



Enabling the future of underwriting

A digital road map

kpmg.com/us/insurance







Contents

Introduction	3
Market dynamics	4
Role of technology in the underwriting process of the future	5
The underwriting value chain continues to evolve	9
Underwriter of the future	11
Getting there	13

Introduction

With the insurance industry awash in data from a variety of sources and devices, underwriters are under pressure to collect and combine just the right mix of available data and use it to assess the risk accurately, personalize the customer experience, and issue the policy in less than a day.

Although some insurers are ahead on this front, we believe it is time for the industry to transform underwriting. Insurers not doing so already need to leverage disruptive technology tools, providing more bespoke information regarding risk that improves underwriters' ability to do their job.

This endeavor is not a one-and-done deal. Constant vigilance and continuous improvement affecting underwriting is vital.

We advocate insurers ease the burden on underwriters by orchestrating a variety of emerging technologies that enable digital labor, new data sources enabled by the Internet of Things (IoT), analyze customer behavioral data, and establish digital channels for real-time solutions.

Though complex and capital intensive, the potential to pay robust dividends is significant. In some ways, the industry has no choice. Either step up or step away because the race is on.

A report by the World Economic Forum suggests that "the most imminent effects of disruption will be felt in the banking sector; however, the greatest impact of disruption is likely to be felt in the insurance sector."

Underwriter transformation is essential, and we offer ideas in this report to address the emerging challenges. We invite your thoughts on our point of view. So let's begin a conversation.



Mike Adler

Principal, Management Consulting, Insurance Practice

"Insurers need to embrace a 'digital and agile' mind-set in their culture as well as in day-to-day operations. Underwriters of the future, will need to adapt to product, pricing and other changes swiftly, across the underwriting value chain by leveraging enablers such as digital labor, predictive analytics and insure techs to optimize performance results."



Gary Plotkin

Principal, Advisory and Leader, U.S. Management Consulting, Insurance Practice

"The role of the underwriter of the future will be more of a custodian, integrator, and collaborator of the end-to-end process. They will have to make quick and accurate policy decisions in a more cost-effective manner. An underwriter will be an integrated profit-and-loss professional assisted by automated and analytics-based decision-making systems, and they will be responsible for resolving any escalations with the help of the artificial-intelligence-based system."



Prateek Saxena

Director, Management Consulting, Insurance Practice

"Digital labor, data analytics, and behavior-driven models are some of the leading technology drivers that have the potential to disrupt and transform the entire insurance underwriting value chain in an unprecedented way. As underwriters embark on the transformative journey, understanding the value and impact of technological enablers, such as big data, digital labor and analytics, will be the key to maximizing the value of the underwriting function."

Market dynamics

An untapped insurance market, changing customer preferences, growing population of tech-savvy millennials, and emerging technological disruptions have driven insurers in the United States to change their growth strategies to stay ahead of the competition. Customers increasingly expect insurers to provide personalized offerings through a variety of digital channels. Therefore, it has become imperative for insurers in general, and underwriters in particular, to respond to these changes.

Today's customers expect insurers to provide broader coverage aligned with their usage, behavior, and preferences through a channel suitable to them. Contextualized and digitized insurance products will proliferate to mitigate the risk at the point of need. Both incumbents and innovators are developing solutions to cater to the increasing demand for transparency and flexibility to choose the right policy, often without an agent.

The ongoing disruption forces carriers to reinvent their products, pricing, and processes to address new customer expectations to stay relevant in this competitive market.



Role of technology in the underwriting process of the future

Technology will continue to play an increasingly important role in disrupting the underwriting value chain in an unprecedented way. Digital labor, data analytics, and behavior-driven models are some of the leading drivers that are likely to change the underwriting landscape in the near future.

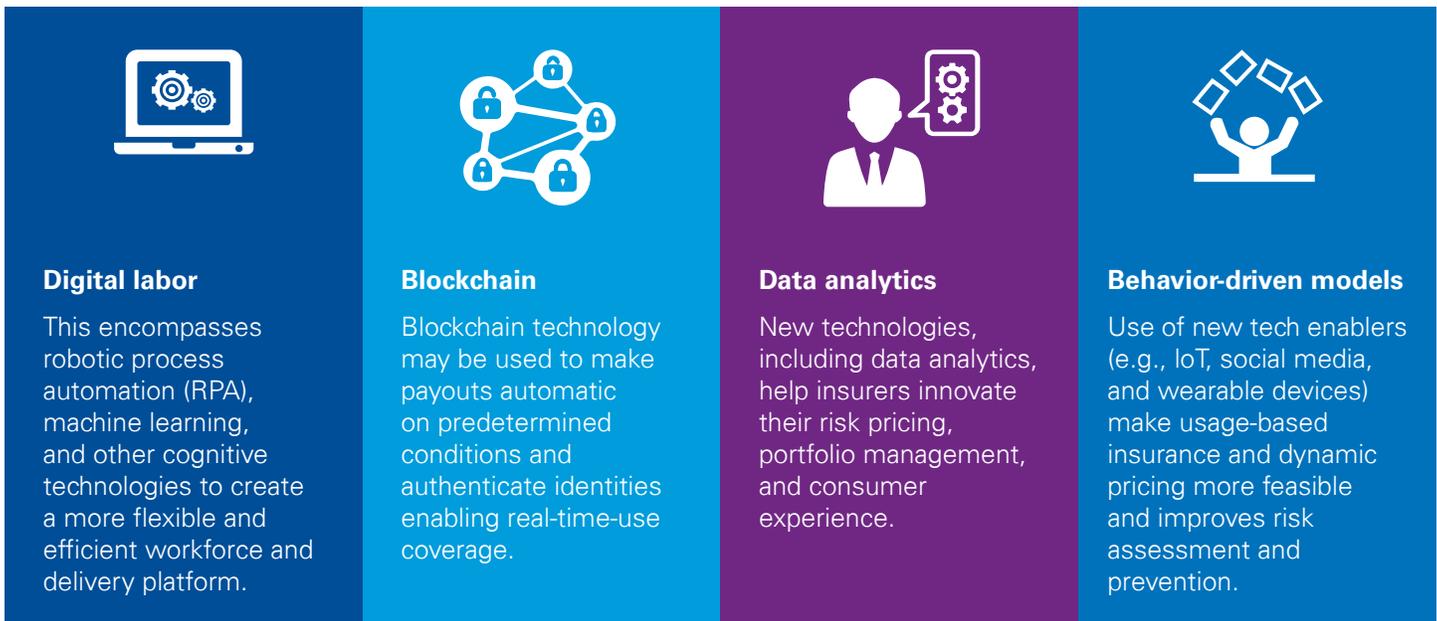
Underwriters are exploring technological options that can help create a more flexible and efficient workforce and delivery platform. These technologies can be deployed across the underwriting value chain—from data gathering to risk profiling to finalizing the price of the policy.

It provides room for more innovation and flexibility in risk assessment and pricing while improving the consumer experience. By harnessing the power of data collected via the IoT, social media, and wearable/connected devices, insurers can provide more customized policy programs catering to the specific needs of policyholders, along with dynamic pricing. Furthermore, it enables insurers to provide real-time, usage-based coverage, such as car insurance based on mileage driven.

Technology is not only helpful in risk assessment, but also in prevention of some risks. Underwriters are using technology to process vast amounts of unstructured data while continuously learning from human interaction with data. For instance, insurers could alert their customers of upcoming risks beforehand on their wearable and smart-home devices.

As a direct result of these technologies, a multitude of specialized vendors have emerged to partner with insurers and allow them to deliver better value to the end customer.

Figure 1: Emerging technology (platforms) disrupting life insurers



Digital labor

Automated underwriting continues to be one of the top priorities for insurers. Artificial intelligence helps underwriters understand and act promptly on emerging trends, identify operational issues or opportunities in real time, and price risk more accurately. It promises better decision making and faster processing, leading to higher profits. New automated underwriting workstations improve the application process flow, leading to better customer service and increased productivity.

- Automation is used to screen an applicant’s information and flag risk factors that an underwriter must review carefully.
- Automated underwriting uses a framework-based approach for underwriting decisions and escalates any exceptions in the process.
- Cognitive computing can also provide underwriters with the feedback for continuous improvement over time and empowers them with more details.
- Developments in cognitive computing will advance automated solutions by scaling expertise, bringing more consistency to underwriting decisions. These solutions can make decisions more consistent and precise and the process faster and more cost-effective.
- A data-driven underwriting process is expected to reduce the time-consuming process of application-based data collection by reducing the points of manual failure.

Industry examples

A leading life insurance company offers a complete digital automated underwriting process for qualified applicants, resulting in time and cost savings.

A leading reinsurance company assesses risks with the help of cognitive computing and improves the underwriting processes by leveraging unstructured data by partnering with IBM Watson.

Data analytics

Big data analysis is revolutionizing underwriting as copious amounts of real-time digital customer data is now readily available to underwriters for risk analysis. Currently, more than 4 trillion gigabytes of digital data is present in the world, and it is forecasted to reach 44 trillion gigabytes by 2020.¹ Data produced by customers is used by underwriters for monitoring and analyzing specific trends and patterns, leading to customized offerings of insurance policies. Further, predictive analytics is used to leverage models that determine underwriting decisions based on current and historical data.

- Underwriters are increasingly capturing and analyzing data generated through predictive analysis to appropriately ascertain the price of insurance.
- They are also using information from social media sites to improve their understanding of customers' behavior and risk profile.
- Insurers are interested in better utilizing data generated through smart wear, which produces real-time data.
- The insurance industry is increasing the use of generalized linear models, credibility techniques, and credit-scoring models as part of new modeling for driving underwriting decisions.
- Insurance underwriters leverage telematics to monitor customers' behavior to improve risk assessment.

¹ "Data Growth, Business Opportunities, and the IT Imperatives," EMC Digital Universe, <https://www.emc.com/leadership/digital-universe/2014iview/executive-summary.htm>, accessed on March 27, 2017

Behavior-driven models

Connected devices, particularly wearable devices, will revolutionize the underwriting process, making it more effective, faster, and cheaper. These devices can help insurers leverage real-time data to provide outcome-based services for their customers and improve the underwriting process.

- Wearable devices have made a significant amount of data available to underwriters to help them understand customer behavior and preferences, enabling them to categorize consumers in a particular risk class.
- These devices have led to the emergence of new pricing models based on continuous data analysis.
- With the growing adoption of these connected devices, insurers can incentivize customers with discounts and offers that match their data-sharing preferences.
- Notification and warning signals can be sent to policyholders to avoid health hazards, improve their lifestyle, and make them aware of potential threats.
- Connected devices in smart homes help in reducing potential claims by identifying hazards in advance. Reduction in claim leakages and saving on the operational front can lead to an overall reduction in claim costs.

Industry examples

A leading life insurance company harnesses Big Data to create 360-degree customer view using MongoDB's technology and has been considering adding social data and mobile app data to gain even better understanding of customers and products.

An auto insurance company has a "snapshot" mobile app that automatically monitors and measures drivers' data, such as time of day, mileage, and hard braking.

Industry examples

A Europe-based insurance company has partnered with a company that sells wearable fitness tracking devices and is offering insurers discounts based on the usage.

A mid-tier insurance company is offering discounts on a Web-connected smoke alarm for its homeowner policy customers.

A top-tier property and casualty company offers 10 percent discounts to homeowners and renters up to 15 percent who install pulse sensors at their homes.



The underwriting value chain continues to evolve

Insurance underwriters can leverage disruptive technologies to create a bridge among various legacy policy administrative systems, automating manual processes to eliminate duplicity of information. Agent portals, enhanced communication, and real-time visibility into the underwriting process help agents and underwriters work collaboratively. Further, rule-based underwriting is increasingly driving consistency, allowing underwriters to have a comprehensive view of both portfolio-level and detailed risks.

With increased adoption of automation and sophisticated tools, insurers of the future will be able to reduce sale-to-issue time and, thus, issue an insurance policy in a few minutes.

This efficiency is primarily driven by the optimization of the entire underwriting process. Underwriters in the future will be able to make informed decisions in minutes by leveraging gigabytes of data and complex models in the background.

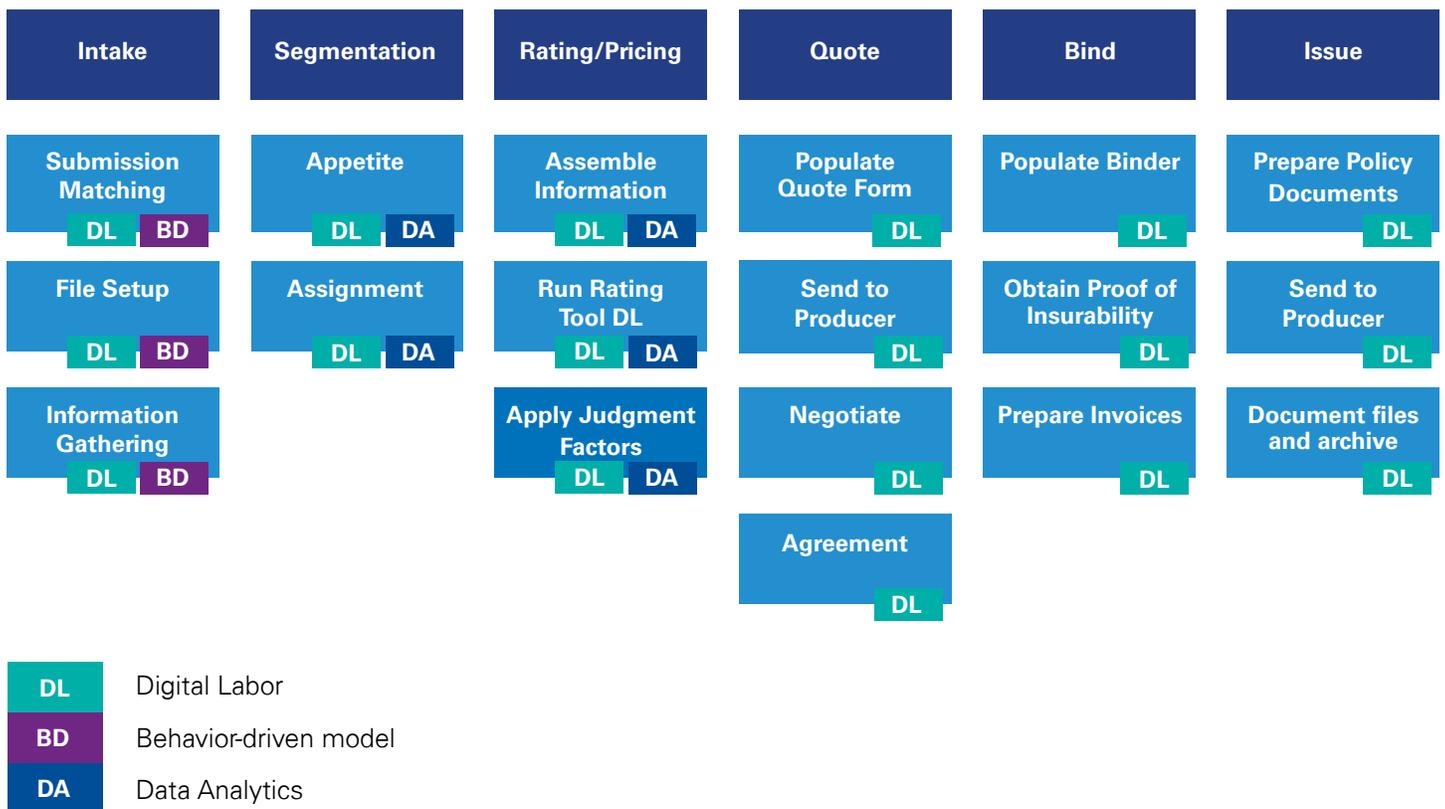
Currently, individual underwriters only spend a fraction of their time assessing risk. They are burdened with collecting, combining, and reviewing documentation for submissions, with heavy reliance on a few highly skilled

resources. Mostly, all these are manual tasks, which leave an underwriter with very limited or no capacity to consider more data, such as historical performance, or learn from past experience to accurately assess risk.

With the emergence of robust technology, underwriters will be able to perform more accurate and more informed risk assessments in a fraction of the time it currently requires. This will lead to spare capacity of the underwriting resource to identify cross-selling opportunities, earn new businesses, retain existing policyholders, and increase underwriting profits while maintaining competitiveness.

Opportunities in underwriting process

UW Value chain continues to adapt to further automation to drive a highly efficient environment for each UW sub- function.



Please refer to "Figure 1" on page 6 for the details of Digital Labor, Behavior-driven model, and Data Analytics.

Underwriter of the future

In addition to the transformation in customer experience, an underwriter's role is expected to undergo a significant change. Within a typical traditional underwriting model, responsibilities and goals may not be aligned across the value chain. There is an opportunity to reshape the traditional underwriter role into an integrated profit-and-loss professional who benefits from automation of repeatable tasks, assisted decision-making from data science, and integration of key aspects of claim services and risk control.

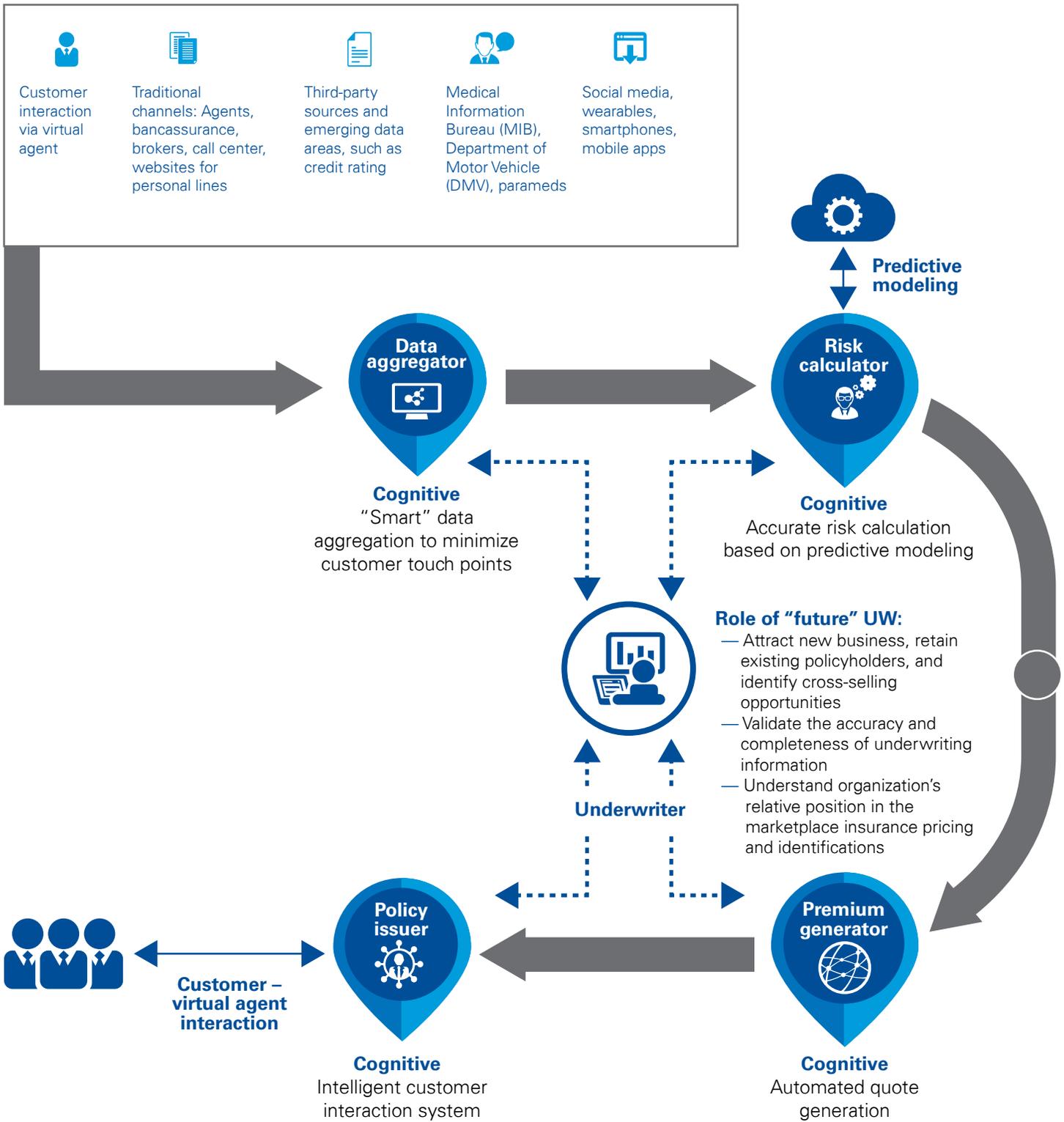
The role of the underwriter of the future will be that of a "collaborator" of the end-to-end process, who completes quick and accurate policy decisions in a more cost-effective manner. The role of the underwriter of the future will emerge as a custodian and integrator.

- An underwriter is likely to emerge as a custodian of the overall underwriting process rather than as an actual task performer.
- An underwriter will be an integrated profit-and-loss professional who will be assisted by automated repeatable tasks and analytics-based decision making.
- An underwriter's role will be primarily to resolve any escalations with the help of the artificial-intelligence-based system. The number of these instances will decrease gradually.

The role of the underwriter of the future will be that of a "collaborator" of the end-to-end process, who completes policy decisions quickly, accurately, and in a more cost-effective manner.



Figure 2: Role of the future underwriter



Source: KPMG Research

Getting there

As insurance underwriters progress down the transformational path, changes across the underwriting value chain have brought chief executive officers to a crossroads. Now, the question is not about whether to move forward, but about the route to be taken. It is a challenge to manage many moving parts, involving a range of processes in the underwriting value chain with limited concrete success stories. It is recommended that the path forward be evaluated based on the current situation, corporate strategy, and profit-and-loss goals.

As underwriters embark on the transformative journey, understanding the value and impact of technological enablers, such as big data, digital labor, and analytics, will be the key to maximize the value of the underwriting function.

Insurers can respond to the future in two ways—by building in-house technologies and capabilities or by setting up partnerships with a multitude of vendors, including InsureTech and data analytics players, to leverage their robust technological solutions. While the former requires insurers to build expertise in a number of noncore areas—a task that is time consuming and riddled with many known and unknown challenges—the latter allows insurers to leverage existing expertise of established players in a variety of areas and expedite the implementation to realize benefits. The likely approach will involve a mix of these two ways.

Irrespective of the path taken, insurers need to assess existing in-house expertise and future requirements while considering the impact of changing market conditions, evolving customer expectations, and growing technological risk on their current underwriting function.

Action map for insurers

1. Educate yourself about disruptive potential of new-age technologies to bring more efficiency across the underwriting value chain.
2. Analyze use cases that will have the greatest impact on underwriting to drive profitability.
3. Build a strategy and road map to improve the underwriting function.
4. Evaluate existing processes and platforms to understand their ability to serve as well as estimate the gaps.
5. Modernize platforms and applications by in-house technology or strategic alliances.
6. Identify the vendors that will fit your organization's structure and bring in operational benefits and savings.

It is important to know which technological solutions can be built within the firm easily and quickly and which will require a value-added partner. The acquisitions of InsureTech firms can give these incumbent insurers overnight access to the software and technologies that they probably would not be able to develop on their own. A partnership with third-party data vendors and analytics firms can help them mine enormous amounts of data available for their connected customers and incorporate predictive analytics to improve risk selection and target the right customers for new business development.

Going forward, insurers need to inculcate a “digital mind-set” in the firm’s day-to-day operations and overall culture to consolidate disparate systems and rationalize their underwriting value chain as an ongoing exercise. Underwriters focusing on the development of their infrastructure and deploying new technologies will be well-positioned to take advantage of new opportunities as they emerge. They need to develop an agile and dynamic system to enable greater connectivity across the value chain and empower underwriters to anticipate and react to disruptive headwinds. “Underwriters of the future” need to adapt to them swiftly and assess the “speed of adoption” to gain the first-mover advantage in this world of tech disruptions.



How KPMG can help insurers

KPMG's pioneering approach and strong credentials in implementing Digital Labor and other technologies place it as a preferred choice for global insurers to partner in their technology implementation journey.

KPMG, supported by a strong global team of more than 2,500 dedicated digital labor professionals and data scientists globally, is a leading player in implementing Digital Labor, Blockchain, Data Analytics and Behavior-driven Models. KPMG's Cognitive Automation Lab focuses on robotic process automation (RPA) implementations with leading RPA vendors to help you in the end-to-end journey of:

- developing a strategy
- defining the target operating model
- identifying opportunities and building a business case
- assessing Digital Labor and other technology options
- designing and delivering solutions focused on delivering business results
- implementing a plan to address the people and organization changes necessary when adopting these capabilities.

With its strong credentials, KPMG can help you in the end-to-end journey of technology implementation, including opportunity assessment, making Digital Labor strategy, building business case, assess technology vendors, design a solution and integrate it with existing systems, run a pilot and scale it up to help insurers realize measurable business outcomes.



About the authors



Mike Adler

**Principal, Management Consulting,
Insurance Practice**

Mike is a principal at KPMG and is a leader in the Management Consulting practice. With more than 20 years of insurance and financial services experience, Mike specializes in advising and helping insurance and financial services companies transform across business and technology, leveraging digital, data and analytics, technology and operations knowledge, and experience to deliver business results. Mike also has a strong background across the full life cycle of strategy and project delivery with several \$100M+ program management experience including software development, implementations, and transformation initiatives.

Previously, Mike was an executive at IBM where he created and led the industry's first and leading practice around cognitive technology focused on financial services and insurance. Mike was also responsible for the IBM insurance industry consulting practice, where he led large transformation efforts and significant client relationships. Prior to that, Mike was a partner at PwC leading significant transformation efforts and responsible for the Insurance and Financial Services ERP practices. Prior to that, Mike worked at Marsh & McLennan, whereas program manager he led significant transformation projects across Marsh.



Gary Plotkin

**Principal, Advisory and Leader,
U.S. Management Consulting, Insurance Practice**

Gary is a principal at KPMG and leads KPMG's Management Consulting Insurance practice. Gary has 27 years of financial services experience specializing in business and IT transformation work. Gary has split his career between Advisory Services management and the roles of CIO and CTO for large and small insurance carriers. He has a strong background across the full life cycle of strategy and project delivery with several \$100M+ program management experience including software development, implementations and transformation initiatives. Gary's past clients include leading entities in the financial services industry.



Prateek Saxena

**Director, Management Consulting,
Insurance Practice**

Prateek has over eighteen years of professional experience in the insurance industry with focus on digital transformation. He worked with several FORTUNE 500 insurance clients to conceptualize the innovative vision and then drive business/IT operating model impacts, customer centricity, and core functional IT transformation.

His educational background includes an MBA degree from Columbia Business School and an engineering degree from Indian Institute of Technology.



Contact us



Mike Adler
**Principal, Management Consulting,
Insurance Practice**
T: 212-954-1795
E: michaeladler@kpmg.com



Laura Hay
National Sector Leader, Insurance
T: 212-872-3383
E: ljhay@kpmg.com



Matt McCorry
National Advisory Leader, Insurance
T: 212-954-3945
E: memccorry@kpmg.com



Gary Plotkin
**Principal, Advisory and Leader,
U.S. Management Consulting,
Insurance Practice**
T: 617-988-1181
E: gplotkin@kpmg.com



Prateek Saxena
**Director, Management Consulting,
Insurance Practice**
T: 212-954-1983
E: prateeksaxena@kpmg.com



David White
Principal, Actuarial & Insurance Risk
T: 404-222-3006
E: dlwhite@kpmg.com

kpmg.com/socialmedia



Some or all of the services described herein may not be permissible for KPMG audit clients and their affiliates

The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavor to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act upon such information without appropriate professional advice after a thorough examination of the particular situation.

© 2017 KPMG LLP, a Delaware limited liability partnership and the U.S. member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity. All rights reserved. Printed in the U.S.A. The KPMG name and logo are registered trademarks or trademarks of KPMG International. NDPPS 669822