving needs and expectations are key InsurTech firm strengths:
  - They embrace a fail-fast approach to innovation.[45]
  - Insurance carriers can benefit from this by collaborating with InsurTech firms to explore new solutions and keep the risk contained.
- Established insurers are participating in incubator and accelerator programs to select an appropriate InsurTech partner to develop desired technological competencies:
  - Allstate partnered with Global Insurance Accelerator, an accelerator program in the United States, to select and mentor innovative InsurTechs.[46]
  - AXA InsurTech incubator Kamet Ventures supports companies in insurance and related sectors such as protection and assistance. It led a $9.3 million funding round of UK startup Setoo, which helps online businesses build and integrate insurance products tailor-made to the customer and automatically embedded into the customer journey.[47]
- P&C insurers are also conducting insurance competitions such as hackathons to drive sustained innovations:
  - Swiss insurer Zurich sponsors the Zurich Innovation World Championship competition to identify startups that may become future partners.[48]
  - Insurance companies also utilize hackathons to attract and recruit top talents in new technologies.[49]
- These partnerships enable carriers to get easy access to sustainable InsurTech innovations, which can be used to speed up their digital transformation.

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45 Capgemini, "*World InsurTech Report 2018*," October 2, 2018, https://worldinsurtechreport.com, accessed October 2018.

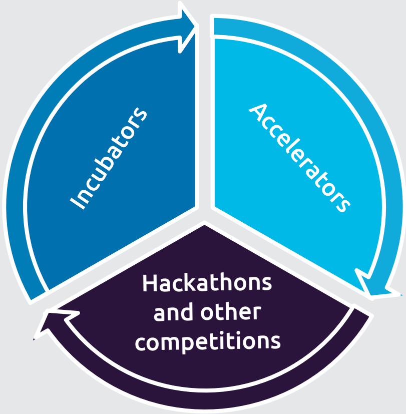
46 Allstate website, "Allstate Joins Global Insurance Accelerator to Help Foster Innovation," October 24, 2017, https://www.allstatenewsroom.com/news/allstate-joins-global-insurance-accelerator-to-help-foster-innovation, accessed October 2018.

47 *FinSMEs*, "Setoo Closes €8M Series A Funding Round," September 18, 2018, http://www.finsmes.com/2018/09/setoo-closes-e8m-series-a-funding-round.html, accessed October 2018.

48 *Insurance Journal*, "Zurich Insurance Begins Competition to Find Cutting-Edge InsurTech Startups," August 31, 2018, https://www.insurancejournal.com/news/international/2018/08/31/499857.htm, accessed October 2018.

49 Capgemini, "Growth in the Machine: How financial services can move intelligent automation from a cost play to a growth strategy," July 12, 2018, https://www.capgemini.com/resources/the-growth-in-the-machine, accessed October 2018.

Exhibit 11: Ways through Which Insurance Firms Select InsurTech Partners



Source: Capgemini Financial Services Analysis, 2018

Implications

- InsurTech collaboration can result in superior customer experience and enhanced operational efficiency for insurers, which can drive significant positive impact on profitability.
- Supporting InsurTechs via incubator and accelerator programs can be a cost-effective way to access their capabilities versus developing in-house programs.
- Insurers must select the most apt InsurTech partner, for the short- and long-term, to inspire cultural innovation and to succeed in the future competitive landscape.

Trend 10: Open platforms deliver seamless services

Insurers are coming up with open platforms and APIs to partner more efficiently with other ecosystem players.

Background

- Open platforms are flexible, facilitate better customization and support from the community, and extend plug-and-play option via APIs for easy collaboration.
- Banking industry is already moving towards open platforms at a fast pace due to regulatory changes and emergence of players with digital ecosystems such as BigTech firms:[50]
  - With BigTech firms also testing insurance waters and the emergence of InsurTech firms, the insurance industry is also gearing toward the adoption of an open ecosystem approach.

Key Drivers

- The need for providing a seamless digital experience to customers by integration of data from various sources is driving the P&C insurers to open their platforms.
- Carriers also need to simplify insurance services for customers and make it more accessible.
- Insurers also need to improve data sharing and collaboration with other stakeholders in the ecosystem.

Trend Overview

- Insurers are providing open APIs that can be leveraged by partners offering complementary services to provide seamless insurance protection to the customers:
  - AXA Singapore launched a transactional API that can be embedded into any digital ecosystem and can be used by partners to deliver real-time insurance coverage to customers.[51]
  - InsurTech CoverWallet opened its platform so that partners can integrate its insurance products seamlessly within their apps or websites using APIs.[52]
- Insurers have opened platform solutions for increased data sharing and improved technological capabilities for the industry as a whole:
  - In early 2018, Allianz set out to open source parts of its Allianz Business System platform, free of cost, for other insurers to use and jointly develop a sustainable insurance ecosystem.[53]
- InsurTechs have also come up with an open insurance approach to improve the customer journey across the insurance value chain:
  - To develop a policy that is simple, approachable, and relevant for customers, U.S. InsurTech Lemonade has set up an open source insurance policy to encourage insurance community collaboration.[54]

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50 *FinTech Futures,* "Open banking: what you need to know," January 23, 2018, https://www.bankingtech.com/2018/01/open-banking-what-you-need-to-know, accessed October 2018.

51 AXA website, "AXA Turns Insurance-as-a-Service A Reality By Launching Region's First Partner Transactional API," November 13, 2017, https://www.axa.com.sg/latest-news/axa-turns-insurance-as-a-service-a-reality-by-launching-regions-first-partner-transactional-api , accessed October 2018.

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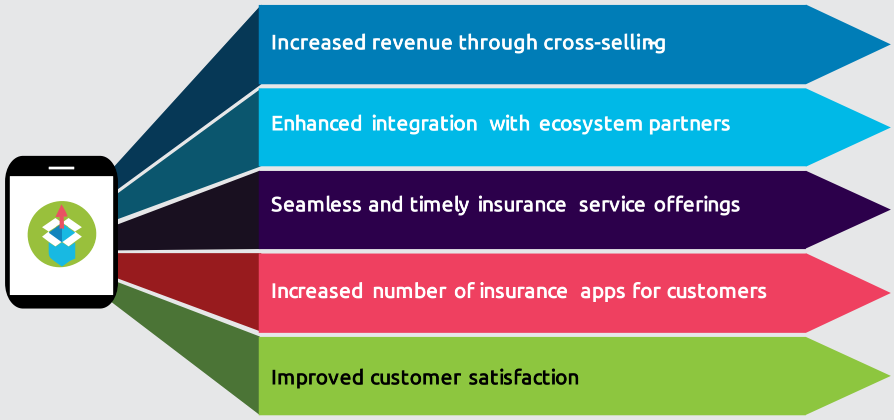
53 Allianz website, "Allianz sets up open platform," January 29, 2018, https://www.allianz.com/en/press/news/business/insurance/180129_Allianz-sets-up-open-platform, accessed October 2018.

54 Lemonade website, "World's First Open Source Insurance Policy," Daniel Schreiber, May 16, 2018, https://stories.lemonade.com/worlds-first-open-source-insurance-policy-blog-9c3ebb70edff

Exhibit 12: Benefits of Open Insurance Platforms and APIs



Source: Capgemini Financial Services Analysis, 2018

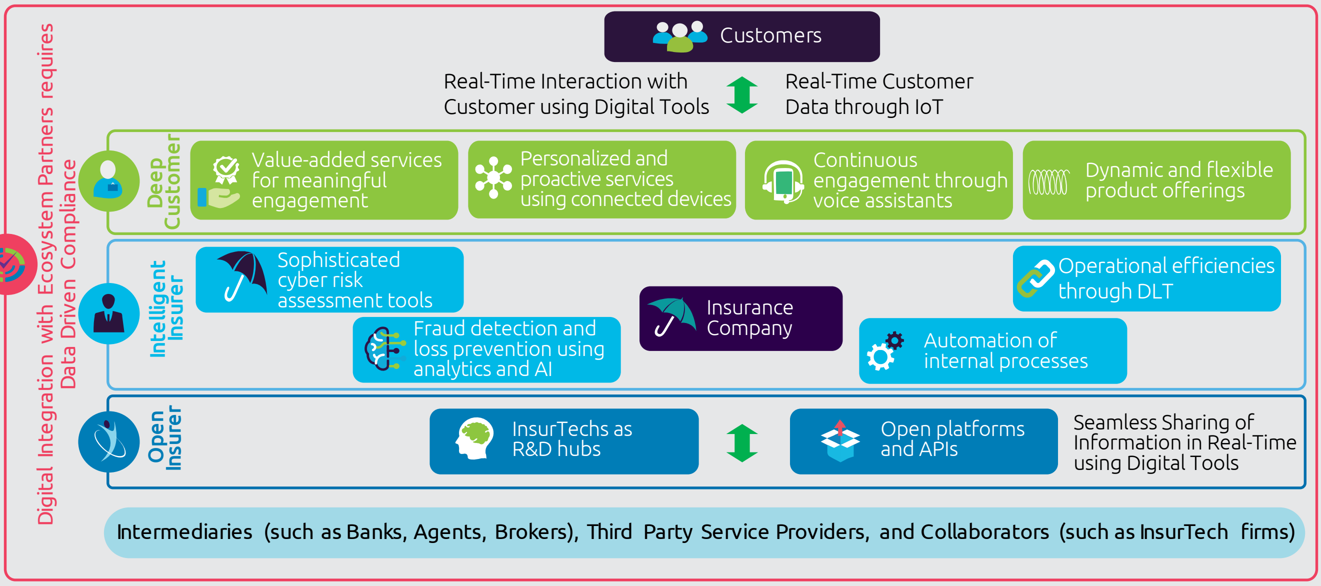
Implications

- Insurers can expand their customer base and increase top-line growth by using open APIs to enable sales via partner platforms.
- Seamless and timely insurance offerings from different partner sites can help insurers enhance customer satisfaction and improve customer journeys.
- Increased data sharing among ecosystem partners can lead to efficient customer service.

Conclusion

Advancements in technology are driving new and disruptive models in the P&C insurance sub-sector while also gradually reorienting the industry around the customer. P&C insurers will form a digitally-integrated ecosystem with customers and partners to streamline the customer's entire insurance journey. Thus, rather than customers transacting separately with intermediaries, insurers, third-party vendors, etc., these players will work with each other through integrated, digital interfaces to deliver a seamless experience to customers.

Exhibit 13: P&C Insurance Industry Evolving Into a Digitally-Integrated Ecosystem



Source: Capgemini Financial Services Analysis, 2018

Insurers are enhancing customer connectedness by enabling anytime/anywhere service access through voice assistants and by raising customer engagement frequency through value-added services. They are leveraging digital tools and analytics to cater to customer needs by providing dynamic and flexible products and highly-personalized offerings.

Technologies such as APIs are enabling insurers to more effectively integrate with partners such as agents and intermediaries, InsurTech firms, third-party vendors for claims, and third-party applications for distribution. This partner ecosystem may eventually expand to include BigTechs such as Amazon as new distribution channels.

Better integration within insurance organizations has become a priority with the help of technologies such as RPA, AI, DLT, and advanced analytics to execute data-driven, automated processes.

In a changing market and ecosystem, it will be important for insurers to build underlying attributes to remain relevant and competitive. They should become ***intelligent insurers*** by building real-time data capture and cognitive processing capabilities to derive richer insights for decision making and design of offerings. They should build *a* ***deep customer*** focus to enhance customer access to services and realign strategies to meet changing customer expectations.

With the rising adoption of mobile apps and connected devices by both insurers and customers and with more real-time customer data being stored, ***data-driven compliance*** will be critical for insurers. Finally, becoming an ***open insurer*** to collaborate effectively with other players will enable strong competitive positioning in the future ecosystem.

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About the Authors

Saurav Swaraj is a Senior Consultant with the Market Intelligence Team in Capgemini Financial Services SBU with more than four years of consulting and strategic analysis experience across multiple sectors including insurance.

Dharini S is a Strategy Consultant with the Market Intelligence Team in Capgemini Financial Services SBU with two years of consulting and strategic analysis experience in the IT and insurance sectors.

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