



Quelle: Verwendung unter Lizenz von Shutterstock.com

Trends in PI and RI Industry

26 July 2018

5th Seminar on Current Issues in GI, Institute of Actuaries of India

Global economic outlook 2018:


Broad-based expansion and still only moderate inflation

<h3>Growth</h3>	<ul style="list-style-type: none"> Expecting a globally synchronised expansion (growth in consumption, investment and trade) Growth in developed economies robust (USA/Eurozone); Emerging markets remains stable (China's dip counterbalanced)
<h3>Inflation</h3>	<ul style="list-style-type: none"> Inflation rates in the developed countries in 2018 (annual average) at the moderate level Period of decreasing inflation rates in the large emerging countries Brazil, India and Russia is probably over, with inflationary pressure increasing slightly again in 2018. Inflation in China should remain moderate.
<h3>Policy & Markets</h3>	<ul style="list-style-type: none"> Monetary policies will become more restrictive in 2018. Fed will probably continue to raise interest rates; ECB is likely to leave its key interest rates unchanged in 2018 Strong economic growth, moderate inflation and somewhat more restrictive monetary policy should cause capital-market interest rates to gradually rise

<h3>Major risks</h3>	<ul style="list-style-type: none"> Risks to growth prospects are tilted to the downside 	<div data-bbox="1236 873 1449 1037"> <p>Downside risks and vulnerabilities:</p> <ul style="list-style-type: none"> Protectionist US trade policy (myopic trade war) Sharp rise in long-term interest rates Debt crisis (e.g. re-financing of corporate debt in China, India) and/or EMU sovereign debt crisis (affecting sectoral liquidity in the euro area) China: policy tightening Rise of populism and separatism in the EU Geopolitical tensions (e.g. Middle East) Higher oil price affecting growth </div> <div data-bbox="1468 873 1680 1037"> <p>Upside risks and positive feedback loops:</p> <ul style="list-style-type: none"> Central banks tightening delayed (or not) and initial rates (reversed) Cyclical recovery in world trade (driving commodity market recovery) Stronger than expected inflation in the investment cycle of advanced economies Stronger economic performance in advanced economies (spurring consumer & business confidence) Expansionary policy in China </div>
----------------------	---	--

Risks to the global growth outlook are tilted to the downside in the short-term

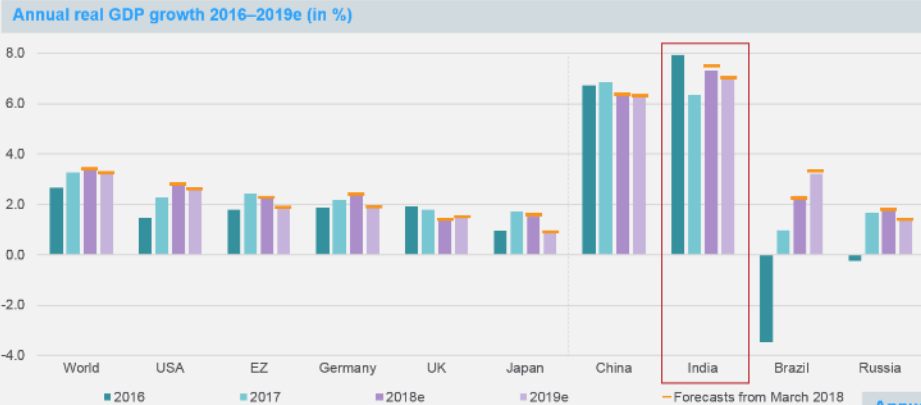
Downside risks and vulnerabilities:

- 
- **Protectionist US trade policy** triggering a trade war
 - Abrupt **rise in long-term interest rates**
 - **Debt crisis** (e.g. non-financial corporate debt in **China, India** and other **EMs**, sovereign debt and banking sector fragility in the **euro area**)
 - **China: policy tightening**
 - Rise of **populism and separatism in the EU**
 - **Geopolitical tensions** (e.g. Middle East)
 - **Higher oil price** stifling growth

Upside risks and positive feedback loops:

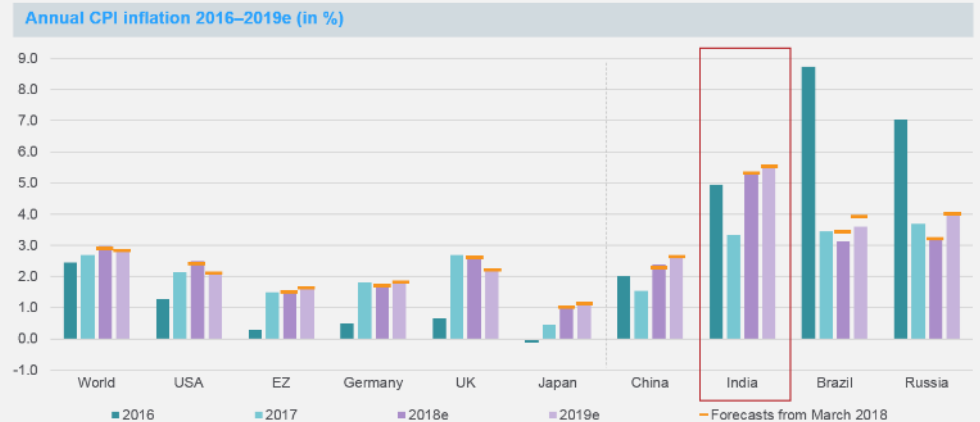
- 
- **Central bank tightening delayed** (amid subdued inflationary pressures)
 - **Cyclical recovery in world trade** (including commodity markets' recovery)
 - Stronger than expected **upturn in the investment cycle** of advanced economies
 - Stronger momentum in advanced economies (**upbeat consumer / business confidence**)
 - **Expansive policy in China**

Global economic outlook for 2018 and what it means for P&C



strongest growth in years, driven both by industrialised countries and by emerging markets → higher capital spends & sales pushing the P&C growth

Moderate inflation expected in advanced economies – phase of declining inflation rates in big emerging markets should be over → interest income (can have effects on UW results)



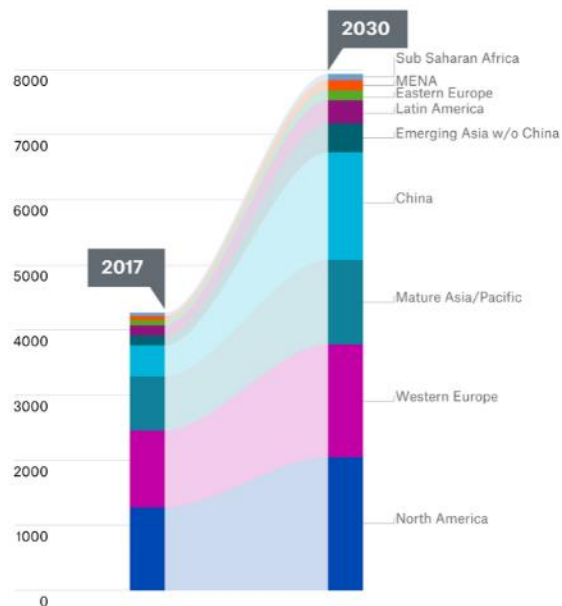
2 Primary and Reinsurance Industry



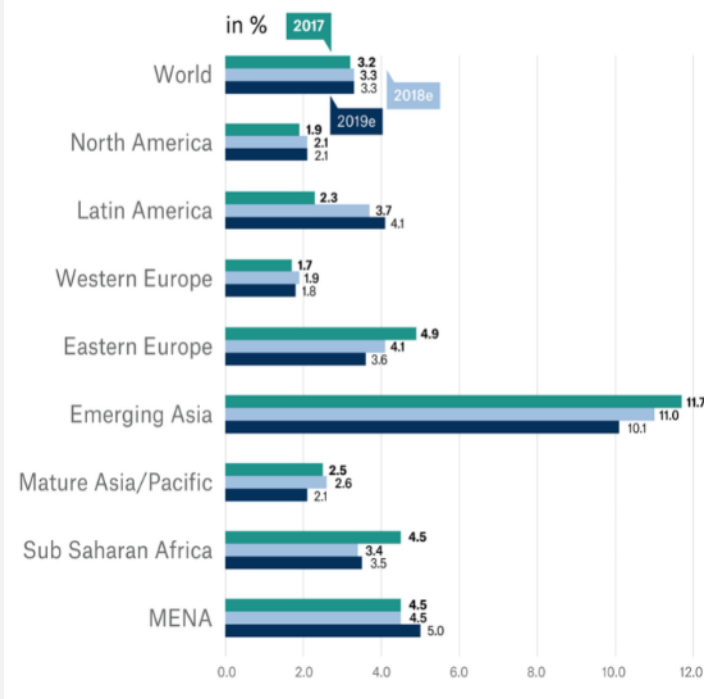
Development of Asia/Pacific markets with respect to insurance penetration in a global perspective

Asia to form 45% of the premiums from current levels of 30%.
Emerging Asia, China to be the key drivers of global growth

Premium growth in primary insurance up to 2030 in €bn

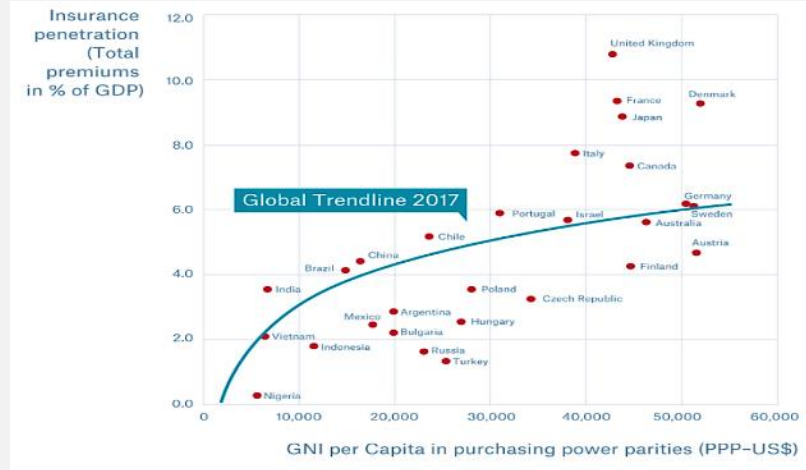
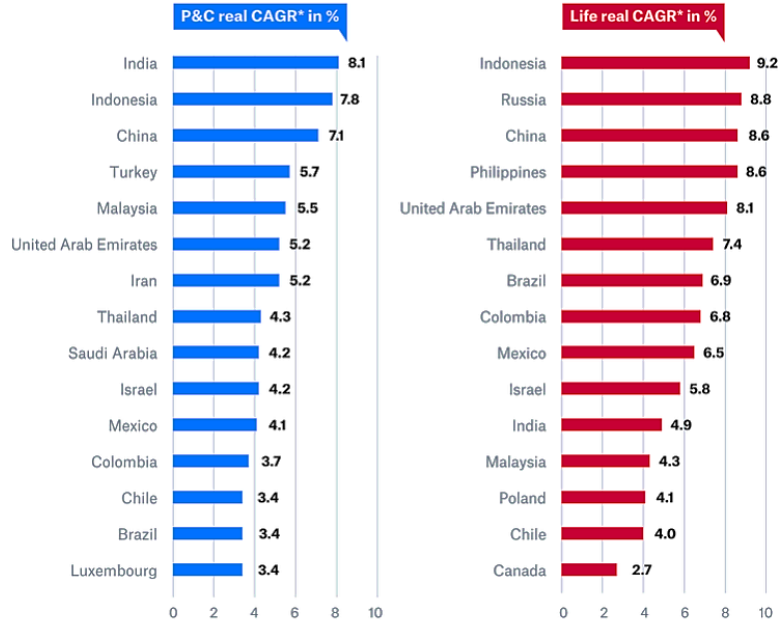


P&C Insurance benefits from economic upswing
Real growth in P&C primary insurance premiums by region



India: Primary Insurance growth projections

Growth of the 40 most important markets in P&C and Life premium: real CAGR* 2018-2030

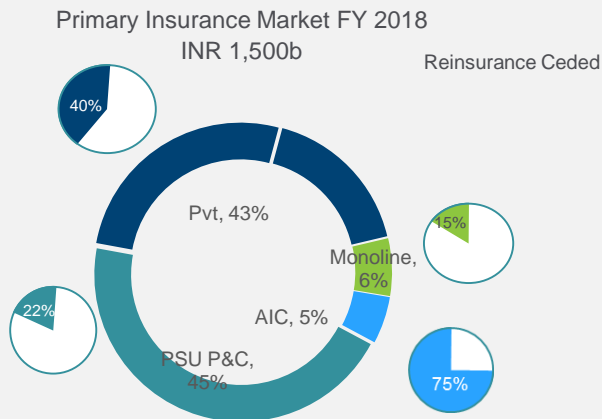
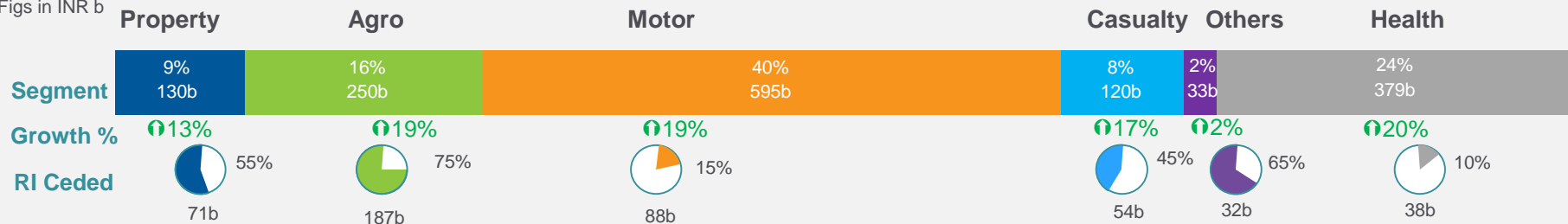


India growth rate would continue to be the highest in P&C, would propel itself into global top 10 markets

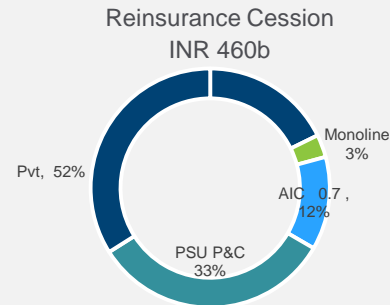
India P&C PI and RI market showing high teen growth rates



Figs in INR b



Source: MR Internal Analysis, Annual reports of Insurers



India growth rate would continue to be the highest in P&C, would propel itself into global top 10 markets

Upsides

- **Demographics** median age < 35
- **Higher infrastructure** development than expected
- **Higher penetration** on Agro, income oriented products
- **Higher growth** in **casualty market** linked to export growth of Indian products
- **Improved access** to **Govt** bodies leading to higher off-take on NatCat solutions
- **RBC** regime
- **Divestment of PSU's, IPOs**
- **Reduced** interest rates (CoR focus)

Downsides

- **High competitive** intensity with most offerings me-too
- **Policy** uncertainties, Investment uptake
- **Ability** to handle changing risk patterns/trends

The current Top Global Risks and the key future trends in our industry

2017: Top 10 Global Business Risks

1. Business Interruption (37%)
2. Market Developments (31%)
3. Cyber incidents (30%)
4. Natural Catastrophes (24%)
5. Changes in Legislation and regulation (24%)
6. Macroeconomic Developm. (22%)
7. Fire/Explosion (16%)
8. Political Risks and violence (14%)
9. Loss of reputation or brand value (13%)
10. New technologies (12%)

Key future trends in insurance

- Internet of Things
- Connected cars/telematics
- Advanced analytics/“big data”
- Entry of Non-Traditional Firms
- Increase Use of Aerial and Digital Imagery
- Digital Sales Tools
- Machine Learning/AI/Robotics
- Block chain/Distributed Ledger
- Virtual Reality

Year 2017 – 2nd biggest NatCat year ...



January to March
Floods: Peru
Overall losses: US\$ 3,100m
Insured losses: US\$ 380m
Fatalities: 147



28 February-2 March
Tornadoes, severe storms: USA
Overall losses: US\$ 1,900m
Insured losses: US\$ 1,400m
Fatalities: 4



27 March-6 April
Cyclone Debbie: Australia
Overall losses: US\$ 2,700m
Insured losses: US\$ 1,400m
Fatalities: 12



15 April-9 May
Frost: Europe
Overall losses: US\$ 3,600m
Insured losses: US\$ 650m
Fatalities: none



25 August-1 September
Hurricane Harvey: USA
Overall losses: US\$ 95,000m
Insured losses: US\$ 30,000m
Fatalities: 88



6-14 September
Hurricane Irma: USA, Caribbean
Overall losses: US\$ 57,000m
Insured losses: US\$ 29,000m
Fatalities: 128



22 June-5 July
Floods, landslides: China
Overall losses: US\$ 6,000m
Insured losses: US\$ 250m
Fatalities: 56



June to October
Floods, landslides: South Asia
Overall losses: US\$ 3,500m
Insured losses: minor
Fatalities: 1,787



14 August
Mudflow: Sierra Leone
Overall losses: US\$ 30m
Insured losses: minor
Fatalities: 500



19-22 September
Hurricane Maria: Caribbean
Overall losses: US\$ 68,000m
Insured losses: US\$ 30,000m
Fatalities: 108



19 September
Earthquake: Mexico
Overall losses: US\$ 6,000m
Insured losses: US\$ 2,000m
Fatalities: 369

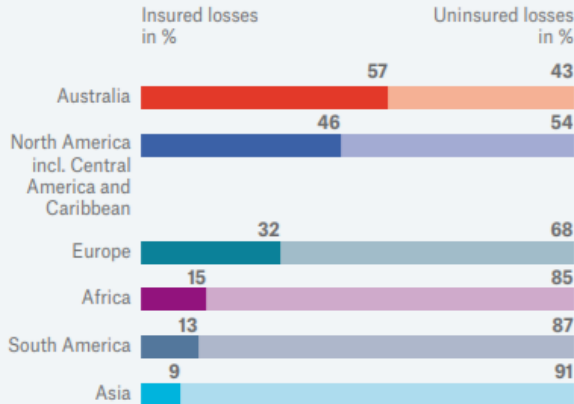


8-20 October
Wildfires: USA
Overall losses: US\$ 13,000m
Insured losses: US\$ 9,800m
Fatalities: 30

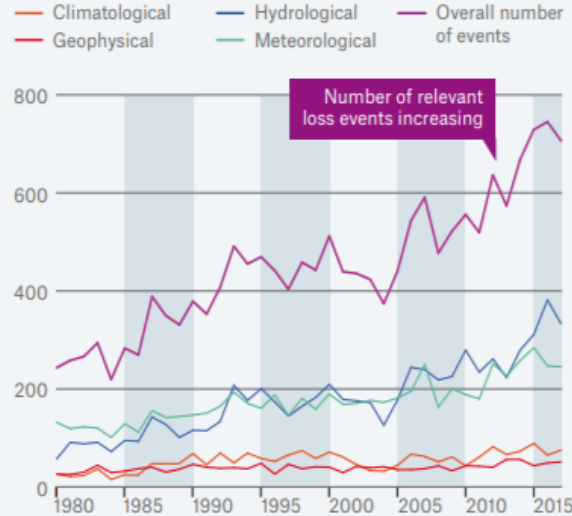
.... (Re)Insured/Economic loss & Fatalities variation in emerging & developed economies skew continue to be stark

This gap of un-insured loss combined with increasing frequency continues to be a big concern

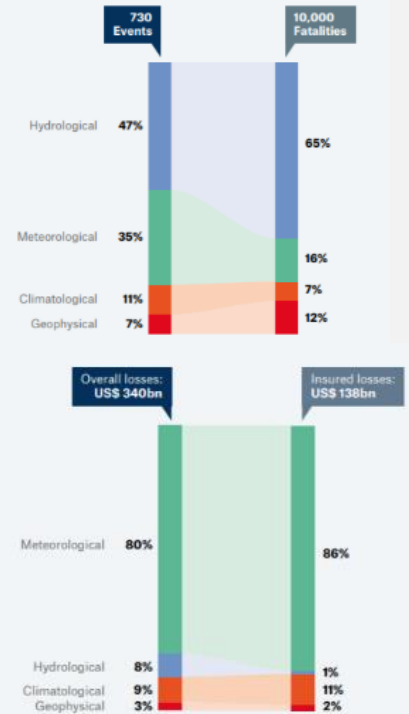
Natural catastrophes 2017
Insurance gap in various regions



Natural catastrophes 1980-2017
Number of relevant loss events increasing

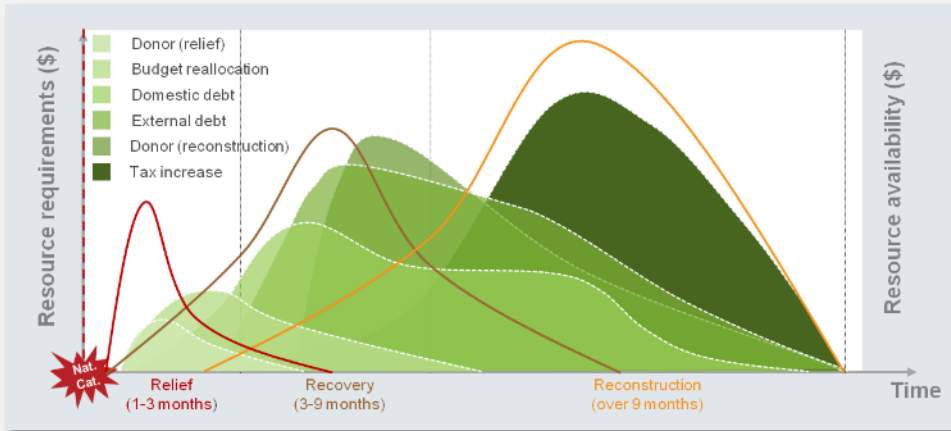


Natural catastrophes 2017
Percentage distribution



Ex post disaster financing

Demand and availability of resources change significantly in the course of a Nat. Cat. event.

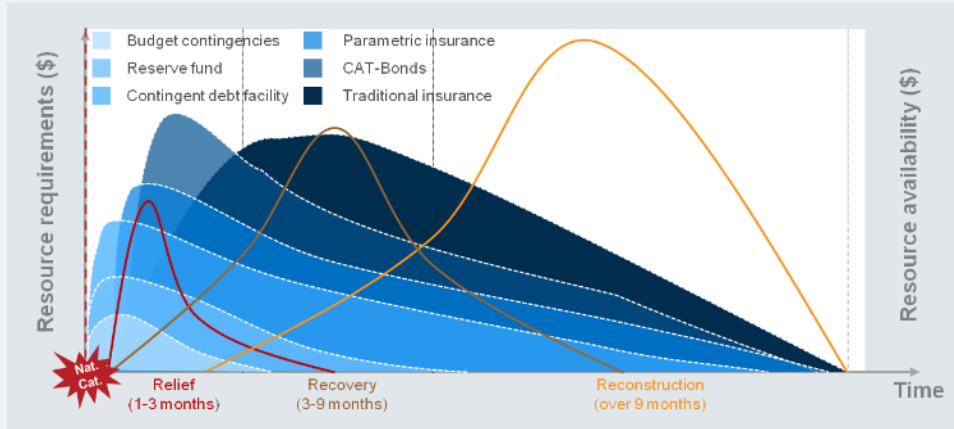


➤ Donor contributions increasingly under competition and more and more subject to previously established risk management / risk transfer mechanism.

Ex-post financial resources are building up slowly and are not accessible when most critically needed.

Ex ante disaster financing

Short-term demand can often not be satisfied with conventional budget reallocation, donor contributions or tax increases











- Planning security and budget stability for governments through stable recurring premium payments.
- Post-disaster relief budget (partially) transferred into pre-disaster financial risk transfer options.









Ex-ante financing instruments are secured before a disaster and thus allow quicker distribution of funds without delay after the disaster strikes.

Tech Radar... trends are friends









User Centric Worlds

-  Augmented and virtual worlds
-  User centered design
-  Loc-based services
-  Haptic technologies
-  3D/4D-printing
-  Digital identity
-  New payment models
-  Shareconomy










Internet of Things

-  Smart home
-  Telematics
-  Wearable devices
-  Smart textiles
-  Digital health services
-  Industrial internet of things
-  Autonomous robotics and drones
-  Smart dust

Artificial Intelligence

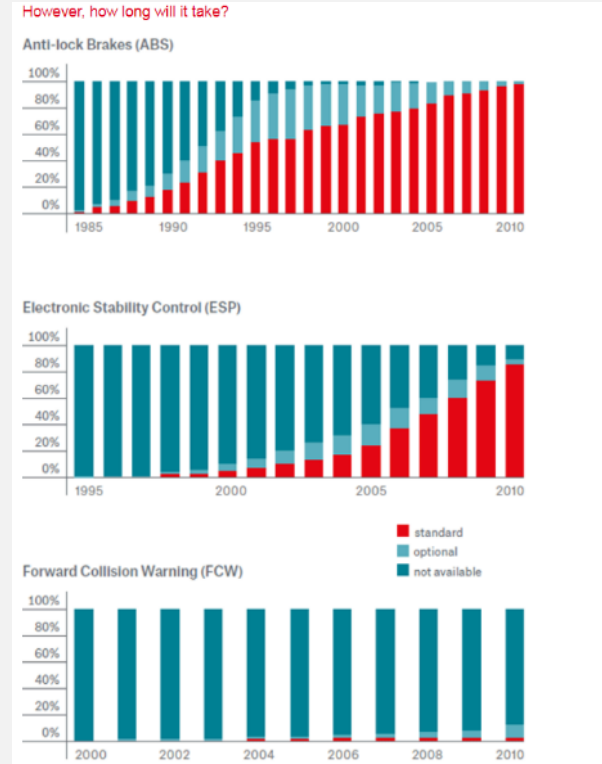
-  Advanced machine learning
-  Aut. Machine driven decisions
-  Predictive analytics
-  Conversational interfaces
-  Smart bots
-  Autonomous vehicles
-  Web of thought extension
-  Robotic process automation

Data Era

-  Quantum computing
-  Digital twin
-  Context aware systems
-  Mesh and app service architecture
-  Digital technology platforms
-  Blockchain technology
-  Open API and data
-  Cybersecurity
-  Serverless computing

Autonomous vehicles – Impact to Insurance (?!)

- Autonomous vehicles will remain rarities on the roads for some time to come and even more in our country
- Greater exposure to losses (high severity/accumulation)
- Not accident free for sure
- Will have physical limitations
- Higher avg costs, higher nursing costs, replacement of technology would be higher too
- Property → Cyber

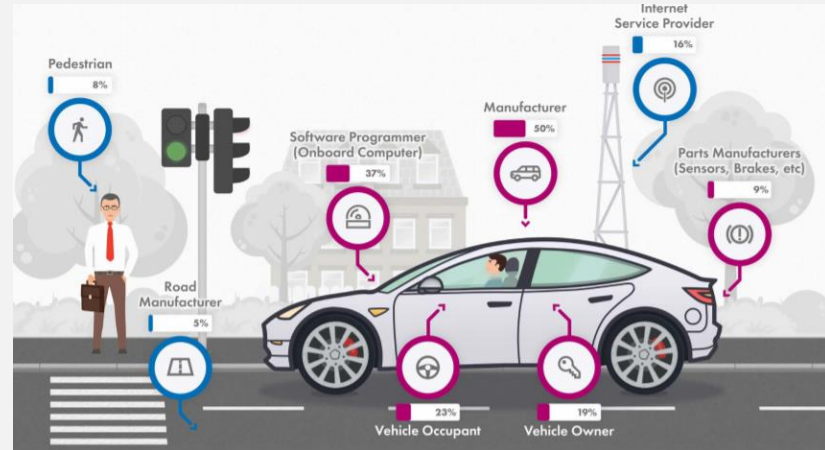


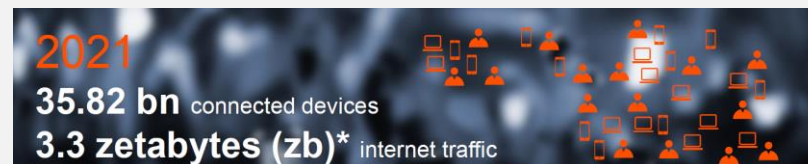
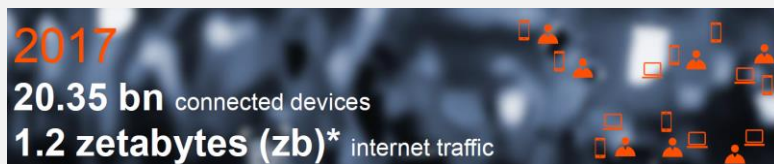
Mobility risks however would surely undergo a change...

- Data outage, Power outage, Standstill
- Risk profile shift to more stakeholders

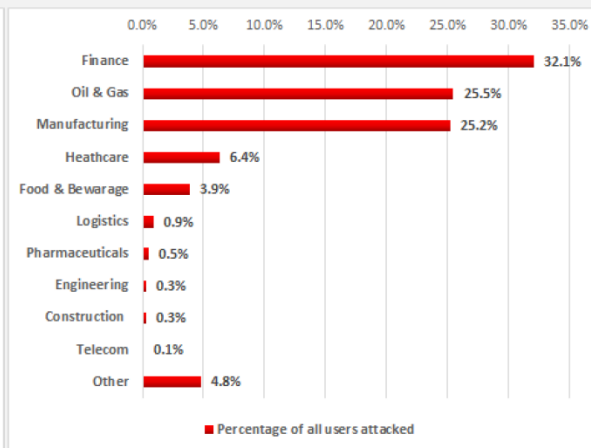
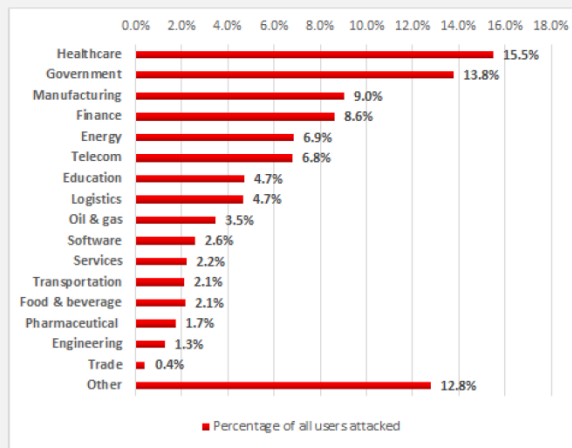
Other key trends in Mobility

- Shared-driven: Shared economy ride & Shared economy asset
- Shared-autonomous: Public transport systems
- Hyperloop
- 3D printing of parts

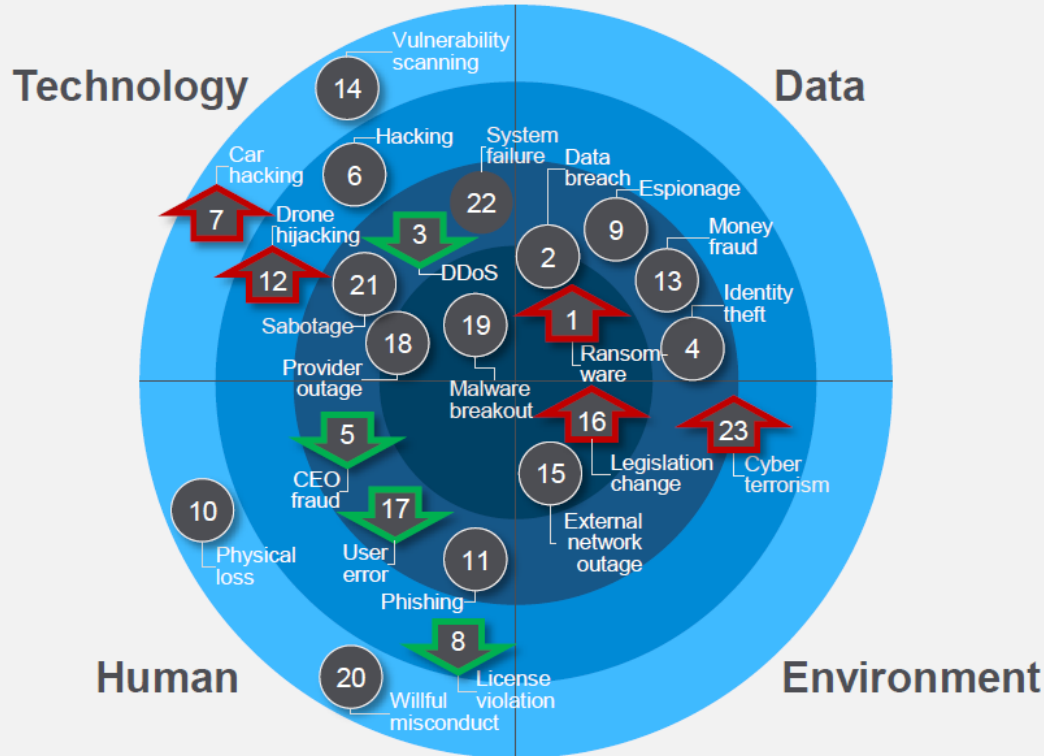




Distribution of companies attacked by WannaCry and Petya by industry (May – July 2017)



Cyber trend radar: Key to devise defense mechanism



Potential impact on cyber insurance

- Potential for low cost single losses**
 Several incidents caused by a specific threat can impact only few clients (<5%) independently from each other and most probably will not have a substantive impact on single cyber insurance companies or the cyber insurance market)
- Potential of normal single losses**
 Several incidents caused by a specific threat can impact approx. 10% of all clients independently from each other and most probably will have a tolerable impact on single cyber insurance companies or the cyber insurance market)
- Potential of expensive single losses**
 Several incidents caused by a specific threat can impact approx. 25% of all clients independently from each other and most probably will have a significant impact on single cyber insurance companies or the cyber insurance market)
- Potential of accumulation losses**
 A single incident caused by a specific threat may impact many clients (> 50%) at the same time or so significantly that it most probably will have a critical impact on cyber insurance companies or the cyber insurance market)

Trend

- Increase**
 Frequency of publicly known incidents and/or the average loss of it increase
- Constant**
 (Frequency of publicly known incidents and/or the average loss of it remain constant)
- Decrease**
 Frequency of publicly known incidents and/or the average loss of it decrease

Cyber Assets

- Workstations
- OS, Applications, Browsers
- Servers
- Network devices
- Telephone
- Cloud provider
- Persons
- Processes
- Information & IP ...

Cyber Vulnerabilities

- Buffer overflows
- SQL injection
- Cross-Site-Scripting (XSS)
- Privilege escalation
- Unencrypted data
- Untrained personnel
- Misconfiguration
- Inadequate policies
- ...

Cyber Threats

- Denial of Service (DoS)
- Phishing
- Social Engineering
- Ransomware
- Virus/Trojan/Worms (Malware)
- Espionage
- Botnets
- Zero-Day Exploits
- Identity theft
- ...

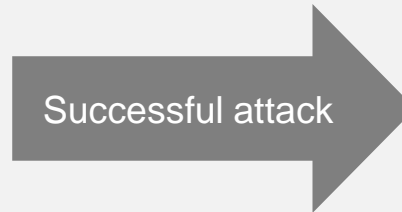
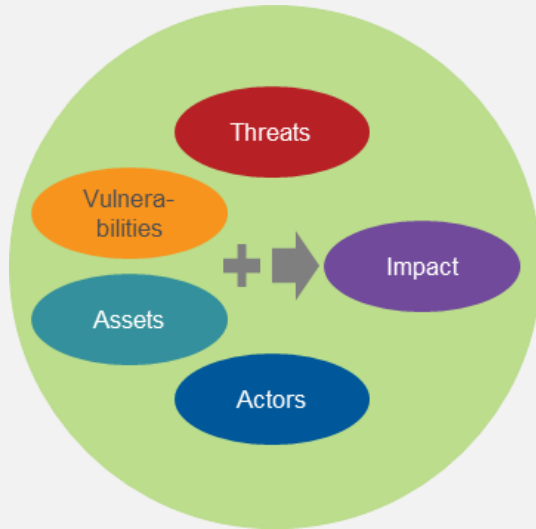


<https://threatmap.checkpoint.com/ThreatPortal/livemap.html>



Threat-Matrix

	Cybercrime	Cyberkid	Cyberwar and Cyberespionage	Cyber-Terrorist	Hacktivist
Motivation	Money	Fun, curiosity	Strategic	Ideology/Religion	Politics, Ethic
Choice of targets	Individual, by chance or directly aimed	By chance, political reasons	Individual, collateral	Ideological, anti-western, collateral, media-effected	Ideological and political targets
Organisation	Strongly pronounced	Partially	Perfect	Regional	Structured
Competence	High	Low-high	Very high	Low-high (external help)	Middle-high






Business Impact (costs)













- Impact on Operations
 - System & data recovery
 - Business interruption
 - Crisis management
- Liability
 - Notification
 - Credit monitoring
- Legal implications
 - Law suits, Defense costs
- Miscellaneous
 - Reputational damage
 - Extortion

Digital Landscape: China


Market capitalization
USD 41.73bn








-  Large online retailer
-  Banking / Finance
-  Insurance


Market capitalization
USD 63.83bn

-  Search / Mobile search
-  Online travel / tickets
-  Mapping / navigation
-  Group buying
-  Health
-  Banking
-  Mapping / navigation
-  Video streaming
-  Cloud computing
-  Banking
-  Autonomous vehicles
-  Insurance



Market capitalization as
USD 245.93bn

-  Social Media
-  Online gaming
-  banking
-  Mapping / navigation
-  i-car platform
-  Group buying
-  Insurance



- 800m users
- 6 hours per day average usage



“Revolution in motor insurance”

