DIGITIZATION:

TRANSFORMING THE RISK, LIABILITY, AND PROPERTY-CASUALTY INSURANCE ARENA

The Gathering Storm: Digital and Climate Disruptors
October 27-28, 2016
Montreal, Quebec, Canada

DIGITIZATION AND THE INSURANCE INDUSTRY: PROGRAM

01 Digitization: fundamentally changing how P&C insurers and their customers do business

02 Overview of digitization

03 Emerging digital risks and exposures in Manufacturing, Transportation/Logistics, and Healthcare

04 Product liability, security, and privacy considerations

05 Mind the gap: digital risks and exposures and existing P&C insurance covers

06 Digitization: re-envisioning insurers' role in identifying, managing, and financing risk and exposures

07 Digitization: insurer response

DIGITIZATION: FUNDAMENTALLY CHANGING HOW P&C INSURERS AND THEIR CUSTOMERS DO BUSINESS

DIGITIZATION AND THE INSURANCE INDUSTRY

The insurance industry is in a moment of profound transformation.

Everything that we formerly accepted as gospel – our products, customer experiences, partners, and processes – is being challenged not only by new technologies, but also by new business models.

The following are the areas where our industry is currently most vulnerable.

DIGITIZATION AND THE INSURANCE INDUSTRY

Weaponized complexity

"Insurance companies have done everything they can to acquire customers… and soon after, everything they can to confuse them"

- Joshua Kushner, Oscar Co-Founder
Healthcare Insurance

In four years, Oscar has grown to serve more than 145,000 members. It is currently valued at $2.7Bn and is backed by Khosla Ventures, General Catalyst Partners, and Goldman Sachs.

DIGITIZATION AND THE INSURANCE INDUSTRY

Perverse incentives

"There's an inherent conflict of interest at the heart of the insurance business model."

- Daniel Schreiber, Lemonade CEO
P2P online P&C carrier

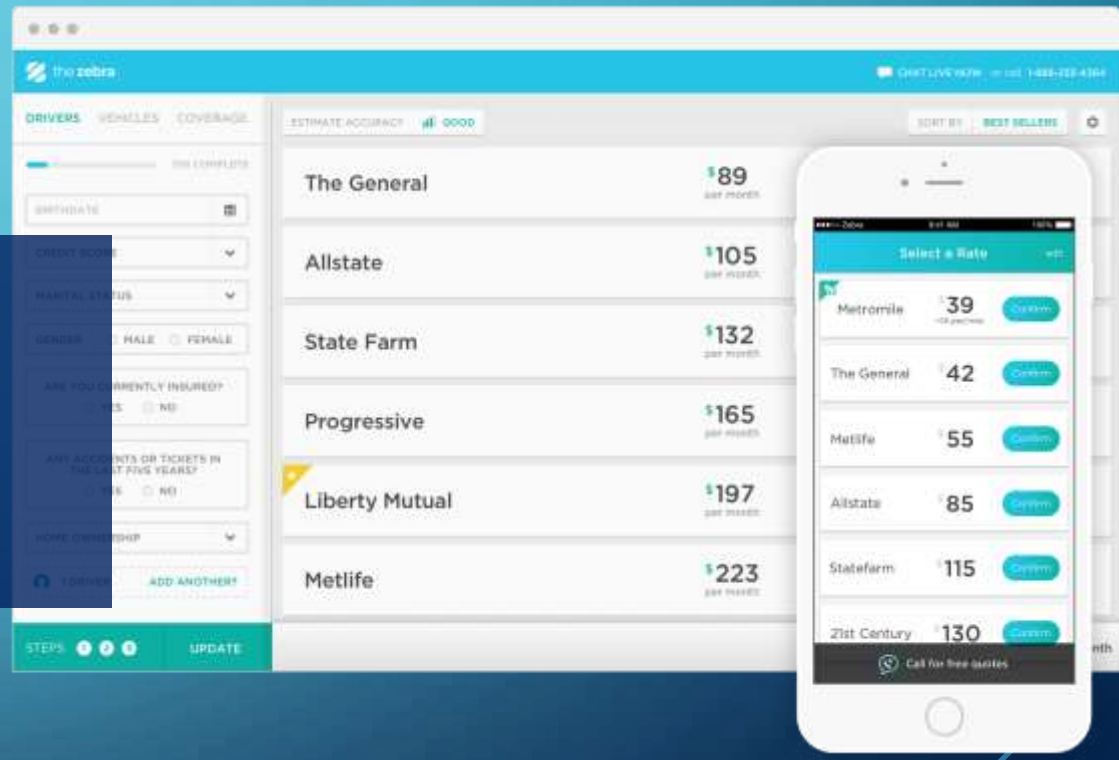
Schreiber's opinion – not held singularly considering Lemonade's backing by established VCs including Sequoia Capital – is that the traditional insurer and consumer have an "adversarial" relationship. A problem that reaches a nexus at the point when help is needed most. Claims.

DIGITIZATION AND THE INSURANCE INDUSTRY

Spreadsheet commoditization

"Innovation in a stodgy $220 billion industry means providing consumers transparency."

- Mark Cuban, Insurance Zebra Investor
Auto Insurance Comparison Engine



Comparators like Insurance Zebra (dba The Zebra) provide transparency for consumers AND targeted risk selection for insurers. The firm has attracted high-profile investors and raised an additional $17M of series A funding in January 2016.

DIGITIZATION AND THE INSURANCE INDUSTRY

Connected policies

"Data and connectivity in the car should be an asset to the consumer. Insurance is the first proof point."

- Steve Pretre, Metromile Founder & CEO
Pay-Per-Mile Care Insurance Provider

Steve Pretre doesn't believe that traditional insurers want a pay-per-mile model to win in the market. Primarily because a new model would require traditional carriers to cannibalize their existing business while outlaying significant investment to restructure the enabling technology.

DIGITIZATION AND THE INSURANCE INDUSTRY

Collaborative coverage

"In less than 20 years, owning a car will be like owning a horse."

- Elon Musk, Tesla Motors CEO
Automotive and Entergy Storage Company

Tesla cars already have an "Autopilot" feature and Elon Musk expects fully autonomous cars in years – not decades. The sharing economy AND autonomous transportation may intersect soon, raising challenging questions about liability and the viability of existing insurance products.

DIGITIZATION AND THE INSURANCE INDUSTRY

Change is occurring on multiple fronts – simultaneously

Market Dynamics Customer Preferences

01 DIGITAL ENGAGEMENT
Millennials (and increasingly others) are looking to digital channels for functionality and support

02 PERSONALIZATION
Consumer's increasingly view themselves as a "segment of one" and create expectations inline

03 MARKET TRANSPARENCY
Transparency and research tools are shining light on "me too" features and creating pricing pressure

04 VALUE CHAIN DISAGGREGATION
Shifts in distribution and servicing have the potential to separate insurers and customer relationships

Nascent Technologies

ROBOTICS, IOT AND BIG DATA 05
Connected devices create demand for new products and consumption models while enabling a deeper data pool

BLOCKCHAIN 06
Use cases are emerging *(e.g., contracting, P2P lending)* and the full promise is not yet defined

MACHINE LEARNING 07
Moving past statistical models has broad potential to reshape core insurance functions

SHIFTING LIABILITY 08
The sharing economy is creating a fundamental shift in definitions of ownership, access, and liability

DIGITIZATION AND THE INSURANCE INDUSTRY

Established players and newcomers are responding

Market Dynamics — Customer Preferences

Nascent Technologies

01 DIGITAL ENGAGEMENT

MetLife

oscar

02 PERSONALIZATION

MERCER

03 MARKET TRANSPARENCY

PROGRESSIVE

gocompare.com

04 VALUE CHAIN DISAGGREGATION

Retiready

nutmeg

ROBOTICS, IOT AND BIG DATA 05

bh

Vitality Health Life

BLOCKCHAIN 06

John Hancock

DYNAMIS

MACHINE LEARNING 07

NEW YORK LIFE

H2O.ai

SHIFTING LIABILITY 08

FARMERS INSURANCE

metromile

DIGITIZATION AND THE INSURANCE INDUSTRY

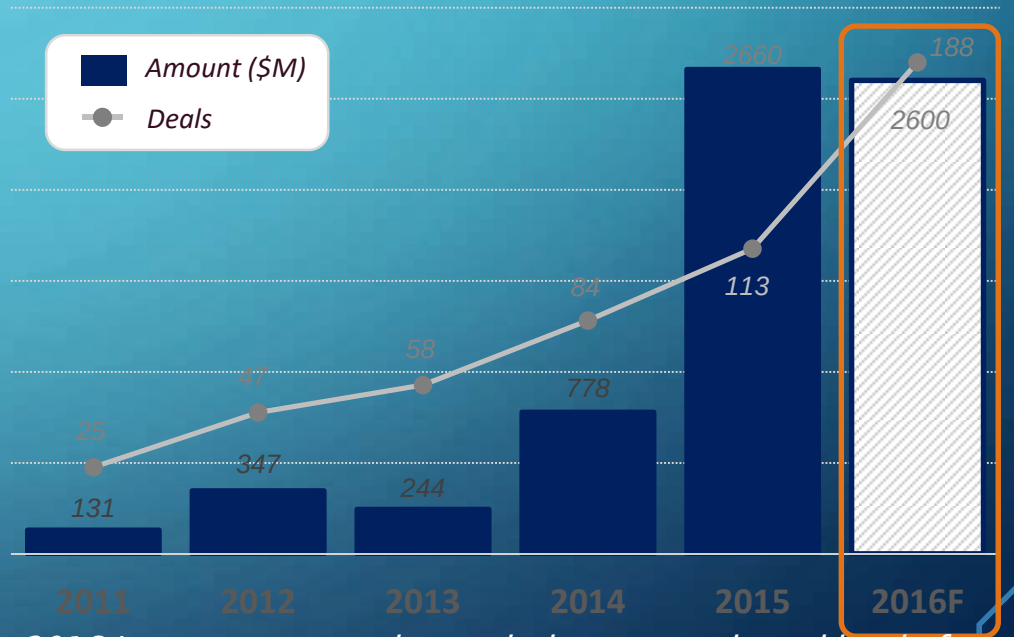
Money is pouring into insurance tech startups

Q1 2016 was the second strongest quarter ever in insurance tech funding with 47 deals totaling $650M globally.

Oscar's latest $400M mega-round, led by Fidelity Investments, values the startup at $2.7B and includes a host of well known investors.

What was once a predictable sit-back-and-count-the-money business is now under attack, and disruption – new business models that provide stripped down services to consumers that we don't serve – are seeping through the chinks in our industry's armor.

Global Insurance Tech Financing Trends



2016 is on pace to nearly match the unprecedented level of investment seen in 2015. If Q1 results were replicated in the remaining quarters, the Insure Tech space would see $2.6B in financing, with 188 total deals. 2015 was the first year where investments in health related and non-health sectors were approximately equal.

Sources: 1) Capgemini Analysis
2) "Insurance Tech Startup Funding", CB Insights, 2016

DIGITIZATION – A CALL TO ACTION

More than almost many other marketplace force, digitization requires the insurance industry to intrinsically change how it does business and respond to its customers' evolving risks and exposures by developing new product solutions, services, processes, and structures.

In this regard, digitization presents both a major challenge as well as a major opportunity for insurers.

How insurers respond will determine if they remain relevant or if their customers will look elsewhere.

OVERVIEW OF DIGITIZATION

EMERGING DISRUPTIVE DIGITAL TECHNOLOGIES

- Internet of Things
- 3-D Printing
- Autonomous Vehicles
- Artificial Intelligence
- Nanotechnology
- Virtual/Augmented Reality

HOW DOES THE IOT WORK?

IoT operates on embedded sensors, sending environmental and activity information to Data Stores.

WHAT IS THE INTERNET OF THINGS (IOT)?

The Third Wave of the Internet or the 4th Industrial Revolution

First wave – 1990s, building the infrastructure

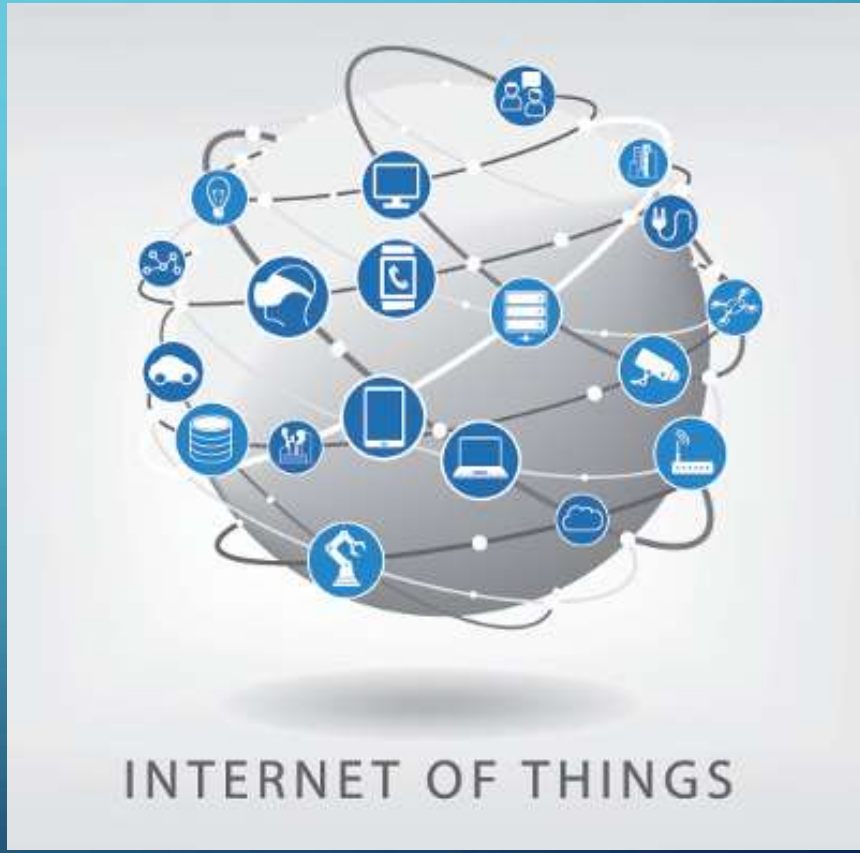
Second wave – 2000s, dual development of internet services and mobile connectivity

HOW DOES THE IOT WORK?

Data stores, in turn, interact with analytics engines to provide feedback and control to sensors.

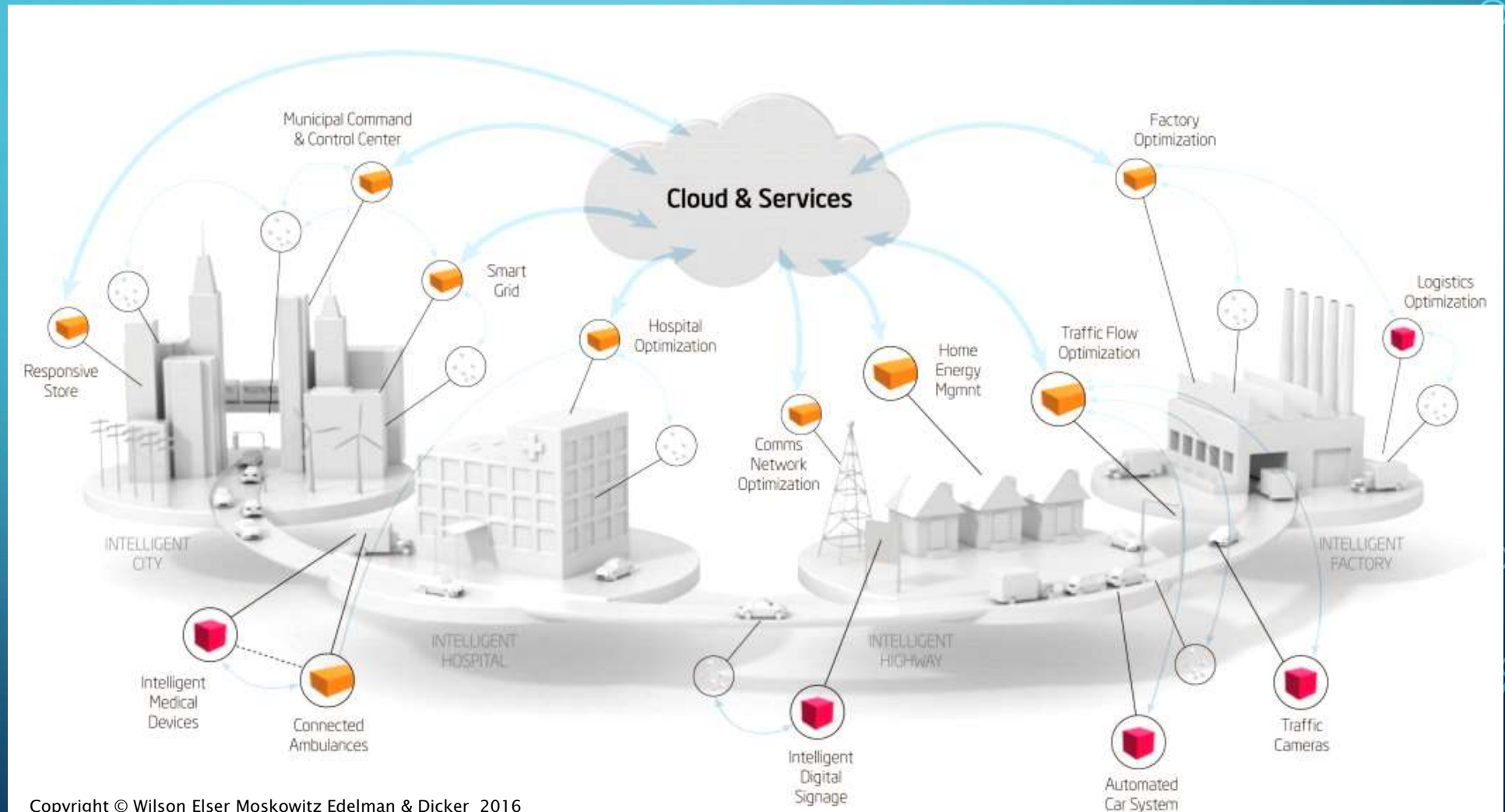
HOW DOES THE IOT WORK?

Sensors give objects the power of perception into conditions such as temperature, voltage, motion, chemistry and usage.



HOW DOES THE IOT WORK?

Sensor-driven computing converts these perceptions into insights which operators and systems can act on



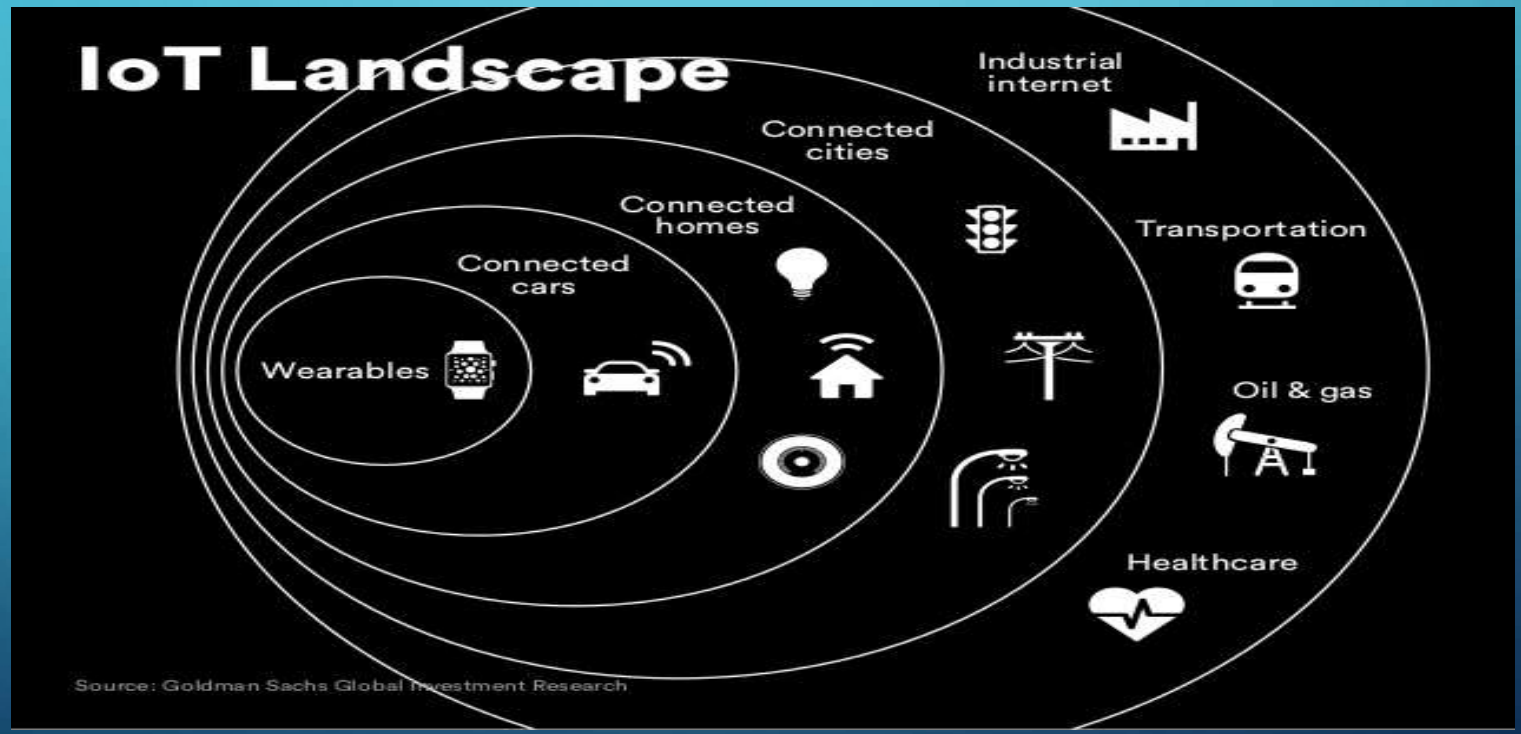
AN IOT WORLD

IoT will become an intrinsic part of our personal and professional lives.

- According to Gartner, Inc., there are over 6.4 billion devices connected to the internet.
- Each day at least 5.5 million more IoT devices are connected.
- By 2020, it is expected that there will be more than 20 billion IoT devices in use.

AN IOT WORLD

Goldman Sachs identified selected key business sectors ripe for IoT adoption and the marketplace forces that will drive IoT activity.



"The Internet of Things: Making Sense of the Next Mega Trend," Goldman Sachs (Sept. 2014)

THE INDUSTRIAL IOT

The integration of complex physical machinery and devices with networked sensors and software, used to predict, control and plan better business and social outcomes.

THE INDUSTRIAL IOT

- The Industrial Internet Consortium was formed in 2014.
- Founding members include AT&T, Cisco, GE, IBM and Intel.
- Today, there are over 200 member companies.

THE INDUSTRIAL IOT

Many M2M applications have been developed; many more are being developed.

Early applications are in the areas of *"advanced scheduled"* and *"preventative"* maintenance and "*critical failure*" anticipation for large industrial processes.

EMERGING DIGITAL RISKS AND EXPOSURES IN MANUFACTURING, TRANSPORTATION/LOGISTICS, AND HEALTHCARE

DIGITIZATION UP-ENDS TRADITIONAL BUSINESS MODELS

- Fundamentally changes how goods and services are created and provided
- Transforms the relationships between goods/services providers and customers
- Blurs the lines between goods and services
- Reduces certain risks and exposures while creating new ones

MANUFACTURING

- More than 50% of manufacturers participating in a study focused on changing business models in a global marketplace planned to introduce connected, i.e., IoT products
  - *"Competitive Advantage in a Global Marketplace," Oxford Economics (June 2013)*
- Industry analysts expect that for IoT-supported processes, manufacturers will significantly strengthen their data acquisition/analysis and continuous-feedback product improvement capabilities over the next 5 – 10 years.
- Product performance data is used to improve overall product quality, completely transform the product or augment the customer experience.
- Connected products allow manufacturers to fulfill customer need for additional product just-in-time, blurring the line between product and service.

3-D PRINTING (ADDITIVE MANUFACTURING)

- Keen interest by life sciences, auto, aircraft, construction industries for manufacturing medical devices, auto/aircraft parts, and building structural components
- Allows manufacturers to print products tailored to the customer
- Uses WIFI/Ethernet, programmable logic controller, and mechanisms to control the printing process
- Technology is evolving quickly with millions of commercial and home units expected to come on-line in the next five to ten years.
- May 2016: first FDA guidance on the design, manufacturing of 3-D-printed medical devices ("Technical Considerations for Additive-Manufactured Devices")

(Photo: Mattel)

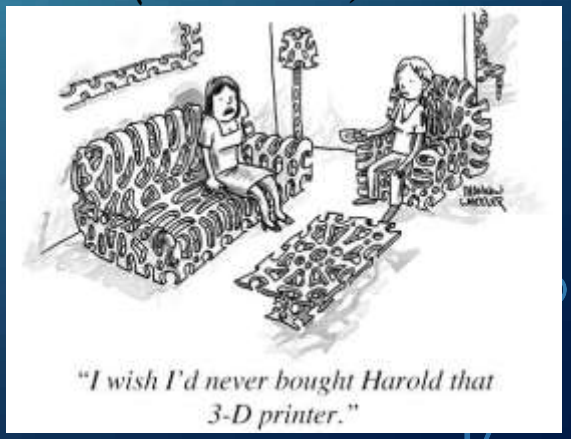


Image: The New Yorker

Key risks include consumer/patient data security, software flaws, file conversion errors, hacking of printing instructions, malicious modification of the printing process, potentially leading to defective products, property damage and personal injury.

AUTONOMOUS VEHICLES – MAKING INROADS

- **Automatic parking**

  Systems assist with or perform vehicle parking

- **Adaptive cruise control**

  Laser or radar systems monitor adjacent vehicles and adjust speed

- **Blind-spot assist**

  Sensors detect vehicles in blind spot

- **Lane departure**

  Drivers alerted to lane drift

- **Hands-free driving**

  Auto-pilot function uses radar, sensors, cameras, and GPS to steer

(Photo: Google)

Yet, there are miles to go . . .

- Fully-autonomous vehicles are in the test phase.
- 2016 saw the first two accidents caused by autonomous vehicles.

Key risks include vehicle communication platform data security, commandeering of dashboard controls & navigation systems, GPS spoofing, software defects, property damage, and bodily injury.

TRAFFIC MANAGEMENT

- AIM – Autonomous Intersection Management
  - Works best with autonomous vehicles
  - Interacts with traffic signal systems, vehicles, and drivers (if vehicles not self-driving)
  - Data-driven
    - Traffic data from satnav
    - GPS
    - Smartphone apps
    - Camera images
  - Benefits include optimized safety and traffic flow and reduced emissions

Key risks include system hacking, commandeering, traffic stoppages, business interruption, property damage, and personal injury.

AUTONOMOUS TRUCKING SYSTEMS

- Current technology limits truck automation to highways and certain functions such as accelerating and braking.
- Drivers required to maneuver smaller roads and take over in an emergency
- Key players: truck manufacturers, e.g., Daimler-Benz and Volvo, and upstart, Uber
- Fully-automated trucks not expected for 15 – 20 years
- Benefits include reduced accidents & shipping costs and ability to monitor and control fleet in real time.

Key risks, which are similar to those of AVs, include commandeering of dashboard controls & navigation systems, software flaws, cargo loss, property damage, and personal injury.

WAREHOUSING – INVENTORY MANAGEMENT

Key risks include data security, software flaws, system/robot commandeering, inventory loss, property damage, and personal injury.

Pallet tagging to monitor inventory levels, conditions, theft and other types of loss, and location in real-time

Warehouse machines and vehicles centrally connected to monitor asset use

Warehouse system sensors measure physical stress and temperature, predicting need for preventive maintenance

Forklift sensors determine when load is too heavy or uneven

Smart robots used to automate goods retrieval and storage

Sensors and cameras determine if goods were improperly stored, preventing them from falling or causing injury

DRONES – NO LONGER FLIGHTS OF FANCY

Explosion in use of unmanned drones for such diverse functions as farm management, natural disaster surveillance, medical supply delivery, and wildlife conservation/anti-poaching

- Particularly useful in developing countries or rural areas without extensive road systems
- Can upload data to cloud in real-time for customer analysis and decision-making
- In June 2016, the U.S. FAA finalized rules for civil drones of < 25 kg.:
  - Line of sight
  - Below 400 feet
  - Away from people
- Next step: passenger drones

Key risks include privacy violation, intruder commandeering, airspace interference, property damage, and personal injury.

HEALTHCARE/LIFE SCIENCES – REG –TECH CONVERGENCE

- The Affordable Care Act with its focus on disease prevention , treatment in non-clinical settings, and individualized care ("Precision Medicine Initiative") is encouraging innovation in the areas of medical data management/analytics and diet/lifestyle/disease monitoring and management.

- M-health technology, i.e., apps and wearables that facilitate monitoring and management of health conditions, is expanding rapidly.
  - Wellness apps
  - Portable sensors, e.g., Fitbit
  - WebMD
  - DoctorOnDemand
  - Networked health monitoring devices with apps, e.g., Cellscope

HEALTHCARE/LIFE SCIENCES – REG –TECH CONVERGENCE

- Apps to monitor efficacy and side effects of new drugs
- Surgical robots
- Sutures to sensors
  - Measure physical strain
  - Siphon body fluids for analysis
- Disease data mining to identify mutations and disease linkages and develop new therapies
- Gamification
- Biodegradable implants to monitor vital signs
- BioStamp Research Connect (stretchable electronics)

Key risks include patient data security, data integrity, medical device intrusion and control, software/algorithm flaws, defective devices, inadequate training (for robot use), personal injury, and violation of laws and regulations.

PRODUCT LIABILITY, SECURITY, PRIVACY CONSIDERATIONS

IOT GROWTH: AT WHAT COST?

INSURANCE INDUSTRY INTELLIGENCE ON IOT RISKS

AIG/Consumer Electronics Association White Paper: "The Internet of Things: Evolution or Revolution?":

"From cyber breaches to shifting questions of property and products liability, businesses cannot afford to enter this new technological world unprepared.

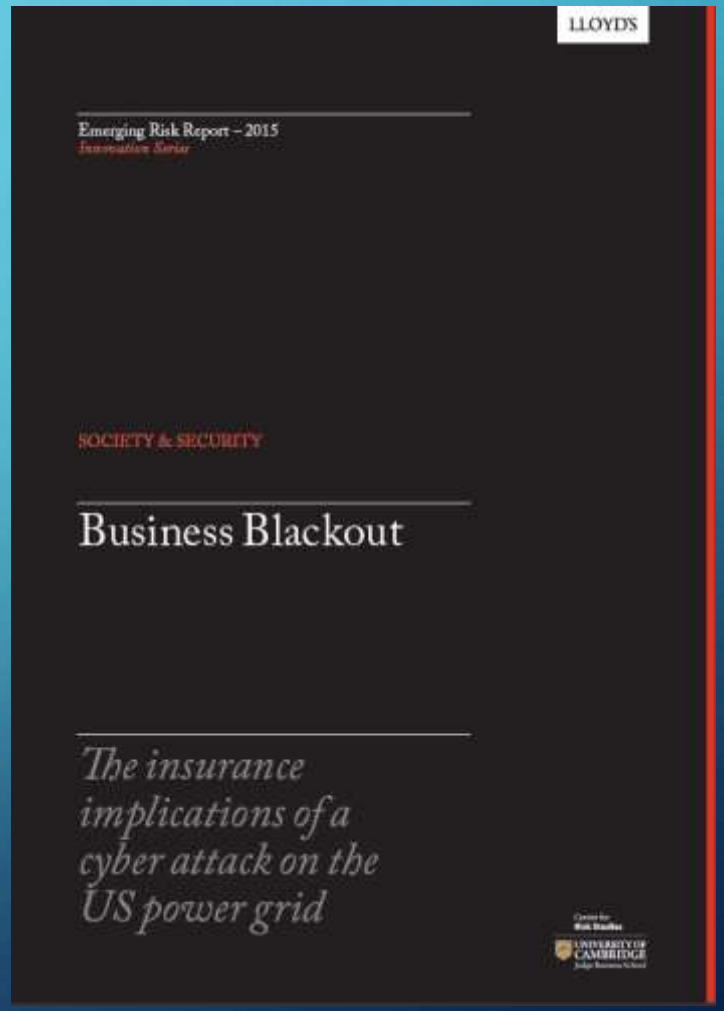
For example, every object that connects with the Internet is another entry point through which the cyber-criminals can enter a business' enterprise system.

Equally dangerous, in a world where machines replace humans as the decision-makers and sensors are continually capturing data, serious questions of liability, resulting physical damage, and privacy arise."

INSURANCE INDUSTRY INTELLIGENCE IOT RISKS

Lloyd's "Emerging Risk Report – 2015": analyzes the insurance implications of an attack on the U.S. power grid

Swiss Re SONAR "New Emerging Risk Insights," 2015: identified the IoT as having a very high risk impact potential



ATTACK ON UKRANIAN POWER GRID

On 12/23/2015, a cyber attack shut down the Ukranian power grid.

(Photo: Reuters)

ATTACK ON UKRANIAN POWER GRID

DHS concluded that power outages were caused by a cyber attack.

WHAT ARE THE PRODUCT LIABILITY LITIGATION RISKS?

Small glitches impacting hundreds of thousands or millions of devices is an ideal recipe for product liability no-injury class action litigation.

EMERGING PRODUCT LIABILITY CONSIDERATIONS

- New types of experts required: software engineers & cyber security specialists
- Currently, no standards governing IoT products
- Reporting obligations to government safety agencies (CPSC, FDA, NHSTA & FTC)
- Product recalls/corrective actions
- What will be the remedies and at what cost?

NEW ISSUES – SECURITY V. PRIVACY

- What role / responsibility will the consumer bear if he/she isn't tending to his/her own data security?
- Is the responsibility to update software or prevent malware up to the individual, the business stakeholders or both?
- Who has custody, ownership and control of the data?
- Security management throughout the lifecycle of a device
- Securing the supply chain – chips, software, network: each connection point is a potential vulnerability
- Cost concerns: cheaper IoT-connected products may be less secure, but more popular in the market than expensive, more secure products

MIND THE GAP: DIGITAL RISKS AND EXPOSURES AND EXISTING P&C INSURANCE COVERS

SCENARIO I

A rogue employee operated a drone to collect video film footage of a party at the estate of Patriots' quarterback, Tom Brady. Mr. Brady claims an invasion of privacy with resulting mental anguish.

Which policies will respond?

- A. CGL
- B. Umbrella
- C. Aviation
- D. E&O
- E. None of the above
- F. All of the above

(Image: New England Patriots)

SCENARIO I – INSURANCE RESPONSE

A rogue employee operated a drone to collect video film footage of a party at the estate of Patriots' quarterback, Tom Brady. Mr. Brady claims an invasion of privacy with resulting mental anguish.

Which policies will respond?

Exposure	CGL	Umbrella	Aviation	E&O
PAI	?	?	?	X
Bodily Injury	?	?	?	X

SCENARIO II

An autonomous vehicle (AV) leased from Zipcar strikes a school bus filled with high school football players, causing mass casualties. Investigation reveals the proximate cause was the hacking of the AV's navigation system.

Which policies will respond?

- A. Auto liability/Zipcar
- B. Products liability/auto manufacturer
- C. Products liability/navigation system manufacturer
- D. Cyber liability/Wifi system manufacturer
- E. None of the above
- F. All of the above

(*Photo: Nissan*)

SCENARIO II – INSURANCE RESPONSE

An autonomous vehicle (AV) leased from Zipcar strikes a school bus filled with high school football players, causing mass casualties. Investigation reveals the proximate cause was the hacking of the AV's navigation system.

Which policies will respond?

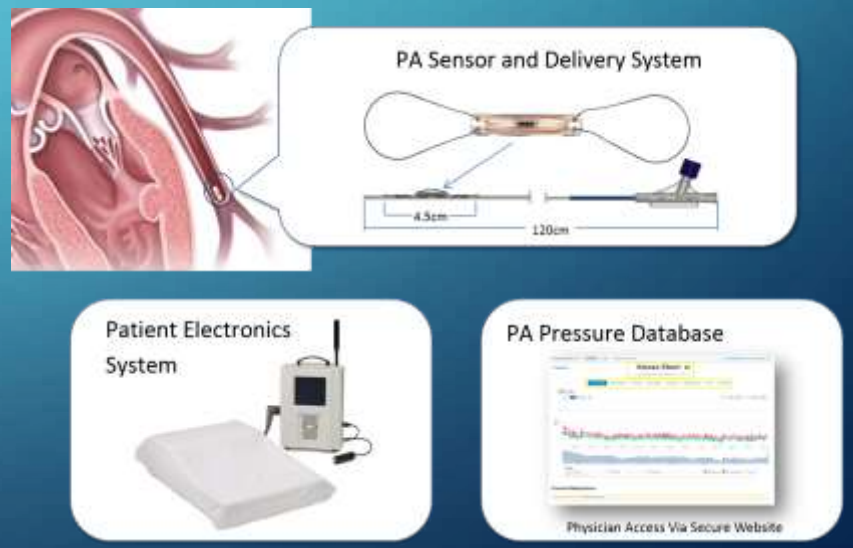
Exposure	Auto – Zipcar	PL – Auto manufacturer	PL – Navsys manufacturer	Cyber liability – Wifi system manufacturer
Bodily Injury	?	?	?	?

SCENARIO III

A software flaw in a connected medical monitoring device allowed the device to be hacked, compromising patient data. This data integrity issue led to errors in diagnosis, drug therapy, clinical intervention, e.g., unnecessary surgeries, personal injury, and even death. A class action was filed, the device manufacturer's stock price plummeted, and stockholder litigation ensued.

Which policies will respond?

- A. Products liability/device manufacturer
- B. Products liability/software developer
- C. Cyber liability/device manufacturer
- D. Cyber liability/software developer
- E. D&O
- F. All of the above
- G. None of the above



SCENARIO III – INSURANCE RESPONSE

A software flaw in a connected medical monitoring device allowed the device to be hacked, compromising patient data. This data integrity issue led to errors in diagnosis, drug therapy, clinical intervention, e.g., unnecessary surgeries, personal injury, and even death. A class action was filed, the device manufacturer's stock price plummeted, and stockholder litigation ensued.

Which policies will respond?

Exposure	PL – Device manuf.	PL – Software dev.	Cyber liability – Dev. manuf.	Cyber liability – Software dev.	D&O
Data breach – privacy invasion	X	X	?	?	X
Bodily injury	?	X	X	X	X
Share. deriv./ sec. class action	X	X	X	X	?

SCENARIO IV

A consumer downloaded from the Internet to his home 3-D printer the specs for manufacturing a handgun. During the download process, the specs data was corrupted. This caused the printer to produce a defective handgun. The defect caused the handgun to misfire, killing the individual's best friend.

Which policies will respond?

- A. Products liability/specs designer
- B. Cyber liability/internet service provider
- C. Products liability/3-D printer manufacturer
- D. Consumer's Homeowner's policy
- E. All of the above
- F. None of the above

SCENARIO IV – INSURANCE RESPONSE

A consumer downloaded from the Internet to his home 3-D printer the specs for manufacturing a handgun. During the download process, the specs data was corrupted. This caused the printer to produce a defective handgun. The defect caused the handgun to misfire, killing the individual's best friend.

Which policies will respond?

Exposure	PL – Specs designer	Cyber liability – Internet service provider	PL – Printer manufacturer	Homeowner's – Consumer
Bodily Injury	?	X	?	?

SCENARIO MEETS REAL LIFE

- On 10/21/2016, a hacker created a botnet by stringing together DVRs, webcams, and other products incorporating IoT devices.
- The botnet launched an unprecedented denial-of-service attack on Dyn, a domain name service shared by the New York Times, Twitter, Spotify, and other web sites and services, that particularly affected the East Coast of the U.S.
- The attack overwhelmed the web sites and services, causing them to slow down significantly and making them virtually inaccessible to users.
- The number of such attacks is expected to increase exponentially unless IoT device and network security significantly improve.

How does insurance respond?

DIGITIZATION: RE-ENVISIONING INSURERS' ROLE IN IDENTIFYING, MANAGING, AND FINANCING RISK AND EXPOSURES

DIGITIZATION – BIG DATA AND THE CUSTOMER ARE KING

- Big Data provides insurers with actionable insights and a more accurate picture of hazards, risks, and exposures
- Data aggregation across risks and industries allows for greater accuracy in risk assessment
- Insurers will have the ability to prevent losses through regular feedback to customers on data
- Pressure for insurers to quickly expand data collection and analytics capabilities and to leverage this data by creating new pricing models and products and modifying underwriting decision-making

The digital partnership

between insurer and insured

DIGITIZATION – INCREASED CUSTOMER-CENTRICITY

- Coverage customization
- Ability to meet shifting insurance needs
- Smart systems will keep insureds and insurers apprised of changing risks and exposures
- For commercial customers, need for stated insurable values eliminated
- Policies and premiums can be adjusted daily

DIGITIZATION – RECASTING UNDERWRITING

Underwriting becomes a continuous, high-touch, high-value-adding process rather than a cyclical one

- Increased accuracy in rates and premiums
- Premiums expected to decrease as risks and exposures are better understood and managed in real-time
- Insurers and insureds partner to actually reduce risk
- As losses decrease, profitability increases
  - Examples
    - Avoidance of pollution event
    - Employee fraud detection
    - Industrial equipment failure
- As customer experience improves, so should customer retention

HYBRID PRODUCT/SERVICES SOLUTIONS

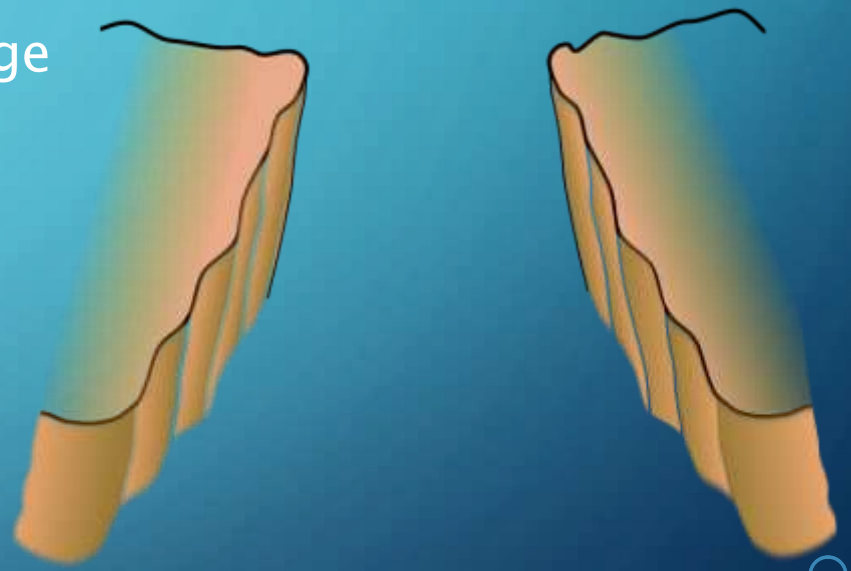
But . . . As risks and exposures decrease, so will the need for certain traditional insurance products such as first- and third-party personal auto and business interruption

Resulting premium revenue loss may be offset, at least in part, by offering services in conjunction with other service providers that complement insurance products and meet customer needs

EMERGING INSURANCE COVERAGE CONSIDERATIONS

Digitization's insurance coverage implications – gaps

- Cyber policies traditionally don't cover property damage and bodily injury
- CGL, Products Liability, E&O and D&O may cover some losses
- Difference-in-conditions coverage may be needed



EMERGING INSURANCE COVERAGE CONSIDERATIONS

Gaps in traditional insurance for data security/privacy exposures

General Liability – traditionally do not cover:

- Pre-claim expenses
- Damage to electronic data
- Criminal or intentional acts of the insured or its employees

Property – typically limits coverage to:

- Damage to/loss of use of tangible property resulting from a physical peril
- Some expressly exclude coverage for any damage to data

Fidelity/Crime – generally limit coverage to:

- Direct loss from employee theft of money, securities or other tangible property
- Even broadened computer crime coverage is usually limited
- Often expressly exclude coverage for the theft of data or information

Errors and Omissions – typically limit coverage to:

- Claims arising from negligence in performing specifically defined services
- And exclude coverage for criminal acts of insureds or their employees and pre-claim expenses associated with privacy breach

EMERGING INSURANCE COVERAGE CONSIDERATIONS

Data security/privacy exposures – some coverage elements

- Privacy and security-related
- Information asset
- Business interruption/extra expense
- Cloud protection
- Cyber crime
- Cyber extortion
- Criminal reward fund

EMERGING INSURANCE COVERAGE CONSIDERATIONS

Cyber liability insurance – procurement/recovery issues

EMERGING INSURANCE COVERAGE CONSIDERATIONS

Digital/IoT-Related Liability

- Entire industries that previously were not considered at risk now are. These include:
  - Any business connecting to the Internet and collecting customer data
  - Any business that manufactures, sells or distributes any Internet-connected device
- Most businesses, and their insurers, don't realize the extent of their digital/IoT risk.

Areas of Potential Gaps in Cyber Liability Policies for Digital/IOT-Related Losses

- Most cyber liability policies do not cover property damage, bodily injury, regulatory action or recall
- Examples where this can become an issue
  - Misread data or algorithm design flaw resulting in physical loss
  - Malfunctioning of remote-controlled sprinkler system causing damage
  - Hacking of baby monitor leading to regulatory enforcement action against manufacturer

EMERGING INSURANCE COVERAGE CONSIDERATIONS

Examples of potential coverage gaps for digital/IoT-related risks under current ISO CGL policy forms

- Exclusion for "work that has not yet been completed or abandoned"
  - Failure of medical devices incorporating sensors or that communicate through and received instructions via apps
  - Failure of remote-controlled HVAC system
- Loss caused by algorithm, not device or system
- Because algorithms may be changed, work may be seen as incomplete, and the exclusion may apply to preclude coverage
- Exclusion "p," which precludes coverage for "loss of, loss of use of, damage to, corruption of, inability to manipulate data," may also apply to bar coverage

EMERGING INSURANCE COVERAGE CONSIDERATIONS

Drones – coverage issues

The Federal Aviation Administration (FAA) considers drones to be "aircraft."

That term is not defined in the typical general liability (GL) policy.

EMERGING INSURANCE COVERAGE CONSIDERATIONS

Drones – coverage issues

Exclusion "g" in a standard CGL policy is an example of the type of aircraft/auto/watercraft exclusion that could preclude coverage for drone use:

" Bodily injury" or "property damage" arising out of the ownership, maintenance, use or entrustment to others of any aircraft, "auto" or watercraft owned or operated by or rented or loaned to any insured. Use includes operation and "loading or unloading."

This exclusion applies even if the claims against any insured allege negligence or other wrongdoing in the supervision, hiring, employment, training, or monitoring of others by that insured, if the "occurrence" which caused the "bodily injury" or "property damage" involved the ownership, maintenance, use or entrustment to others of any aircraft, "auto" or watercraft that is owned or operated by or rented or loaned to any insured.

This exclusion does not apply to:

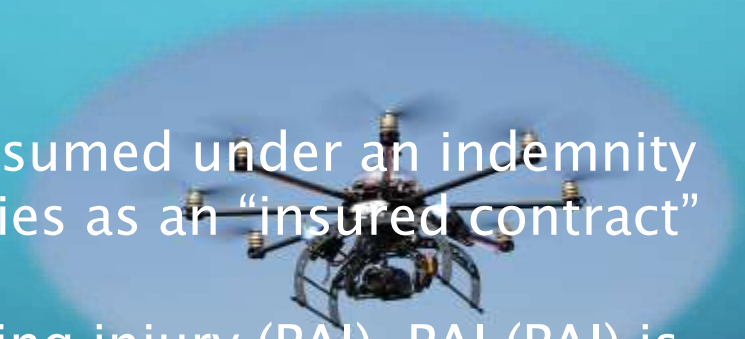
(4) Liability assumed under any "insured contract" for the ownership, maintenance or use of aircraft or watercraft …

EMERGING INSURANCE COVERAGE CONSIDERATIONS

Drones – coverage issues

Potential coverage under standard GL policies

- Non-owned drones
- Liability for drones assumed under an indemnity agreement that qualifies as an "insured contract"
- Personal and advertising injury (PAI). PAI (PAI) is not part of the standard GL policy's aircraft exclusion



But, a June 2015 ISO Unmanned Aircraft Exclusion (CG2109-0615) specifically excludes PAI, BI, and PD

EMERGING INSURANCE COVERAGE CONSIDERATIONS

Drones – aviation policies

- Most aviation markets write this cover
- Most include Personal Injury (Advertising Injury not as readily available)
- Contractual Liability cover not always excluded; if it is, it can be written back in
- Hangarkeepers can be made available

DIGITIZATION: INSURER RESPONSE

HOW INSURERS CAN RESPOND

The conventional response has been to:

BUILD IT
Labs, internal innovation

BUY IT
Venture funds, M&A

JOIN IT
Partnerships and open innovation

In many cases, these efforts are reactive, merely an attempt to play catch-up to an industry that is rapidly evolving.

Disruption will happen. To win, established insurance companies will have to find ways to embrace and profit from the change.

Millennials, blockchain, IoT – all are areas that we don't fully understand. And yet, we know they will be mission critical to our business. We must do more than react. The question is: ***How do we use these trends, capabilities, and segments to proactively open up fundamental new opportunities for our business?***

HOW INSURERS CAN RESPOND

But few companies have maximized value creation

Not all established insurance companies are starting from a standstill. Billions have been invested in build-it, buy-it initiatives.

And, yet, investment does not equal preparedness. The industry is littered with lost value from investments that should have been made but weren't – or worse: investments that were made before the organization knew how to extract business value from them. The structural elements that underpin successful investment, *e.g., innovation process, operating model, governance,* can't be neglected. Firms that balance investment and readiness have a greater ability to maximize existing outlays and evolve their strategy as the market shifts.

HOW INSURERS CAN RESPOND

There are two jobs to be done

01

Future Proof My Business

Future proof the business by creating the new products, B2B and B2C experiences, and business models that will drive growth

02

Unlock My Previous Investments

Unlock the value hidden away in prior investments by evolving the human, operational, product and business model development processes that are needed to do so

HOW INSURERS CAN RESPOND

Future Proof My Business

Key considerations for future proofing

01

How might we defend attractive parts of the value chain from new entrants?

02

How might we better understand, segment, and target customers that are consistently profitable?

03

How might we create an ecosystem that improves "stickiness" with the RIGHT parts of my risk pool?

04

How might we maximize the perceived value of my existing products?

05

How might we leverage digital to better empower and engage my employees?

06

How might we fund changes in the business by improving efficiency through digital?

HOW INSURERS CAN RESPOND

Unlock My Previous Investments

Key considerations for existing investments

01

How might we unlock the promise of our existing technology and platform investments?

02

How might we capitalize on partner inflection points, e.g. Guidewire updates?

03

How might we improve the product group's agility and speed to market?

04

How might we enable mass customization without creating new products?

05

How might we fundamentally change the Total Cost of Ownership?

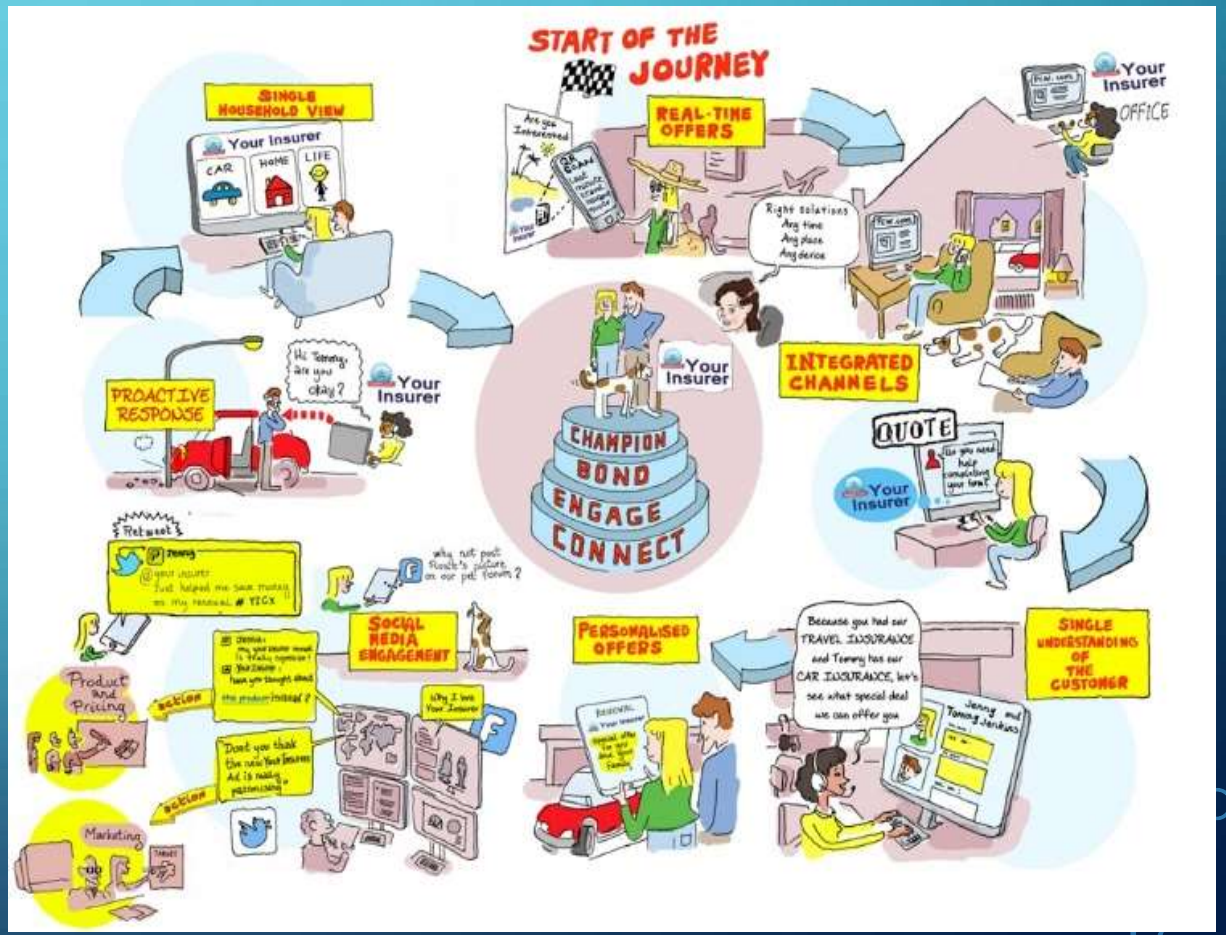
06

How might we fund changes in the business by improving efficiency through digital?

HOW INSURERS CAN RESPOND

Capgemini Consulting's early work focused on **creating Digital Masters in the Retail Industry.**

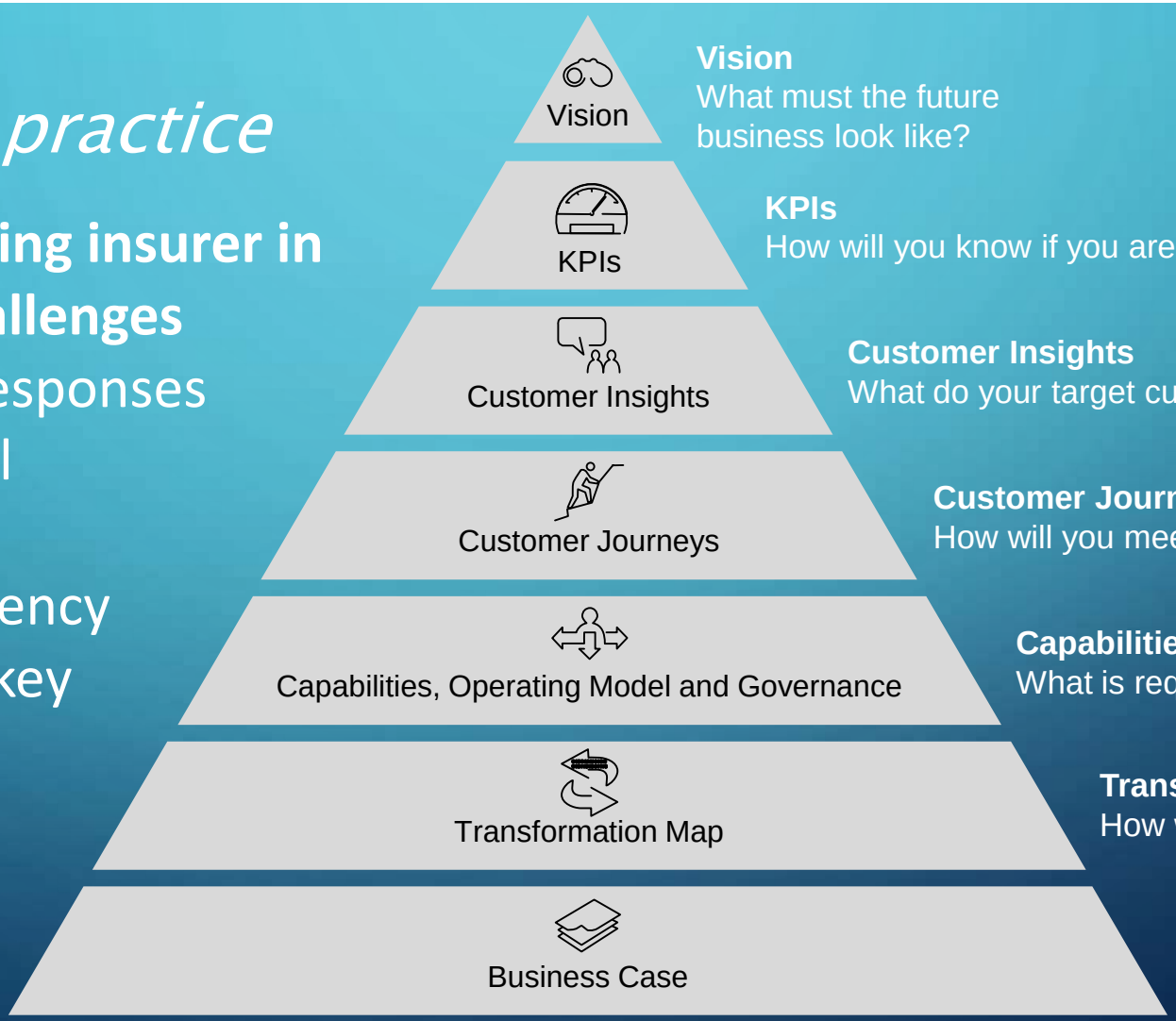
That experience taught us that it is critical to ***put the Customer at the center*** of the business – and ***build the business around the customer***.



HOW INSURERS CAN RESPOND

Driving insurer transformation in practice

Transforming an existing insurer in response to these challenges is not a trivial task. Responses are required at several different levels - and alignment and consistency between the levels is key to the Insurer's success.



Vision
What must the future business look like?

KPIs
How will you know if you are succeeding?

Customer Insights
What do your target customers want, need, and value?

Customer Journeys
How will you meet those customer requirements?

Capabilities, Operating Model and Governance
What is required to deliver those journeys?

Transformation Map
How will you deliver to those requirements?

Business Case
Why is this a good idea?

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