The Internet of Things (IoT) – Reinventing Insurance

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Risk Solutions

Munich RE
“The insurance companies that win in the next century will be those that **insure least**, in that they pay the fewest claims and they’re the most preventive”

– Andreesen Horowitz

a16z Podcast: Reinventing Insurance January 31, 2016
What is IoT?

Cheap Hardware

Ubiquitous Connectivity

Cheap analytics in the cloud
Technology is getting smarter

“Memristors” could bring a new wave of micro technology and connected devices at the atomic level

The future is already here

Sensors can operate more quickly and on multiple levels. Equipment and devices can be monitored and controlled with far greater efficiency and with a capacity to interconnect devices at multiple locations and of many different types.
2016: 6.5 Billion devices
2020: 50 Billion devices

A tsunami of data
Information being transmitted from sensors to devices at a ferocious pace

Inter-connected devices will increasingly be at the heart of equipment, systems and operations in business, industry and homes around the world.
Financial impact of the IoT technology revolution

$3.9–$11.1 Trillion annually

All Industries are affected
The IoT Opportunity for insurance

Total Insurance Industry Premiums* (incl. >$700B USD Commercial*)

↓ 15%1 to ↓ 40%2

Total Insurance Industry Premiums (Primary Perils)

New IoT-based Financial Products
New IoT-enabled Services

* Includes 2016 worldwide commercial premiums of US$738.9B (22.1% commercial motor), Finaccord, Dec 2015.
1 Represents a drop in the premium basis mostly across primary perils in the next ten years. “Can a Fixed Cost Property/Casualty Industry Survive the Internet of Things?”, Celent, March 2016.
2 As a comparison, the auto insurance market is projected to decline by as much as 40% due to the expected emergence of autonomous vehicles according to a KPMG study
Well publicized IoT applications

60% of insurance companies have piloted or considered pilots of IoT

15% of insurance companies have launched IoT-based solutions

60% of insurance companies have piloted or considered pilots of IoT

Source: UBI Global Study 2016, Ptolemus

Powered by the Internet of Things, Insurance will evolve from product-centric to service-centric

New Technology Is Disrupting Insurance

Rapid advances in technology are disrupting the insurance industry with a shift towards near-perfect information that unpacks risk
Powered by the Internet of Things, Insurance will evolve from product-centric to service-centric

There Will Be A Shift Toward Value-added Services

With near-perfect information, the need to insure traditional risk decreases and our core value proposition will need to adapt.

Powered by the Internet of Things, Insurance will evolve from product-centric to service-centric

Insurance Will Evolve Into a Service-first Solution

We will address the future “business moments”¹ of our partners, client companies, brokers, and facility owners with service-first offerings that define the nascent IoT landscape – coupled with insight, products, etc.

¹ Gartner
Image Source: Getty Images/iStockphoto
IoT will change industry and disrupt insurance

IoT creates new insurance / financial product opportunities

IoT marketing and products are different

IoT extends business models beyond insurance

IoT is not primarily about risk reduction (efficiency, security, marketing & risk)

IoT customers are different (insurers, end customers, equipment manufacturers, etc.)

Glimpse of the IoT Landscape
Orchestrating an IoT ecosystem of partners and technology

“Meshify is a complete cloud-based Internet of Things (IoT) platform that develops electronic device management software; offers cross-platform measurement, monitoring, and control; and provides real-time monitoring and alerts of potential risks and information that improves business operations. Meshify offers software, hardware, and services that simplify the collection of data, manages complex monitoring; and displays sensor data in user-friendly web and mobile applications.”
20 software engineers and engineers dedicated to IoT research, experimentation and deployment

| >9,000   | >2,700   | 11   | >220  |
| sensors deployed | locations | occupancies installed | technology companies evaluated |

| >45     |
| technology solutions tested |

| >45     |
| alerting algorithms from developmental to production stage |

- Convenience Store
- Grocery Store
- Schools
- Churches
- Dry Cleaners
- Apartment & Condos
- Medical Offices
- Restaurant
- Office Buildings
- Hotels
- Machine Shop

IoT is HARD

Problems to Solve

- Data export and distribution?
- Alert and notification design?
- Real-time monitoring?
- Real world physics problems of time, space, connectivity
- Communications technologies?
- Service provider network?
- Data analytics?
- Financial guarantee?
- Data encryption (in transit and at rest)?
- Program management (contact updates)?

- Use case selection?
- Location selection?
- Sensor package selection?
- Front-end apps and UI?
- Hardware support and maintenance?
- Partners and technologies?
- Software and middleware?
- Machine learning?
- Predictive maintenance?
- Inventory management?
Sensor Array – Example

Typical School

Electrical equipment monitoring

Temperature sensor

Equipment monitoring

Vibration sensor

Temperature sensor

Water sensor

Temperature sensor

Ambient humidity sensor

Temperature sensor

Water sensor

Air Quality
and many more
With near-perfect information, the need to insure traditional risk decreases and our core value proposition will need to adapt.

From insurance to ASSURANCE

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