The race in insurance for radical change already is underway

Ilanit Adesman– KPMG

June, 2019

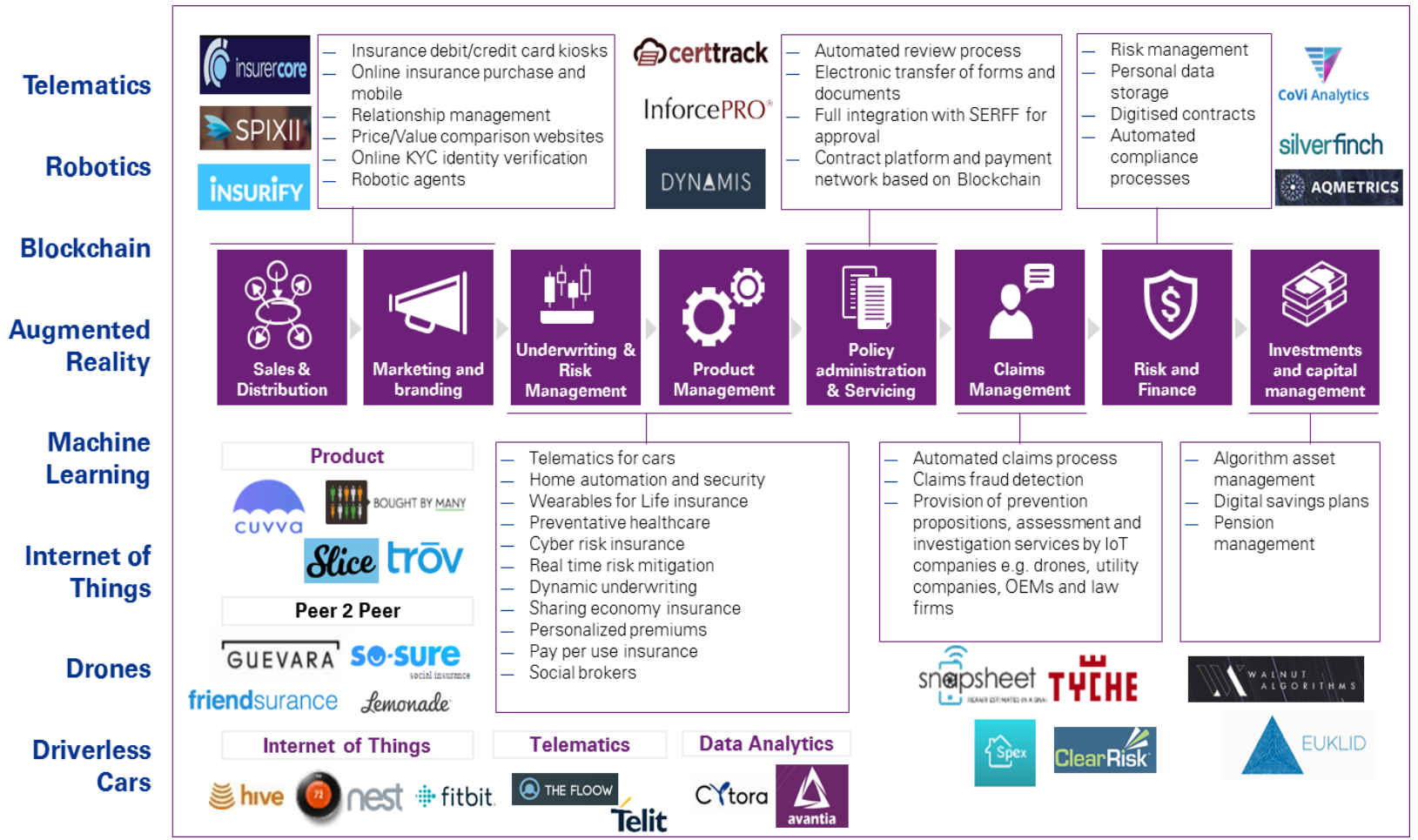
InsurTech is disrupting the value chain

InsurTech is a term used to describe how the many forms of emerging technology are applied to the insurance sector, disrupting the traditional value chain

InsurTech is not just an increase in the way that technology is disrupting the insurance industry, but is also changing consumer expectations and demands.

Customers increasingly demand innovations such as personalised cover and improved customer interaction. The industry has started to respond to these trends, leveraging Insurtech to innovate new products:

- Discounted motor insurance for installing telematics devices to track safe driving
- Gym fee reimbursements from health insurance providers for wearing a fitness tracker that reports on exercise and health
- Peer to Peer insurance cover helping you to leverage your social networks to reduce your premiums



Top 10 drivers of change in insurance

Customer experience
On-demand, customized products and service akin to Amazon

Digital transformation
Digital labor, artificial and cognitive intelligence, platform models, payments, talent, cloud, API/fintech ...and, more

Data & analytics
Adroit management of data for product, service, and strategic-planning purposes

Disruptive technologies
Disruptive technologies, such as blockchain, are driving change in the industry

Evolving tax, accounting and contract infrastructure

Cost
Improve margins through unceasing focus on labor and processes, scale

Economic shifts/geopolitics
Uncertainty related to economical and geopolitical developments; demographic shifts; credit cycle changes, interest rates

Talent management is increasingly important as a success factor, including leading millennials, skill evolution (e.g., D&A), and building the right culture.

M&A
Activity will continue at a steady pace in foreseeable future

Regulation
Uncertainty surrounding a complex and inter-connected global issue

Cyber
Constant and growing threat to the business and its customers

KPMG

Supporting Executable Strategies for the Future

Several insurers are back at the drawing board to "rethink" their business strategy under various future scenarios applying design thinking processes.

The **"strategic rethink"** can be broadly categorized into four inter-dependent objectives.

TRANSFORMING THE BUSINESS MODEL

Rethinking "where to play"

- Redefining what is core
- Evaluating adjacent markets
- Revisiting products, brands & value propositions
- Re-engaging customers, vendors & other stakeholders
- Innovative revenue models

MODERNIZING THE OPERATING MODEL

Rethinking "how to win"

- Designing centers of excellence for core capabilities & competencies
- Outsourcing, managed services
- Automation, robotics, leverage data & analytics
- Talent management: workforce of the future
- Metrics driven performance culture

ENHANCING CUSTOMER ENGAGEMENT

Rethinking "the connected ecosystem"

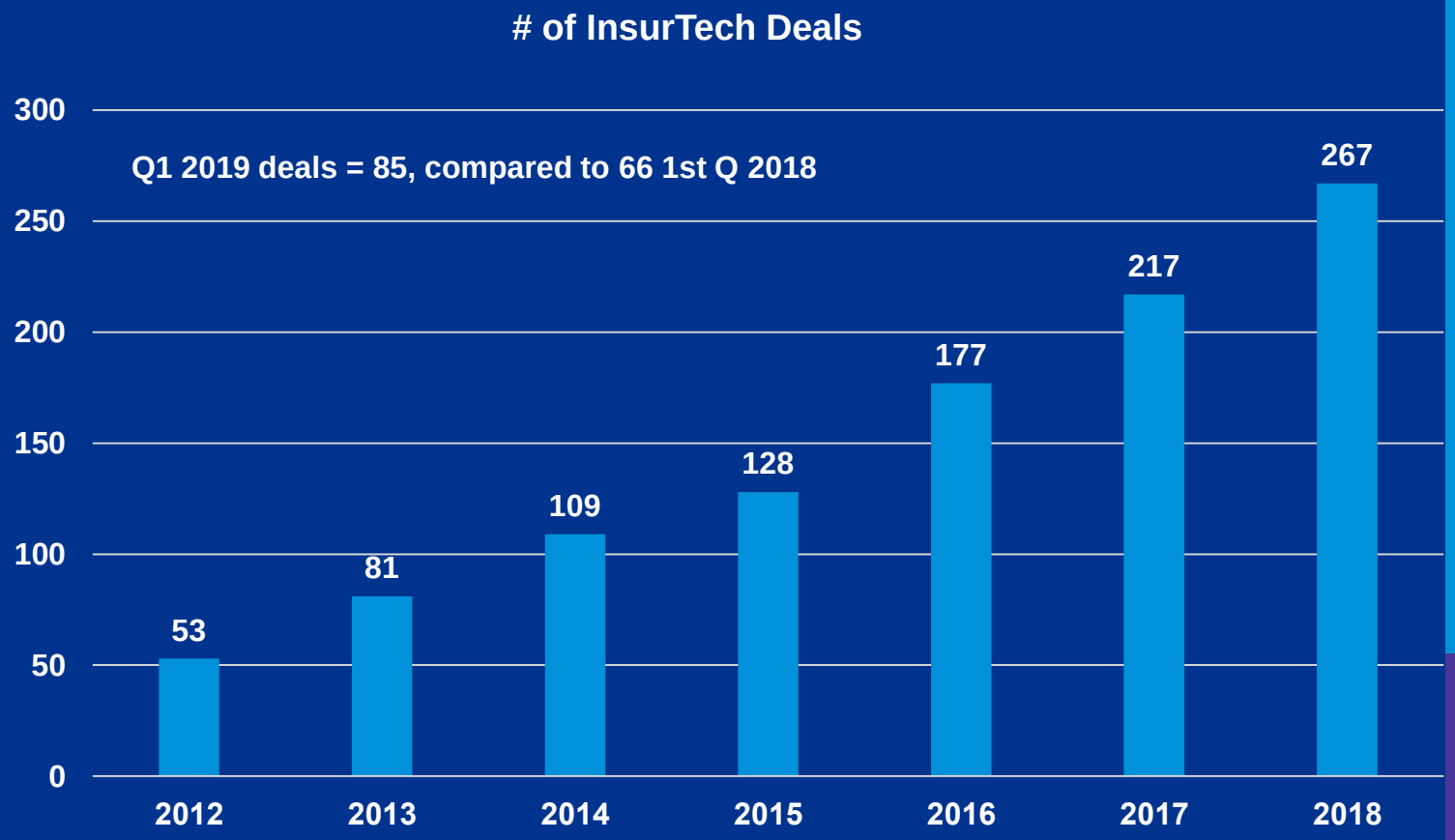
- Enabling digital distribution and a modern customer experience
- Embed data & analytics for optimized outcomes
- Customization, convenience, security
- One-stop shop, 24/7 availability

ACCELERATING INNOVATION

Rethinking "investment, acquisition, and partnering strategies"

- Accessing emerging technologies & innovation capabilities
- Prioritizing & accelerating innovation
- Scaling across the organization
- Partnering with the external innovation ecosystem
- Alignment with business strategy

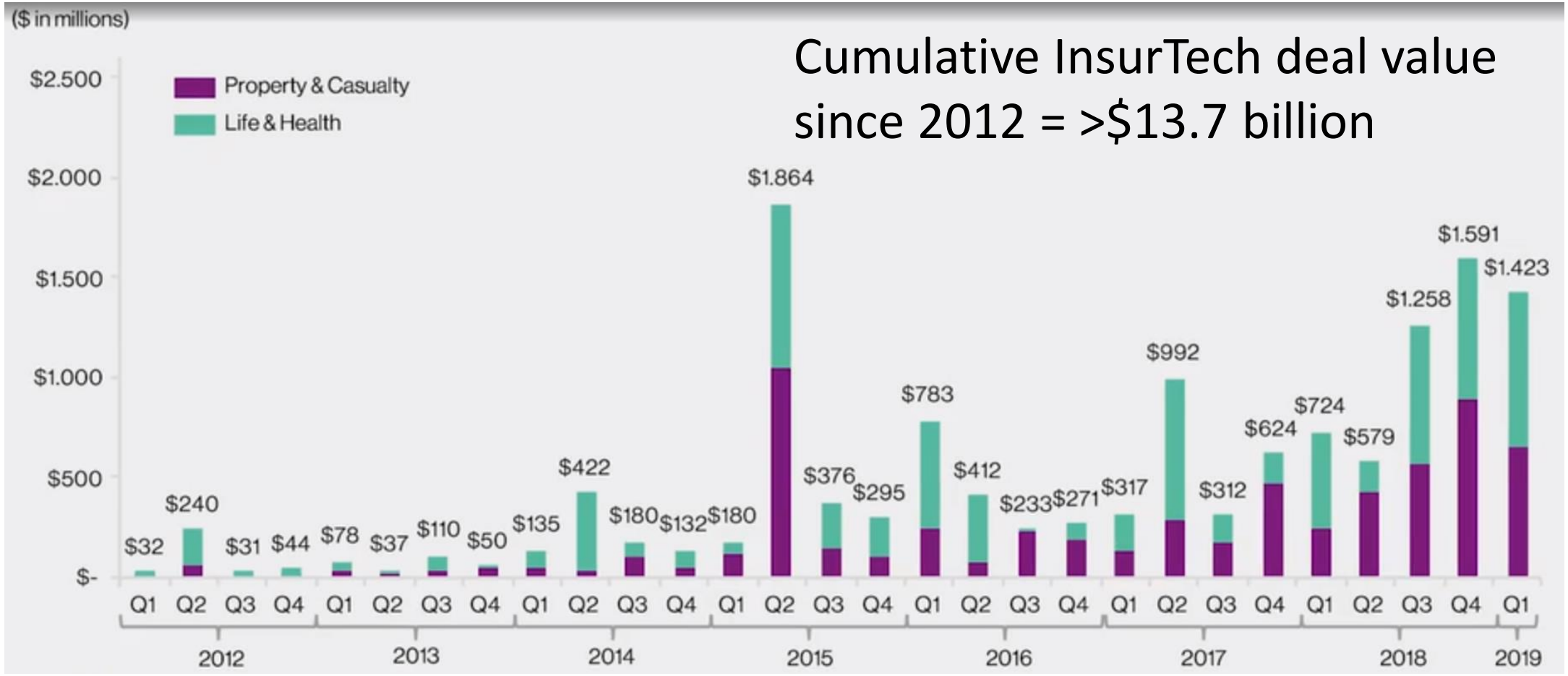
InsurTech since 2012



From a transaction count standpoint, since 2012 more than 1,100 InsurTech investments have been announced.

Source:
"Quarterly InsurTech Briefing Q1 2019." WillisTowersWatson/CBInsights, May 2019

InsurTech deal value 2012 - 2019



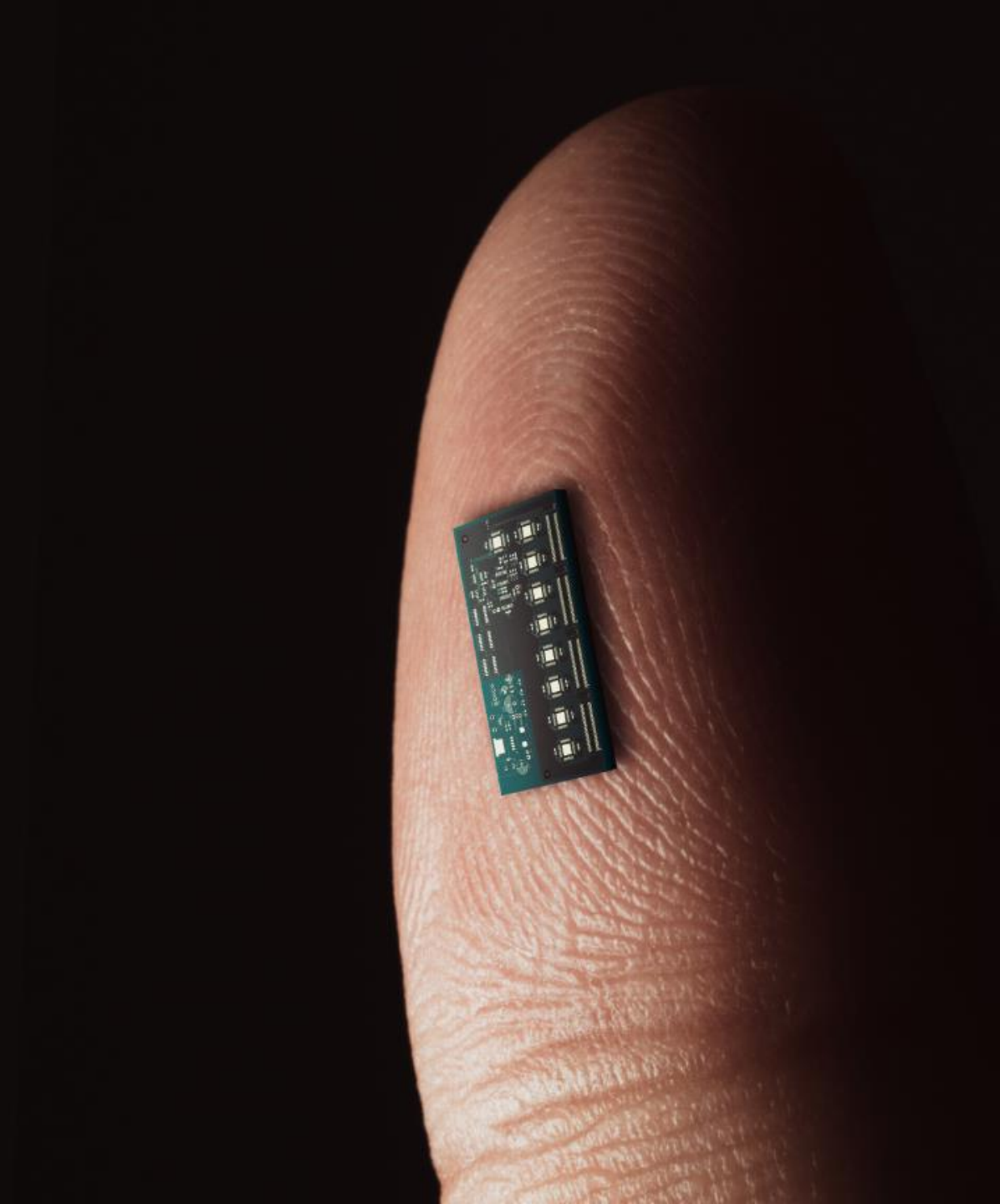
Cumulative InsurTech deal value since 2012 = >$13.7 billion

Source: Willis Towers, Watson, May 9, 2019, "Quarterly InsurTech Briefing Q1 2019''

KPMG

The Customer Counts!

Expectations for new experiences keep increasing



Customers are driving change

Customers are **empowered** through social media, giving them more **information**

High cost of legacy policy origination and claims services turn off many customers

Customers continue to look for an insurer that has their interests in mind

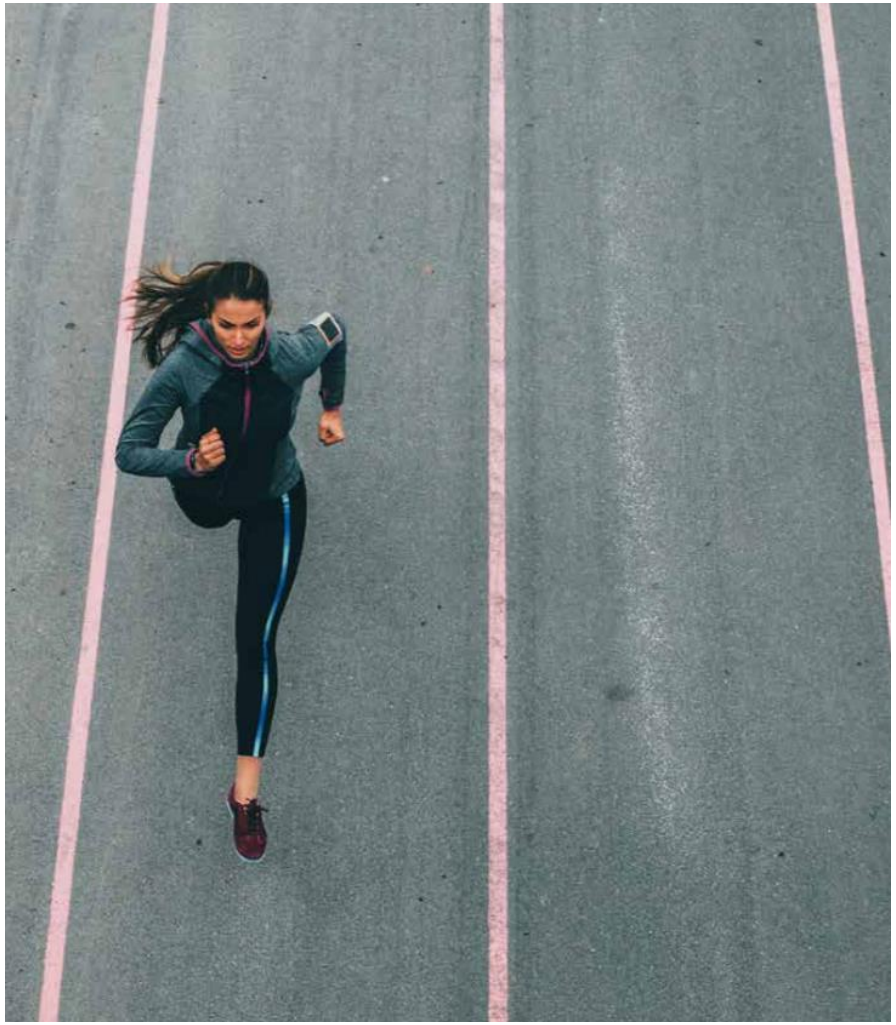
InsureTechs will continue to take more customers from traditional insurers

Newer generations must be targeted: They will be the largest age cohort in spending in the next five years and will inherit **$30T in assets over the next 20 years**[1]

Insurers must tell a better story in order to offset commoditization

Source: "Will Millennials Be Ready for the Great Wealth Transfer?'' U.S. News and World Report, July 18, 2017

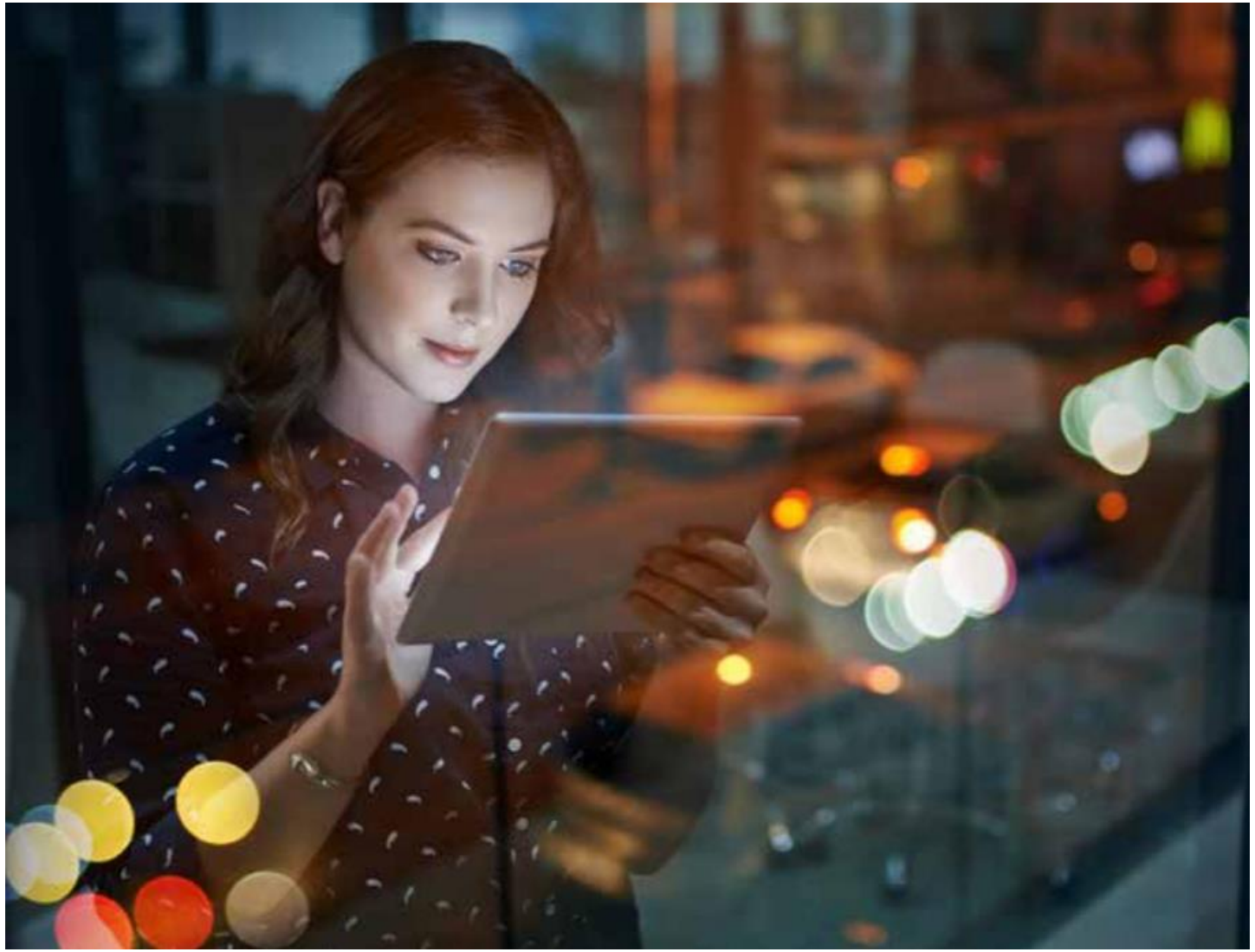
The race to reduce costs is essential



Persistent low investment returns, ever-increasing competitive pressures and enduring excess capacity have hampered the industry's ability to grow revenue faster than the rate of operating costs.

Currently, 25 percent of every premium dollar is consumed by operating expenses, a pattern that has held for the past 10 years or longer.

But managing cost starts with pleasing customers



Digital first every time

Insurers have to bridge this gap.

Placing the customer at the center of an insurer's offerings will provide insights into what customers want, what they need, how they want to consume these products and how they like to be engaged.

Insurers must pivot faster to customer demands

Insurance executives tell us that their business:

Was too internally focused for the last decade

Considers improving the customer experience as a strategic priority

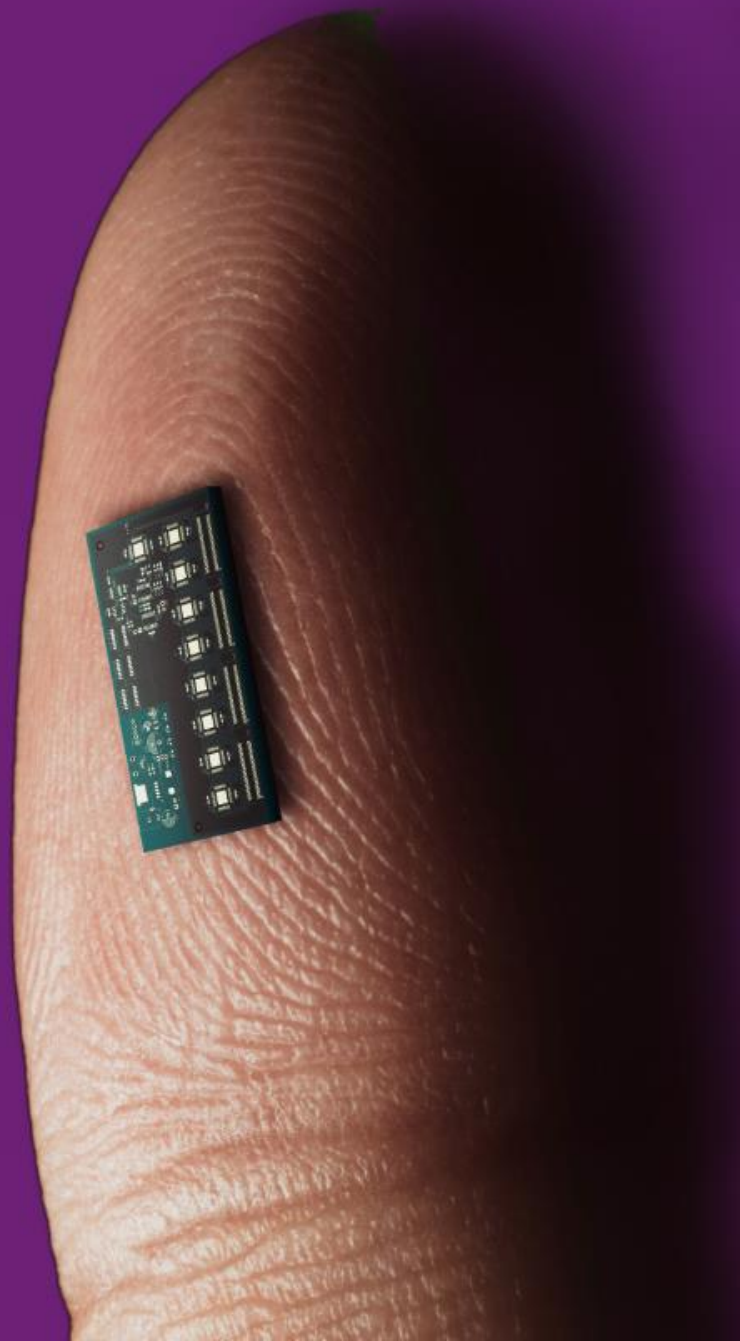
Is now regaining historic focus on the customer and how to service them better

Key trends in customer relationships

Wrapping products	Wrap products in related services and solutions in order to enhance the customer relationship … and create new sources of revenue
Prevention versus protection	Create more value for customers, and new opportunities for services, by helping them mitigate their risks and reduce the potential for loss
Proactive versus reactive	Use data to identify customers who may be subject to unappreciated risk, such as flood or fire, and engage them regarding potential actions
Customized products	Create customized products that allow customers that protect what customers value

KPMG

The Rise of A.I. and its Impact on Humans and the Organization



Who's right, who's wrong about A.I. and jobs for humans?

"**A.I. Will Save Insurance Jobs, Not Kill Them,"**

PropertyCasualty360, June 29, 2018

"The Robot Revolution Will Take 5 Million Jobs From Humans,"

MoneyWatch, January 18, 2016

"Robots Will Not Lead to Fewer Jobs,"

The Guardian, August 20, 2017

"Robot Automation Will Take 800 Million Jobs by 2030,"

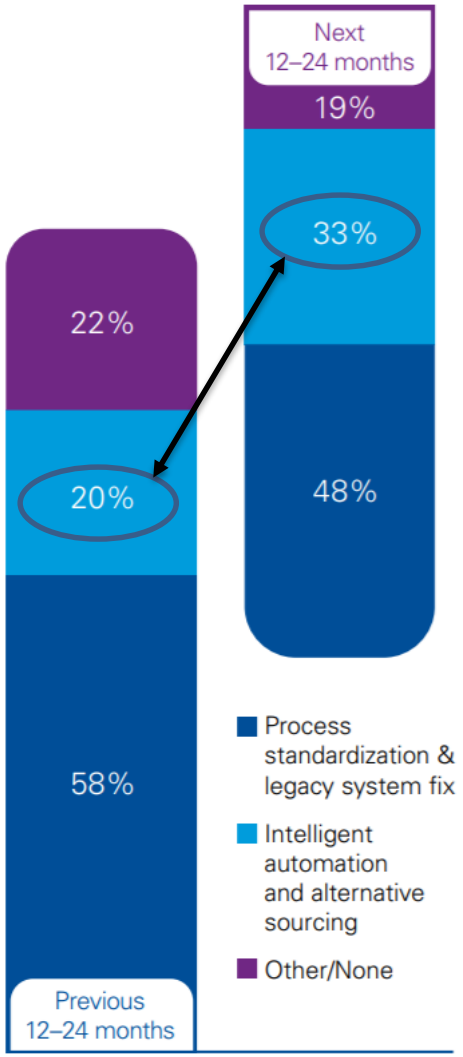
BBC News, November 29, 2017

KPMG

Intelligent automation

Insurers polled in a recently published global survey conducted by KPMG and Accord reported that they increasingly will pursue operational efficiencies through intelligent automation and alternative sourcing in the next two years.

That finding reflected a 13 percentage point increase from the previous year.



Source: "Operational Excellence in Insurance,'' KPMG 2018

KPMG

How does it work?

The technology spectrum ranges from task automation to knowledge augmentation

ACT	RULES	LEARN	REASON	THINK
like a human	**Basic process automation** – Macro-based applets – Screen-level and Optical Character Recognition (OCR) data collection – Workflow automation – Process mapping – Self-executing	**Enhanced automation** – Built-in knowledge repository – Learning capabilities – Ability to work with unstructured data – Pattern recognition – Reading source data manuals – Natural language processing	**Cognitive automation** – Artificial intelligence – Natural language recognition and processing – Self-learning (sometimes self-optimizing) – Processing of super data sets – Predictive analytics/ hypothesis generation – Evidence-based learning	like a human

Source: KPMG LLP, 2018

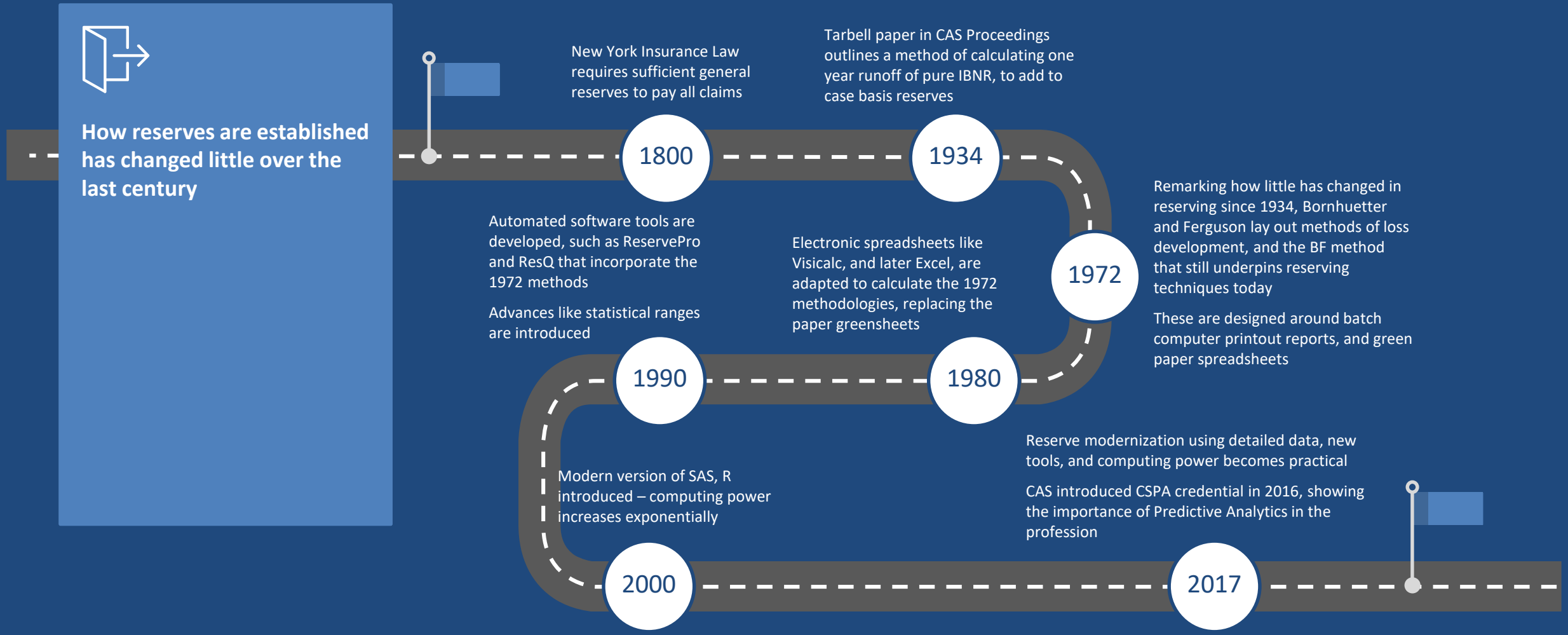
KPMG

KPMG

Actuarial Insurtech

A brief history of property casualty reserving

How reserves are established has changed little over the last century



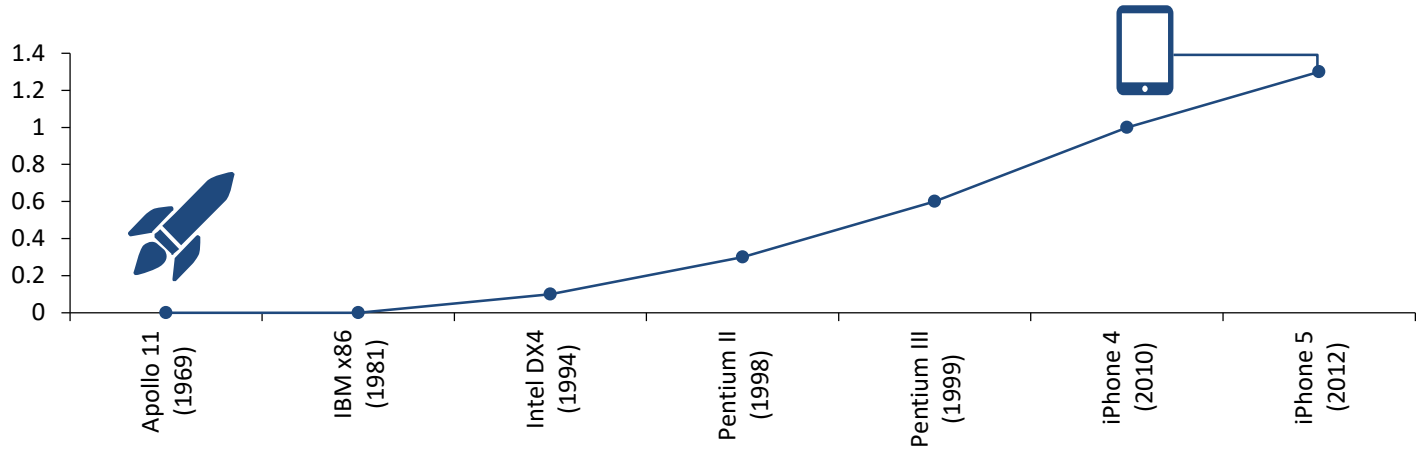
Emerging technology

Data preparation	R, HIVE, python, Hadoop, SAS
Cognitive – machine learning	SAS, R, python
Visualisation	Tableau, Qlik
Robotic process automation	Automation anywhere, Blueprism

Computing power has increased significantly over time

We have seen a 1 trillion-fold increase in computer processing capabilities over the past 60 years[(a)]

Today's smartphone has more computing power than the Apollo 11 Guidance Computer[(b)]



Note: (a) Experts Exchange, 'Processing Power Compared'
(b) Frost & Sullivan, 'Addressing Mobile Cybersecurity'

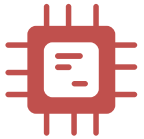
Data: Actuarial game changer

Robotics/Automation

Automating processes where there was no human judgement required – think copying and pasting/formatting data etc. Also back-end calculations (e.g. CSM, risk-margin, TMTP etc)

Data analytics

Tools that access, examine and analyse data based on pre-set criteria to accelerate assessment and decision making. Could be of predictive nature or Telematics centred



Coding

Statistical programming languages such as R, Python, Julia being used for actuarial models that are reusable, reliable and results are reproducible. DataCamp and Pluralsight are online learning portals being used by teams to learn these languages

Cognitive/AI

Automation of areas where human judgement was previously applied – e.g. underwriting/filling in data gaps. Works best where lots of past examples where algorithms (think google, facebook search engines) can be used to replicate the human judgement, with some validation for tricky cases

KPMG

Digital Actuary

Premium pricing

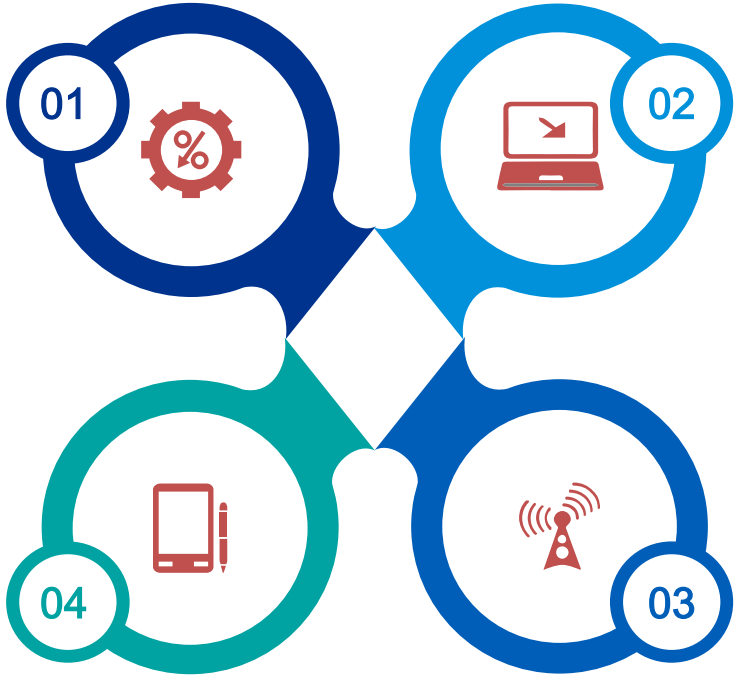
— Big Data helps actuaries further improve granularity and accuracy of classification rate-making

— Condensing the period of time under inspection guarantees a more relevant pool of information utilising current behaviours rater than relying on aggregated statistics that are based on past trends and events, making premium pricing more individualized and precise

Dynamic risk management

— Dynamic risk management is considered to be an advanced form of actuarial science. It entails real-time decision making based on a stream of data

— Having access to more information than before gives the actuary a richer basis for actuarial mathematical analysis, upgrading best estimate approaches to stochastic evidence in depth understanding of the full cycle.



Insurance reserving loss

— The biggest item on the liabilities side on an insurer's balance sheet is often the provision of reserves for future claims payments and the job of the reserving actuary is to predict, with maximum accuracy the total necessary to pay those claims that the insurer has legally committed to cover for

— However claims payment process can take years or even decades

— Insurtech changing claims transformation process

Risk pooling

— The advent of IoT has shown promise for its potential to improve risk pricing and risk pooling

— Previously, insurance portfolios needed to be big enough to have risk pools with enough diversification on other indicators that couldn't be measured. Nowadays, the behavior for each individual of a risk pool is becoming more and more predictable, removing the need for assumptions. Therefore risk pools are becoming smaller

Sources: TheActuary, Big Data, big issues, March 03, 2016; Institute of Actuaries in Belgium, Bid Data: An actuarial perspective,, November 2015

KPMG

Implications for the actuarial function

Actuarial as an insight organisation

As the function leverages AI to become a highly efficient organization, there will be more time for **focus on insight generation to drive value** creation, positioning the function in the center of the business and enabling them to shift towards being more performance centric

Actuarial must own the training data

Actuarial team will own business performance data and be stewards of training data, **actively collaborating with different groups** across the organisation, and positioning them to provide valuable insights and analysis. Actuarial teams will be positioned to effectively interpret and make connections between data sets generating datasets that are used in predictive models

Actuarial will be a platform

The platform play will allow Actuarial team to move towards a more agile, modular, plug-and-play architecture, allowing integration with multiple vendors and providers. An effective platform play means providing **Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS),** to enable a cohesive environment

Actuarial workforce must evolve to meet this changing paradigm

Data science is redefining the work of an actuarial function – what they do, how they do it, and most importantly who does it This in turn, will cause profound changes to the actuarial talent strategy, including how the team will attract, retain, and develop resources

KPMG

What does change mean for actuarial talent?

1 AI will reduce the need for traditional skillsets, but will create the **need for actuaries to develop new skillsets**

2 AI will **lead to redeployment of jobs**. Automation technologies will replace 16% of US jobs but create the equivalent of 9%.

3 As roles shift, organisations' **must address their talent strategy**, including how they recruit, retain, and develop resources

A Chief actuary needs to be able to…

Think and act globally	Align and drive Strategy	Impact performance and growth
View the regulatory burden as an opportunity	Play an active role in developing sensible policy	Leverage data & analytics to meet new requirements
Leverage new technology (cloud/digital)	Apply actuarial data and analysis to identify new opportunities (e.g., Profitable Growth)	Be the steward of data as it relates to business performance
Partner and collaborate across business functions		Deal with an ecosystem of expanding complexity
Have an operational mind set	Implement the optimal operating model	Realise efficiencies with Machine Learning
Showcase strong leadership qualities	Define a strategic workforce planning model	Rethink the employee value proposition

KPMG

Cognitive applications – Driving change

Traditional methods

Pricing

Financial reporting

Distribution channel evaluation

Target markets

Claims handling enhancement

Regulatory agility: IFRS 17

KPMG

What about AI?

General	Life	Health
— Reserve Analysis Transformation — Actuarial Pricing Transformation — Underwriting Analysis Transformation — Improve claims processing to detect fraud	— Cash Flow Projection — Mortality Table Modeling — Lapse and Surrender Analysis	— Morbidity Modeling for Long Term Care — Health Plan Enrollment Reconciliation — Medical Cost Forecasting

MITRA

These tools can be used to simplify and streamline most data processing and reconciliation, with new tools presenting opportunities for actuaries to expand their role as business experts with advanced analytical and statistical capabilities

There is no reason not to apply these throughout insurance to:

— Model consumer behaviour to target more profitable business and improve consumer outcomes

— Apply modelling and automation to improve the sales, underwriting, and claims handling processes

KPMG

Why is ActTech relevant?

HSBC promises $17bn investment in technology

12 June 2018 | 5431 views | 1

Europe's biggest bank HSBC is planning to invest between $15-$17bn in new technology as part of a new growth strategy announced by its chief executive John Flint.

PRUDENTIAL is planning to double earnings in Asia by upping investment in technology.

In an interview with Bloomberg, chief executive of the UK insurer's Asia arm Nic Nicandrou says Prudential is looking to invest more than $400m (£281m) in areas like automation and online line sales, 20 per cent more than initially budgeted.

Allianz

As a whole, the insurer has established what it calls a 'single digital agenda' to become a 'digital by default' company that is truly customer-centric. Allianz said it is spending more than $800 million annually to shape and orchestrate the 127-year-old business' digitalisation

AVIVA

'Is it Uber or Out for the Insurance Giants asks Aviva Boss?' 'We want to turn Aviva into a Fintech'

Innovation

We are disrupting the insurance industry from within. Leadership in digital will let us unlock the potential of our composite model, support growth and raise barriers to entry. You can read more about our approach on the Digital First page

AXA

IT at AXA

Everywhere in the world, thousands of AXA software engineers and data scientists work daily to develop solutions adapted to our customers, a powerful cloud offer, and to analyse big data. Their purpose: enable all business divisions to benefit from the best toots to achieve their objectives in the countries where AXA operates

KPMG

What is the future?

Resourcing

Disruption just means the role of the actuaries needs to change it's a case of augmenting the roles of actuaries not replacing them

Human actuaries will be needed to empower the real time data, non-linear models and set the premium pricings

Regulation

In some jurisdictions Insurance companies have to communicate to consumers how rating factors such as gender, age and addresses are used in pricing

As more consumer data is available from more channels, the need for privacy yet transparency about how data is being used, will increase but this will depend on your location

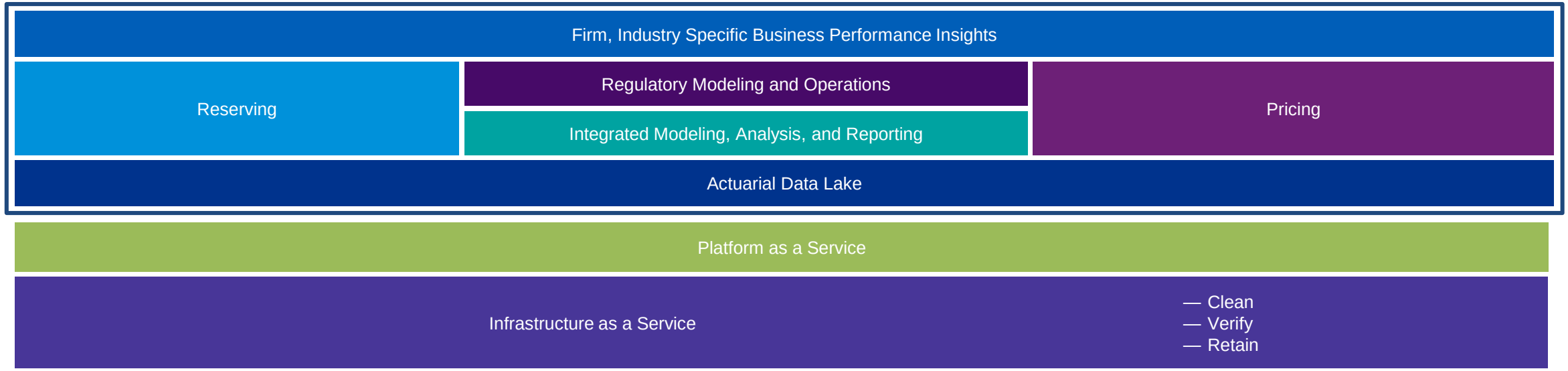
From actuarial-centric to insight-centric

1 Actuarial will move from Reserving and Pricing centric activities **to a strategic partner driving business performance**

2 The Actuarial Platform, enabled by IaaS, PaaS and SasS, will allow actuaries to move **towards an agile, modular plug-and-play environment**

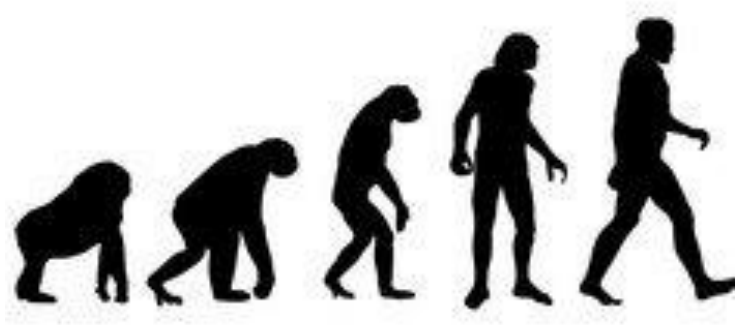
3 Actuaries will own training data and **be the steward of predictive business modelling data,** placing it at the center of the organisation

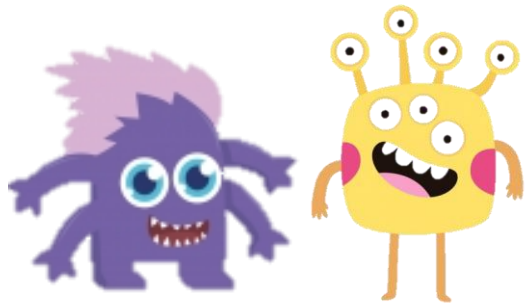
Actuarial as a Service

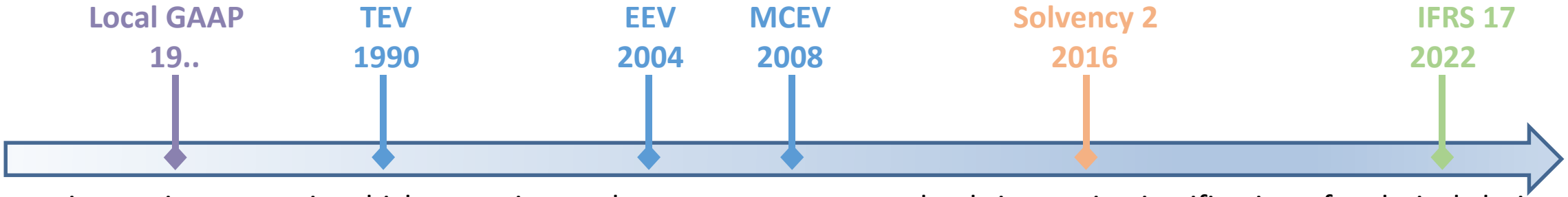


KPMG

The evolving role of actuary since Solvency 2

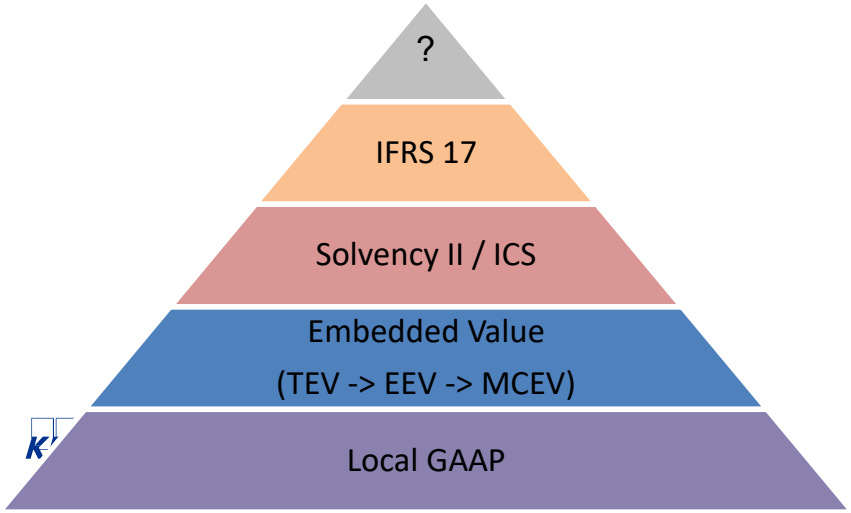


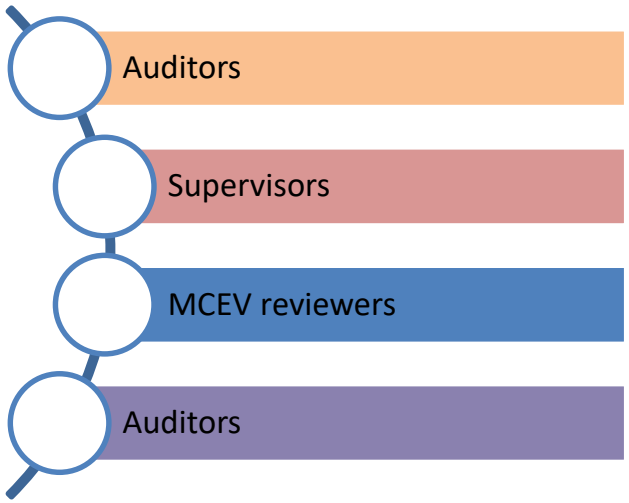




Increasing environments in which actuaries work…

…leads increasing justification of technical choices





Thank you

Ilanit Adesman, FRM