

Current Issues in General Insurance

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InsurTech - The Revolution In Insurance

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Agenda

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- 2 Current Landscape
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- 4 InsurTech - Health
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- 6 Market Issues and Considerations

1 Introduction into InsurTech

Definition

According to Investopedia, *“Insurtech refers to the use of technology innovations designed to squeeze out savings and efficiency from the current insurance industry model.”*

It’s a market created by investors who believe the time is right for technology to have a financial impact on the insurance industry, analogous to the Fintech initiatives for the Financial Industry

These are the trends in Insurtech technology:

Enabling: Improves efficiency or transparency of an insurance company. Enables cost saving in claims and customer acquisition. Efforts include Big Data and better analytics.

Transformative: Focuses more on the customer experience (digitization) and customer behavior in order to increase revenue. Includes predictive models, artificial intelligence and engagement innovation.

Disruptive: Focus on the peer to peer market place, on demand models (including micro insurance to handle usage based needs), new product lines targeting segments and sub-segments of the population, new device channels like IOT sensors, and devices supporting insurance products.

What is InsurTech?

- InsurTech is a term applied to the many segments of new technology that are disrupting the insurance space:
 - smartphone apps,
 - consumer activity wearables,
 - claim acceleration tools,
 - individual consumer risk development systems,
 - online policy handling, and more
- Consumers are demanding more and will only continue to become more selective as they are exposed to innovative offerings such as:
 - Discounted auto insurance for installing a **telematics device** to track safe driving
 - Gym fee reimbursements from health insurance providers for **wearing a fitness tracker** that reports on exercise and health
 - Provide clear and objective data on the crops condition using **satellite monitoring** in agriculture.

Advantages of InsurTechs



- Like the fintechs, insurtechs target particular value pools in the sector, rather than seek to provide end-to-end solutions.
- Simpler IT and simpler operations translate into less investment and quicker returns and maximize values in a number of ways:
 - Increased connectivity
 - Targeted product concepts
 - Full automation
 - Data-driven decision making and insights
 - Social engagement
 - More frequent interactions
 - Digitizing “moments of truth”

Impact of shared economy



The world's largest taxi company, owns no vehicles.



The world's largest video streaming service, creates no content.



The most valuable retailer, has no inventory.



The world's largest accommodation provider, owns no real estate.



The world's most popular media owner, creates no content.

Who would be the world's largest insurer of the future, takes no risk??

Insurtech Lagging behind?

 FINANCIAL TECHNOLOGY
Company Count by Country

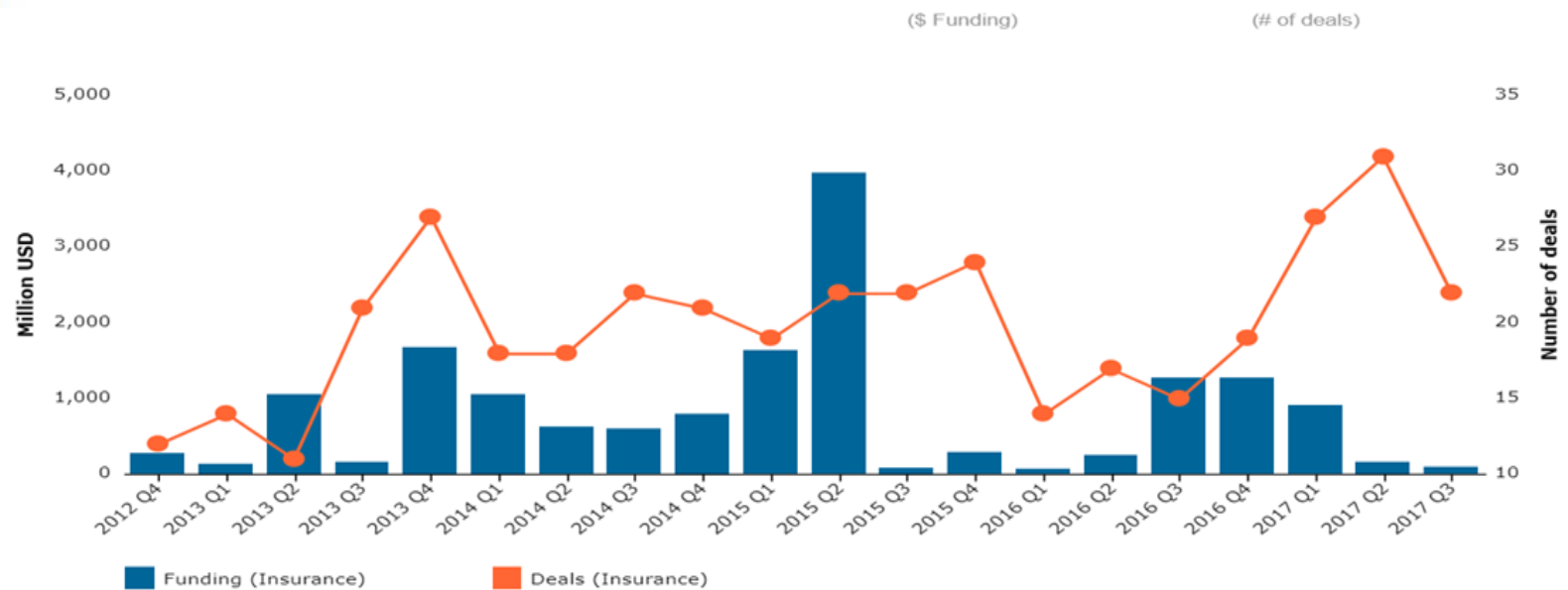
 VENTURE
SCANNER



Data cumulative through July 2017

Late to the game

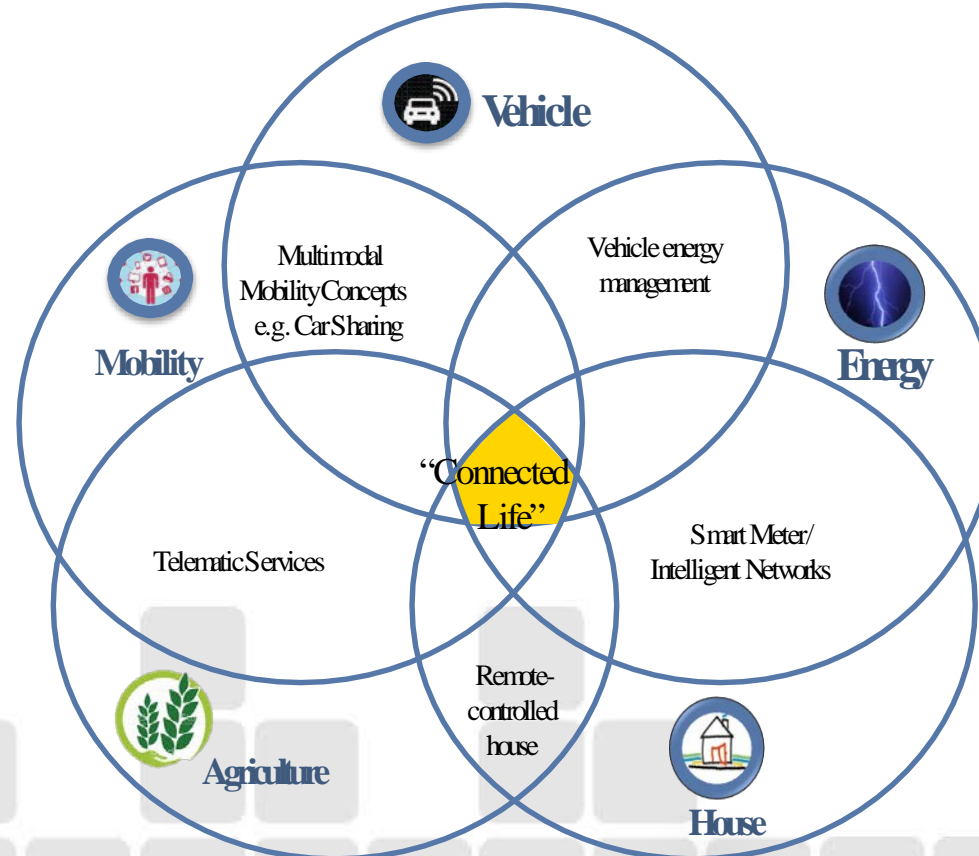
- While Fintech has had an impact on almost all the different financial services, insurance has lagged behind but is catching fast
- Activity grow exponentially since 2012 but has since cooled off slightly due to tougher regulations



2 Current Landscape

Landscape - Connected Lifestyle

- As part of the connected lifestyle, advent of big data, disruption is happening in all fields at a rapid rate
- Insurance has lagged behind but is picking up as new disrupters appeal to the connected generation



Challenges faced by insurers

InsurTech has the potential to disrupt every aspect of the insurance ecosystem as can be seen from the chart below:



Worldwide Landscape



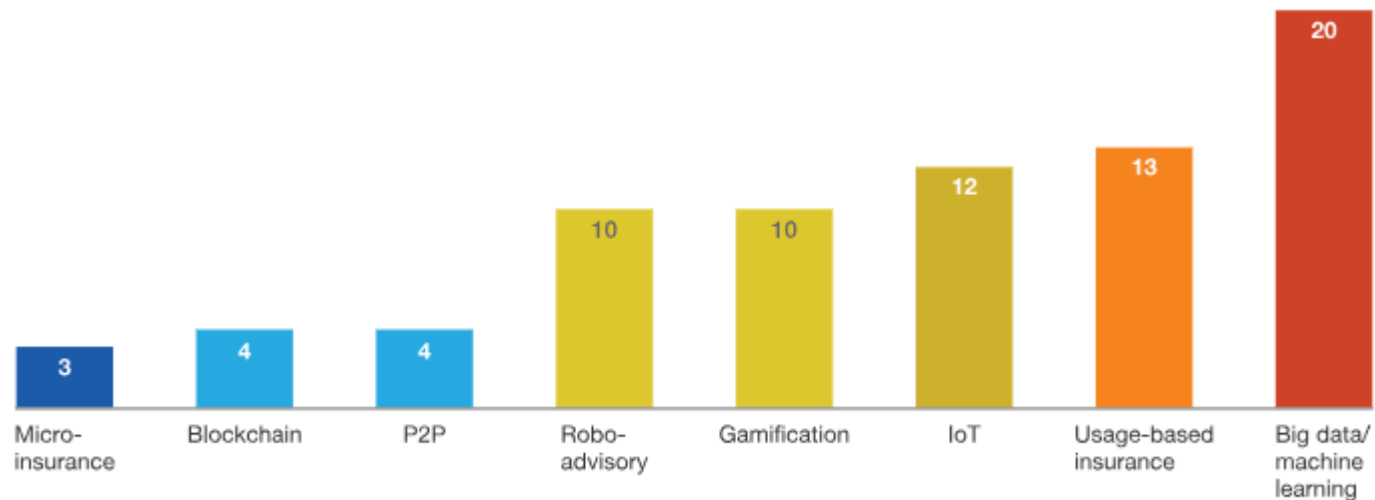
Insurance Technology

Over 1500 companies covering the entire ecosystem of insurance

The graphic above shows only a sampling of companies in each category. Data as of July 2017

Technologies

- Eight important new technologies that have not been widely adopted by traditional industry are already being used by insurtechs to solve real business problems. (McKinsey)

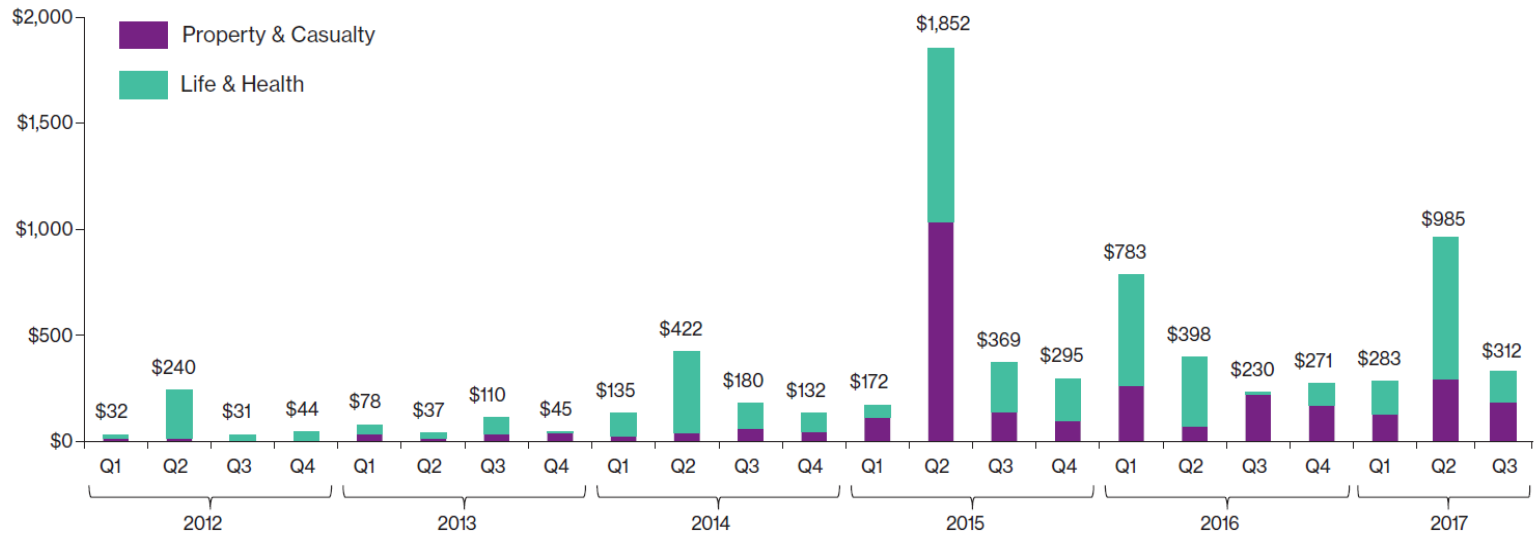


¹~500 commercially most well-known cases registered in the database.

Insurtech in numbers*

Quarterly InsurTech Funding Volume – All Stages

(\$ in millions)

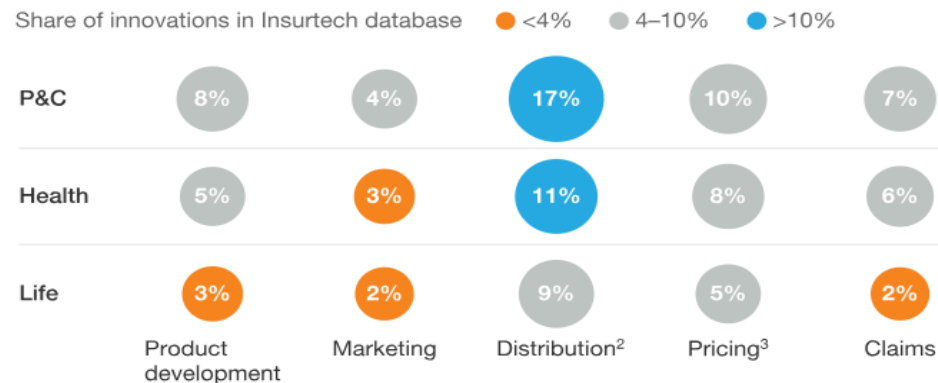


Deal Count

P&C:	5	2	4	3	5	4	11	8	8	6	11	8	12	13	13	18	42	18	30	27	22	33	25
L&H:	8	7	7	10	15	8	10	4	11	16	19	15	13	18	15	22	17	16	8	16	16	31	23

InsurTechs By Discipline

- US has been the pioneering market for insurtech followed by UK and Germany.
- Asia-Pacific region accounts for only 14 percent of the insurtechs but is expected to be the fastest growing region in the coming years.
- Insurtechs are active in all major insurance products and business lines, with concentrations in the P&C business and in the marketing and distribution areas of the value chain. (McKinsey)



¹–500 commercially most well-known cases registered in the database (excluding wealth management-related innovations).

²Includes sales.

³Includes underwriting and policy issuance.

Indian Market Landscape



- A recent survey conducted among CEO's of insurance companies across the world revealed that almost 90% of them fear that will be losing out on a large segment of their business to InsurTech startups*.
- The InsurTech startup climate is heating up with activities such as:
 - E-commerce giant leads \$12M investment in India-based digital insurance startup. Further investment of \$22M has also been provided through World Bank's IFC and Transamerica.
 - A new online broker platform to be set up to focus on the healthcare sector which is an area that has not been explored.
 - Insurance aggregators have already been setup with some comparing rates of up to 25 different insurers.

3

InsurTech - Motor

UAE Motor Insurance Market

▪ The UAE Motor insurance market has a host of issues some of which we highlight below.

50% - 150%



Premiums increasing over the last 5 years



30%

Potential fraudulent claims

Mispricing



Lack of data leading to poor actuarial basis

Lack of innovation



Insurance lacking far behind banks and other FS firms

5bn AED



Annual impact on economy of serious injuries and deaths

90%



Average market Loss Ratio in 2015

Distrust of Insurer



Insurance providers don't enjoy a good reputation in UAE

725



Annual Deaths (2016)

4,788



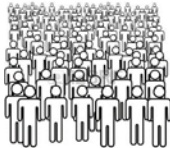
Accidents in 2016

25% - 75%



Limited data to do risk based pricing with up to 25% having no data

~60 players



Around 60 insurance companies operate in UAE which is more than required as per the size of the market

Source: <http://www.gulftoday.ae/portal/779ea860-7064-478b-9e6f-3bae18698.aspx>

TODAY IN UAE

2016	2017
<p><u>6681 injured & 725 dead</u> in accidents in 2016 in the UAE.</p> <p>Deaths are up by <u>7.4%</u> in 2016! – now 3,391,125 car on the road</p>	<p>DED research show that car accident in 2017 cost the UAE <u>Dh 5.67 billion</u></p> <p><u>60%</u> is insurance payout (cars, repairs, healthcare and compensations)</p>

Traffic casualties	2016	2015
No. of accident deaths:	725	675
No. of accidents:	4,788	4,796
No. of accident injuries:	6,681	6,670

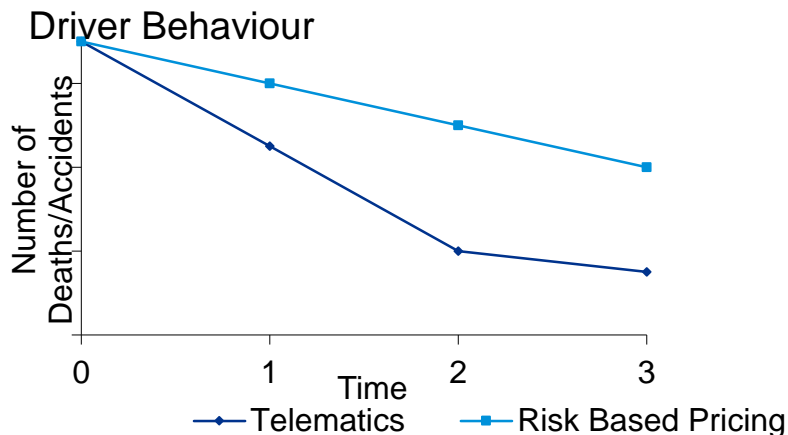
Main causes of accidents in 2016

- Sudden swerving/lane changing
- Misjudgment
- Not enough distance to the car in front
- Entering road without checking if clear
- Speeding
- Lack of attention
- Jumping red lights
- No lane discipline
- Miscellaneous

Telematics vs Risk Based Pricing

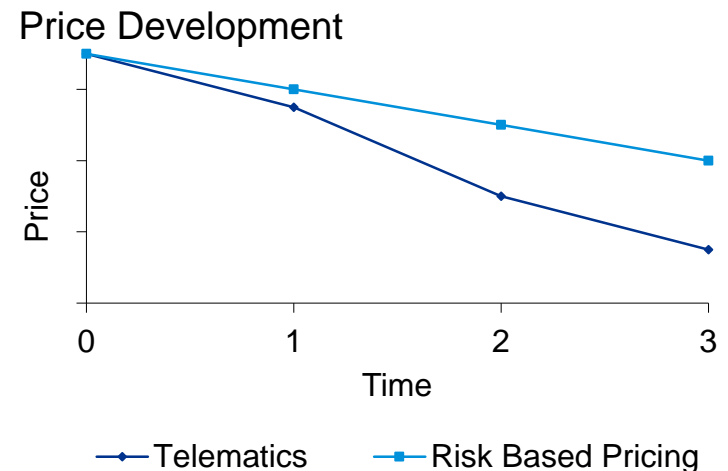
- **Driver Behaviour**

- Telematics greatly influences driving behaviour as drivers know they are being monitored, with 'carrot-and-stick' policy
- While introduction of risk-based pricing is expected to improve driving behaviours on the road, however it is likely to be a slow journey compared to telematics which capture live data and can incentivise/penalise the insured on a much frequent basis
- Improving driving behaviour is expected to significantly reduce the number of deaths/accidents in the region where some countries are currently ranked amongst the highest in the world



- **Price Development**

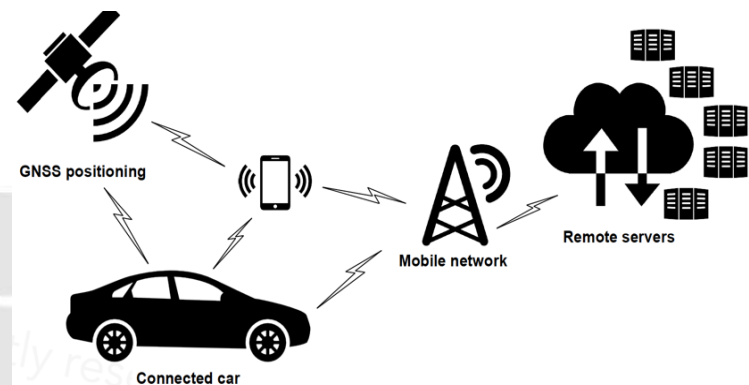
- While a move to a risk-based pricing structure is expected to introduce some fairness to the current pricing, it will require capturing significant volume of data before it can be used for pricing purposes
- For safe, low risk drivers, telematics can result in instant premium savings and the discount can be further enhanced as more data is captured and driving behaviour improves further.
- For high risk drivers, who may face significant price increases once risk-based pricing is introduced, telematics can provide the answer to reduce their premiums within a short period



How telematics works?

Telematics helps insurance companies write more profitable business based on the way the driver drives.

- Real-time data transmitted by the car
- Score is produced based on driving behaviour
- Premiums calculated based on the score
- Automated claims management
- Real-time feedback provides instant training to the driver
- Gamification can be introduced which encourages safer driving
- Accident reconstruction allows for tackling fraud
- Ambulances can be dispatched to the site of an accident based on data gathered - potential to save lives



Source: PTOLEMUS Consulting GROUP C.G.

How the scoring works

Scoring is based on the driver behavior which results in truly risk based pricing.

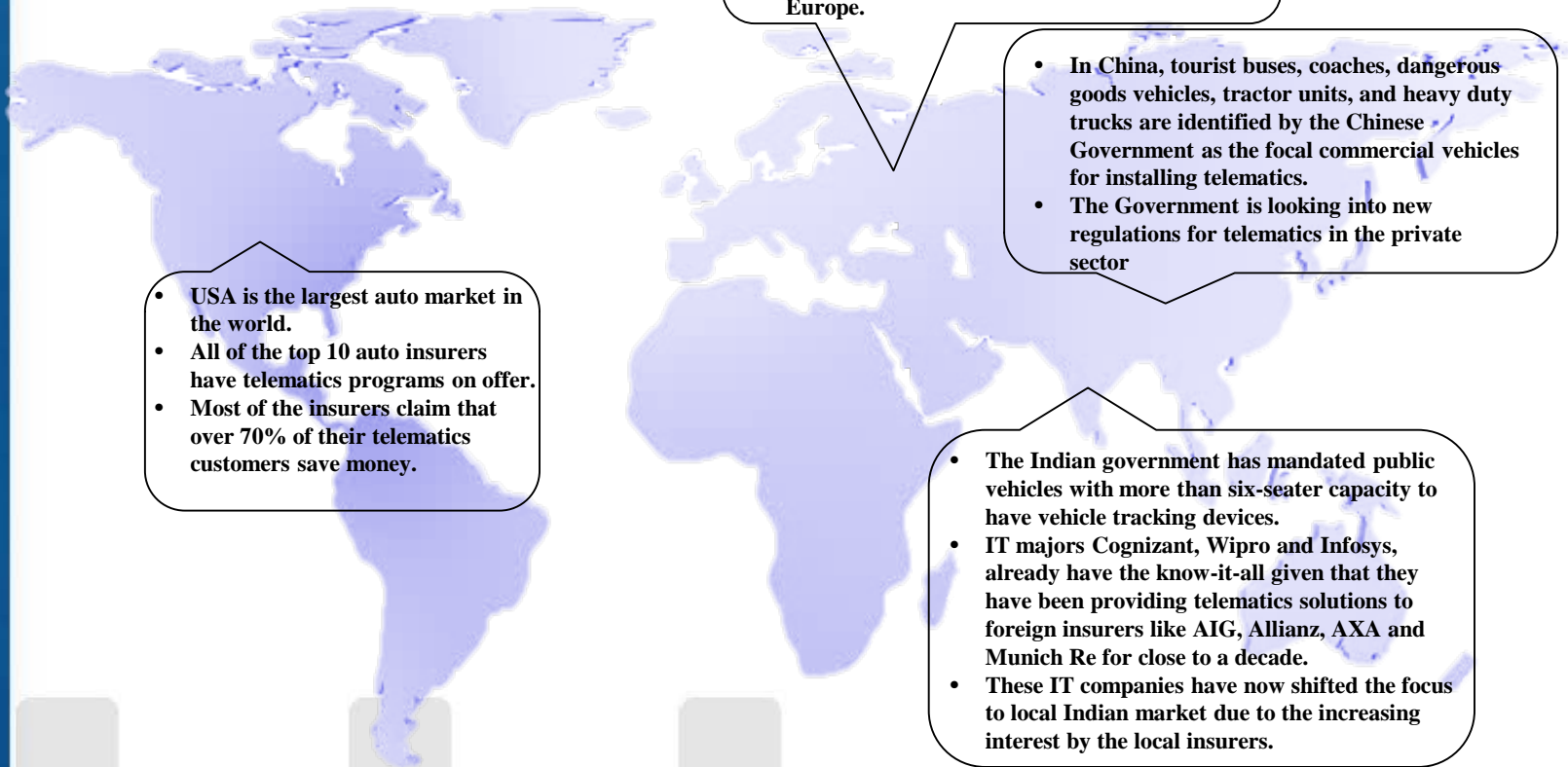
UP TO 20 SCORING FACTORS



Benefits of telematics

- ↓ Reduction in insurance premiums for safer drivers, particularly high risk groups such as youth drivers
- 👍 Greater consumer satisfaction, as pricing directly linked to driving behaviour
- ↑ Significant improvement in road safety
- 🔗 Data analytics based upon telematics information can assist in reducing the incidence of fraud (motor insurers cite a very high fraud rate with respect to motor insurance claims)
- 📄 Overcomes issue of historical data quality and availability (required by actuaries for risk-based pricing) as pricing can be based upon real-time data on driving behaviour
- ↑ Telematics data could be used to improve other processes (e.g. improve efficiencies in fleet management), as well as prepare the insurance market and wider society for future technological advancements (e.g. connected/driverless cars)

Telematics around the world



4 InsurTech - Health

What is Digital Health?

- Digital Health involves interconnected health systems through the use of computers including smart devices, and communication media to manage illnesses and promote health and wellbeing.
- Digital Health is an umbrella encompassing technologies and services including email, mobile phone applications, wearable devices, telemedicine, and genomics.
- Digital Health includes wearing fitness trackers and smart watches to monitor daily step count, heart rate, and sleep.



Benefits of Digital Health



- Digital Health empowers individuals to take control an active role in managing their health through proper prevention and disease prediction / management: 4 main risk factors - physical inactivity, unhealthy diet, smoking, and excessive alcohol intake - account for 60% of all deaths worldwide.
- Digital health encourages patient learning and shifts more responsibility to the patient.
- Digital health for employers may result in more productive employees and less medical claims attributable to preventable diseases: up to \$3 saved in medical and absenteeism-related costs for every \$1 invested.
- Digital health for doctors and medical practitioners may result in a more informed patient, and fewer unnecessary doctors' visits (as these may be screened via telemedicine).

Digital Health around the world



- Large employers may adopt wellness-based digital health programs.
 - They may provide employees with wearables, fitness trackers, participation in this program may lead to financial incentives and rewards.
- Digital health companies offer services including:
 - Integrating data from multiple sources to enable automated reporting, population health management, and reduction in waste and inefficiency.
 - Monitoring patient vital signs so health practitioners are constantly alert of their status
 - Inspiring lifestyle changes to prevent disease
 - Examples include Health Catalyst, Sotera Wireless, Omada Health...

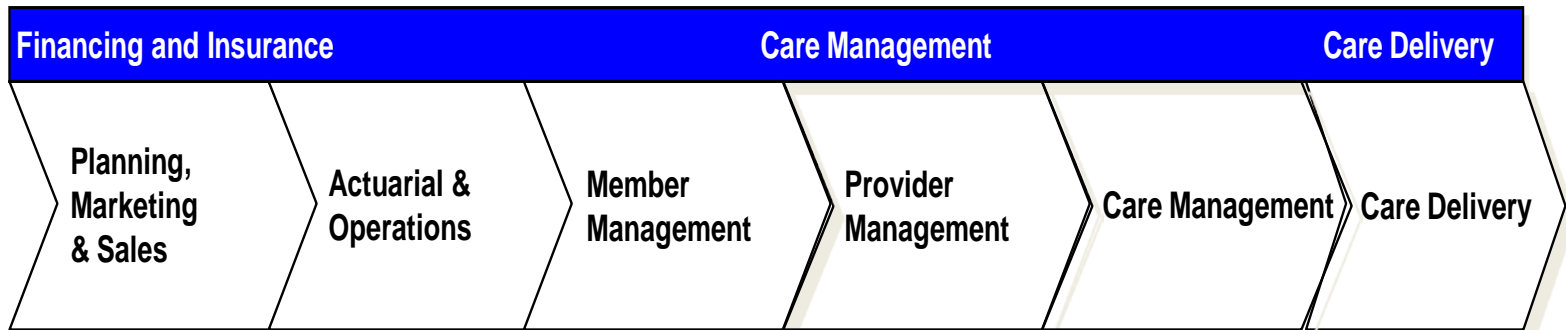
Health Insurance Value Chain



Indemnity Plan

Managed Care

Integrated Delivery System



- Branding
- Product development
- Sales channel management

- Pricing & reserving
- Claims
- Enrollment & eligibility
- Billing
- Connectivity
- Management reporting & analysis
- Utilisation & unit cost targets

- Member engagement, education & information
- Appeals/ grievances
- Member services

- Network development & provider contracting
- Provider reimbursement
- Provider relations
- Credentialing
- Provider profiling

- Utilisation management
- Case management
- Demand management
- Disease management
- Clinical outcomes measurement
- Quality measurement & improvement

- Primary care
- Specialty care
- Hospital Care
- Physician practice management
- Pharmacy
- Ancillary care
- Skilled nursing care
- Long-term care
- Rehabilitation care



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InsurTech - Agriculture

Agricultural insurance in India



- Agriculture in India is highly susceptible to risks like droughts and floods.
- Necessary to protect the farmers from natural calamities and ensure their credit eligibility for the next season.
- PMFBY Scheme launched in 2016 has significant room for enhancement through insurtech.
- Pricing occurring with a stipulated pricing framework.
- Insurance companies received claims worth around Rs 19,000 crore from farmers across the country for Kharif 2017.
- The loss ratio in the scheme was 75% in the 2016-17 and 90 per cent in the last fiscal.

Benefits of InsurTech in Agriculture



- The use of technology such as 3D imaging and crop simulation modelling can increase accuracy in the measurement of weather and crop yields and in reporting and verification.
- Drone usage is predicted to make claims adjusters' workflow 40- 50% more efficient
- Using drone and satellite monitoring in agriculture:
 - Provide clear and objective data on the crops condition
 - Reduce the cost of inspections
 - Improve the accuracy of insurance premiums
 - Decrease claim handling costs and false claim requests

InsurTech in Agriculture around the world

International estimates that farms will eventually account for an 80% share of the commercial drone market.



Canada has allowed drone use in agriculture for years.

- Roughly, 6 in 10 production farmers use various precision technology solutions in their farming operations
- Precision farming technology is now helping to set the stage for crop insurance to be a more customized and individually farm rated insurance offering.

- In Turkey, growers are registered, field's location, size, crop variety and plantation date.
- Mobile apps, Plant growth simulation, Satellite images, IoT sensor stations, Machine learning, GPS tracking and Image recognition are used to improve agriculture in the country

In Russia, all National Association of Agriculture Insurers members have access to satellite monitoring since 2016

- In India, the use of technology will be encouraged to a great extent by the new mandatory crops insurance scheme.
- Smart phones will be used to capture and upload data of crop cutting to reduce the delays in claim payment to farmers.
- Remote sensing will be used to reduce the number of crop cutting experiments.

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Market Issues and Considerations

Issues and Considerations

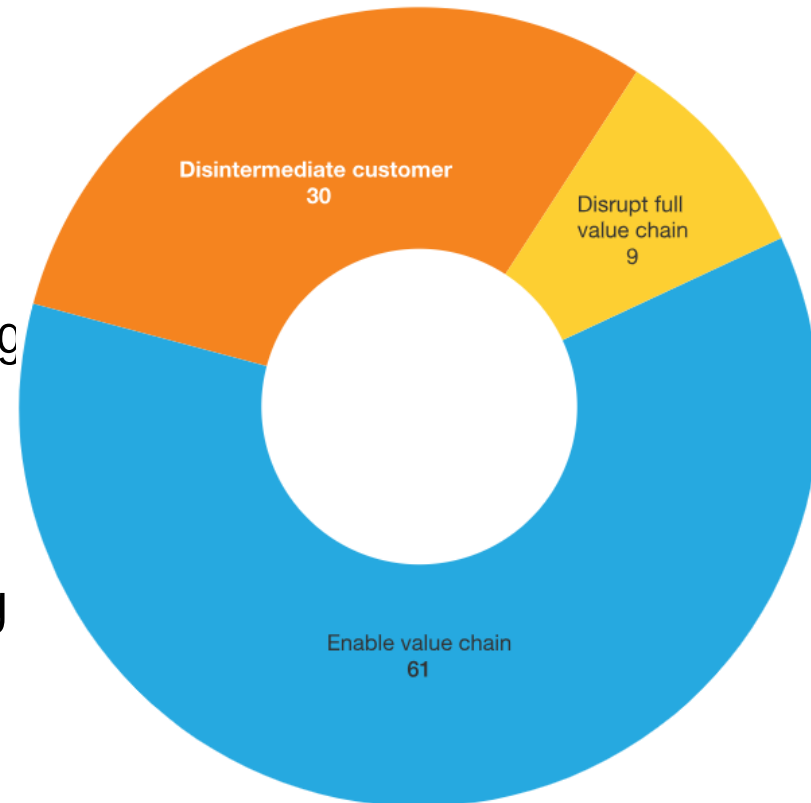


- Complex insurance processes, such as health insurance claims, create a desire for face to face or over the phone human interactions
- As adoption increases more and more data will be stored digitally - this opens up a host of potential problems with privacy issues and cyber attacks
- "Acts of God," such as tsunamis, wildfires, earthquakes and flooding, will continue to plague insurers with unpredictability and falling outside data norms
- Government regulatory hurdles will require concerted efforts between entrepreneurs, insurance firms and legislators
- Legacy and transition issues for insurers

Pathway To Improved Performance



- Insurtechs are not everywhere seeking to displace traditional insurers.
- The insights generated from McKinsey Panorama Insurtech database suggest that most insurtechs today focus on providing services to insurers, simplifying and digitizing parts of the insurance value chain.
- Only a small proportion are aiming to replace the incumbents while the remaining are focused on disintermediating the customer. (McKinsey)



The Insurtech Revolution: *Promising to transform insurance, an emerging technological movement takes root.*

- The insurance industry right now is in the midst of a sea change transformation that has no proxy nor historical precedent.”
- This thought-provoking article by Annmarie Geddes Baribeau is published by CAS Actuarial Review and available at: <https://ar.casact.org/the-insurtech-revolution/>

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Questions / Discussion

Thank you