



Internet of Things – – the biggest disruptor in insurance?

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helene.stanway@senseconsortium.com



+44(0)7941576951



[hélène-stanway/](#)



Hélène Stanway – President & Co-Founder of SENSE

Former VP, Global Head of Technology Innovation at AXA XL & co-founder of world's first risk innovation incubator

Hélène Stanway has been in insurance for 28 years having worked at XL Group, XL Catlin, AXA XL and Lloyd's of London. Hélène has led global teams focused on underwriting operations, digital innovation and emerging technologies and data. Hélène has broad experience of working with start-ups, developing innovative solutions using IoT, Blockchain and AI and leading the adoption of data standards in the London and Lloyd's Market. Hélène has won multiple national and international awards both personally and for the initiatives she has led.













Context for change

Why is insurance changing now?



The 10 C's

During a 2022 London Market insurance survey, the following were described as the main themes being discussed at Board level:

	Clients	Changing buying habits, changing risks landscape and clients retaining more risk
	Cost	Focus on efficiency vs writing profitable business
	Climate	Social, environmental and economic climate concerns
	Conflict	Politics, economic pressure & instability caused by conflict
	Capabilities	Changing business models, seeking easier placement through hubs, facilities & technology
	Covid	Living with the impacts of covid, ensuring we are more prepared in the future
	Cyber	Do we join or avoid the party
	Culture	Attracting talent & creating the right environment for my business to thrive
	Control	Can we control risk and client's part in managing it
	Continuity	Relevance being challenged, all except client & capital markets can be disintermediated

Internet of Things (IoT) and real-time data and insights directly impacts 9 of the 10 themes

What are the major trends?

Clients Changing buying habits, changing risks landscape and clients retaining more risk

Cost Focus on efficiency vs writing profitable business

Climate Social, environmental and economic concerns

Competition Economic pressure and conflict

A big focus on real time data and insight to enrich and enable new products and services

Changing customer expectations of the digital interface driven by Apple, Google etc..

Customer centric business models/ ecosystems delivering new insights & revenue streams

Introducing Internet of Things

One of many definitions!

The Internet of Things (IoT) describes the network of physical objects, things that are embedded with sensors, software, and other technologies for the purpose of connecting and exchanging data with other devices and systems over the internet. These devices range from ordinary household objects to sophisticated industrial tools

IoT broadly spans the following areas:



What does that mean for commercial insurance?

IoT / Real-Time Data is a Foundation for the future of Physical Commercial Insurance

A common component to the majority of ecosystems is real-time data:

Customer, Customer behaviour, Operations, Risk, ESG measures

Quick Poll



Question

For those of you with an iPhone, how many IoT sensors are there in an iPhone 12?

2

4


6

8






Poll
answer

Question 

For those of you with an iPhone, how many IoT sensors are there in an iPhone 12?

2

4

6 

8

- Answer
- 1 Face ID
 - 2 Barometer
 - 3 Three-axis gyro
 - 4 Accelerometer
 - 5 Proximity sensor
 - 6 Ambient light sensor



Emerging Insights & IoT

Research findings

- Macro economic pressures will demand propositions which address affordability; increased use of data to more accurately price risk is emerging
- Portfolio underwriting (or tracking/ follow only) becoming more prevalent to make underwriting more cost efficient whilst still looking for solutions to underperforming parts of the portfolio
- Brokers and Insurers moving more into value-add prevention business models (away from commission). What part will risk management play?
- Drive to reduce social inflation of claims by better upfront severity claims management & more accurate risk valuations.



- Technology (IoT) now at a price point where larger customers can deploy it effectively. Insurers need to use their risk expertise to help customers build their business case
- Use IoT prevention technology on underperforming parts of the portfolio. Could / should gain traction with brokers as portfolio approach grows
- Target segments with biggest impact (e.g. food & beverage) from IoT case studies to trial effectiveness for customer and insurer rates
- IoT can more quickly & more accurately determine loss estimations based on data analytics & enables recovery optimisation

Possible Approaches

IoT in Commercial Property

The future of how commercial properties and industrial sites are managed and insured is changing radically through the availability of monitoring data from a wide variety of new and existing Operational Technology (OT) and IoT devices.

In the same way that **telematics is changing how motor insurance is risk assessed**, priced and has value-add value services, these same forces will radically affect the risk profile and management of commercial buildings - globally.



IoT devices are...

Sensory technologies installed into and around commercial properties. They are used to monitor, predict and assess a whole number of variables, such as water leakage, temperature, nearby river levels, mechanical failure, security issues, weather and provide real-time data to platforms that calculate risk and convert the data into relevant insights.



These real-time insights can be used to:

- Mitigate risks to commercial property owners, insurers and users through prevention and prediction - decreasing loss ratio percentage.
- Enable insurers to reduce costs of losses whilst providing a better price to their customers
- Improve business continuity measures by predicting, not just reacting to, loss events

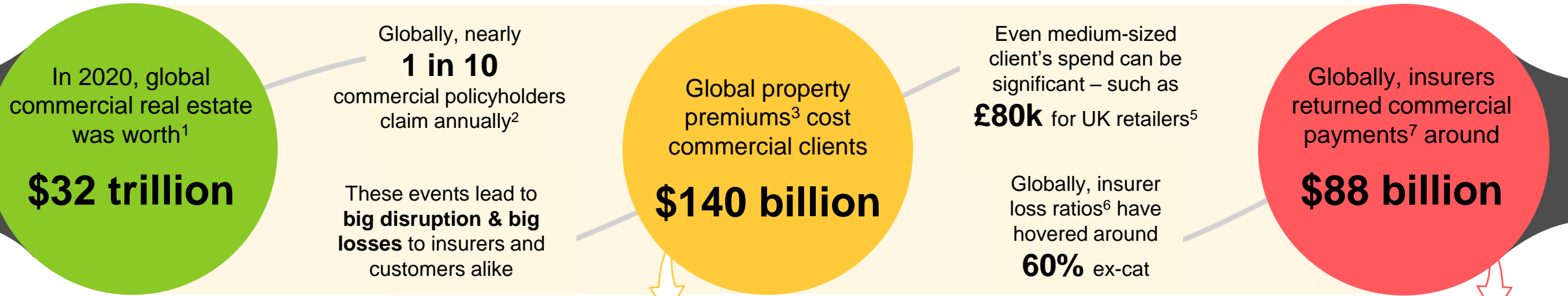
Climate change, sustainability and ESG are highly relevant to the conversation on IoT data.

For example, the built environment accounts for **34% of UK emissions**.

Commercial property risk events lend themselves to waste (e.g. energy). IoT real-time data has the ability to monitor energy usage and optimise efficiencies.

\$60bn of Commercial Property losses in scope

The global commercial property (CP) insurance market is ripe for modernization



Since turning in Q4 2017, CP prices have hardened over **15 consecutive quarters**⁴

\$19bn in NA & **\$21bn** in Europe (see Appendix 1 for regional variations)

IoT directly addresses ~2/3 of CP losses⁸: \$60bn

 Escape of water

 Fire

 Theft

As IoT develops, the claims bill will reduce as more types of losses are avoided

Commercial property owners are paying huge premiums because they are not being protected from attritional losses effectively enough

This leads to business interruptions, driving the rapid growth in premiums

However

it's a negative cycle that can be reversed by IoT devices!

When used to monitor, predict & assess risks with real-time data, **IoT devices can directly affect & reduce the risk of escape of water, fire & theft in commercial properties... ..potentially saving \$60bn of losses**

1. European Public Real Estate Association 2. Blended rate estimated based on available national regulatory filings and targeted carrier analyses 3. Swiss Re Sigma 3/2021 4. Marsh Global Insurance Market Index 2021 Q2 5. H160 market modelling of UK SME market 6. National regulatory filings 7. Excluding Covid-related and nat cat claims 8. National regulatory filings (PRA, NAIC) and targeted carrier analyses Source: EPRA; national regulators; Swiss Re; Marsh; H160; market analysis

Re/Insurers success

Re/insurers' success in integrating to become part of digital ecosystem communities will depend on the strength of their partners, and requires distinctive capabilities, access to data and the capability to model risks¹

“AS-A-SERVICE”

There is an increasing shift towards business subscription models, already prevalent in our personal lives and the Cloud, which are now emerging into the commercial space. These are digital-first and possible due to ubiquity of data & digitisation & advanced analytics allowing for better customer insight.

Why?

Control of the Customer Experience

Lateral growth & new services

Risk & Loss Control

Out-Compete

What enables success?

Invest in reworking and tailoring existing capabilities

Work with complementary partners

Understand & leverage your 'control points'

Data, data, data

IoT / Real-Time Data is a Foundation

A common component to the majority of ecosystems is real-time data: *Customer, Customer behaviour, Operations, Risk, ESG measures*

Poll: The Connected Risk Manager

A simple partnership;
building an ecosystem

A tale of two insured shopping centres.... Which is riskier? **A or B**



Insurable Value
£ **350m**

A

- Office
 - Retail (300 stores)
 - Cinema
 - Commercial kitchen's
 - Leisure facilities
 - Large bus station
 - 10,000 Parking spaces
- Fire detection and sprinkler installed
 - Steel frame with combination of glass and Euroclass A1 non combustible cladding
 - 60 acre site, isolated venue near motorway (J9/10 M25)
- October 1986
 - 192,900 m²



Occupancy	Fire Protection, Construction & Adjacent Risks	Age, Area (m ²)
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Insurable Value
£ **310m**

B

- Office
 - Retail (200 stores)
 - Cinema
 - Commercial kitchen's
 - Large bus and coach station
 - 11,500 Parking spaces
- Fire detection and sprinkler installed.
 - Steel frame with combination of glass and Euroclass A1 non combustible cladding.
 - Isolated venue near motorway (J9/10 M25).
- September 1998
 - 188,000 m²

How we underwrite today...

With thanks to: 

The Connected Risk Manager

Underwriting and Risk Management is no longer static....

STATIC RISKS

Building construction, square footage, previous claim history, crime statistics, location

- Fire suppression sprinkler installed
- Emergency lighting with battery backups in place
- Wet floor signs, rubber matting available

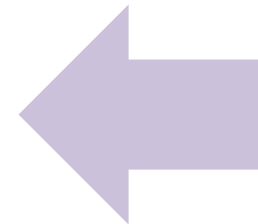
Static Risks are what the insurer knows at a **point in time** when setting the premium (typically COPE)

DYNAMIC RISKS

Building management systems, heating, cooling, behavioural

- Sprinkler valves not maintained correctly
- Heating & cooling coming on at the same time
- Cleaners not deployed to spills & hazards

Dynamic Risks are known 24/7 and technology 'sees the unseen'



This data is available today, insurers are doing nothing with it...

A simple partnership;
building an ecosystem

Poll: The answer

With the adoption of sensors, there is a clear differentiation between two similar risks:

WITH SENSORS

- A**
- Office
 - Retail (300 stores)
 - Cinema
 - Commercial kitchen's
 - Leisure facilities
 - Large bus station
 - 10,000 Parking spaces

Loss cost
£49,620

Total incidents
21 / year

Accidental Damage	6	£10,000
Escape Of Water	1	£2,900
Fire	1	£22,000
Impact	12	£14,300
Malicious Damage	1	£420

Tasks Missed Recurrently (Qtly)
~2%
Total: 48 tasks or 0.53 / day

Incident Capture Time
5 min.

Incident Resolution Time
1 hr

Total Loss Cost & Frequency

Details



Preventative Tasks Missed Recurrently

Incident Capture Time

Incident Resolution Time

- B**
- Office
 - Retail (200 stores)
 - Cinema
 - Commercial kitchen's
 - Large bus and coach station
 - 11,500 Parking spaces

Loss cost
£164,200

Total incidents
42 / year

Accidental Damage	12	£20,000
Escape Of Water	8	£90,000
Fire	2	£40,000
Impact	9	£11,000
Malicious Damage	3	£3,200

Tasks Missed Recurrently (Qtly)
~10%
Total: 391 tasks or 4 / day

Incident Capture Time
12 min.

Incident Resolution Time
32 hrs

WITHOUT SENSORS

Global Health Risk Facility (GHRF)

What is the problem we're trying to solve? Customer Pain Points:

- The Global Vaccine Supply Chain was commercially uninsurable
- Supply chains are full of inherent risk which significantly impacts effectiveness of vaccine programmes & people's health
- No data to support underwriting or risk management; studies showed majority of vaccines transported with significant temperature variation

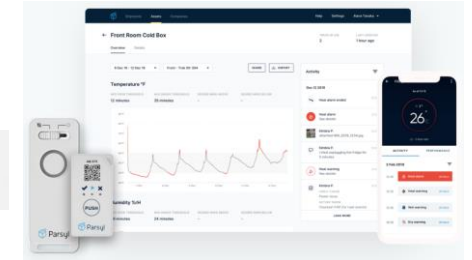
How might we? Customer Needs & Insights

- low and middle-income countries
- One interconnected risk management programme to share learnings and insights across all low and middle-income countries
- A training programme for countries to become (mostly) self-sufficient from a risk management perspective
- Data – to support underwriting and risk management improvements; a sensor distribution and data strategy
- Identify, understand, manage risk

The Solution

The Global Health Risk Facility

- Creating an ecosystem of funding, technology, insurance to solve a problem that no one alone could
- Real-time data with supporting risk management to monitor the condition of vaccines during transportation
- Started in early-2019, it took 2 years to articulate the problem to successful launch in December 2020
- One of the first 'SIABs' – Lloyd's Syndicate in a Box



Insurwave

What is the problem we're trying to solve? Customer Pain Points:

- No straight-through data transparency for Vessels from the client – broker – insurer – reinsurer
- 3 months to collect data for placement, significant data cleansing
- No automation or real-time view of vessel location/ vessel accumulation
- Significant administration & reconciliation given volume of insurance transactions

How might we? Customer Needs & Insights

- An ability to share data real-time with brokers/ insurers
- Real-time exposure management
- Significant reduction in administration for the client & brokers & insurers
- At the time, a use case to test Blockchain
- Managing Vessel changes – flag, selling, buying, time on risk

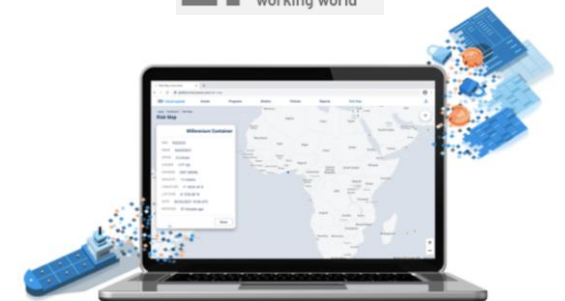


The Solution

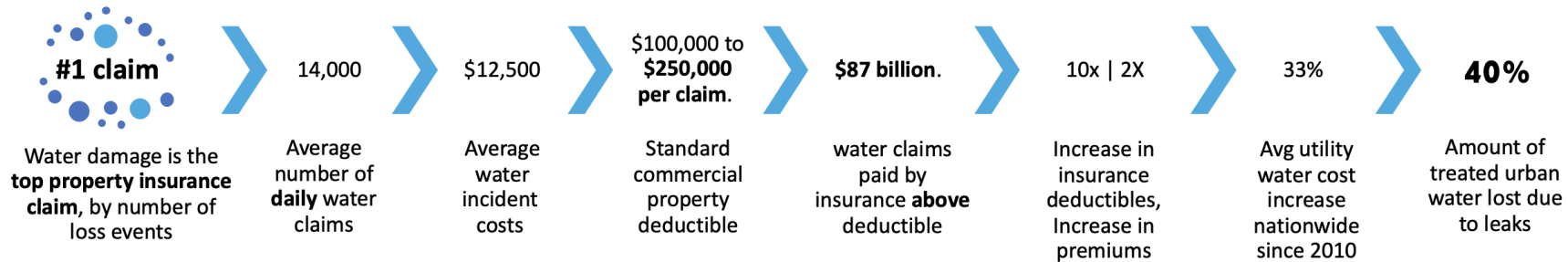


Insurwave

- An ecosystem of partners across the value chain & supporting partners
- A solution end-to-end for Vessel & contract data
- IoT/ GPS enabled allowing real-time vessel location & accumulation
- Smart contract
- Automation of certain transactions (e.g. war zone endorsements)
- The integration of ecosystems – the GHRF is in the Insurwave platform



Loss Control as a Service: Embedded / IoT Enabled



What is the problem we're trying to solve? Customer Pain Points:

- Deductibles make water-related damage an uninsurable risk that owners pay for out of pocket
- Water availability is becoming an existential risk for facilities
- ESG reporting is required, measurement doesn't exist
- Consistent, portfolio-wide installation is hard to achieve
- Technology decisions are disjointed and hampered by fear of tech
- Solutions require capital investment that owners can't fund

The Solution

Loss Control as a Service

A monthly subscription covering:

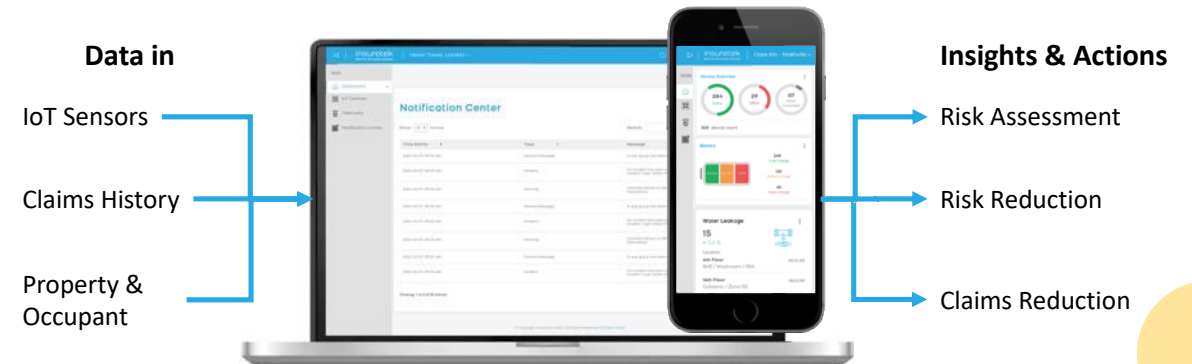
- Sensors
- Financing
- Installation
- A rated insurer backed warranty
- Monitoring
- Mitigation

BUILDING MANAGER FOCUSED

- Digital twin of building & sensors
- Aggregated IoT data
- Notification management
- Warranty and mitigation services

INSURER, RISK & ESG OFFICER FOCUSED

- Data analytics
- Risk analysis
- Micro-insurance enabling



How IoT enables ESG

IoT as an enabler for rigorous delivery of the Principles for Sustainable Insurance¹



1. Principles for Sustainable Insurance (PSI) serve as a global framework for the insurance industry to address environmental, social and governance (ESG) risks and opportunities—and a global initiative to strengthen the insurance industry’s contribution as risk managers, insurers and investors to building resilient, inclusive and sustainable communities and economies; 200 firms in the insurance industry – ~110 insurers, writing 30% of global premiums, and ~90 brokers and other service providers - have signed up
Source: United Nations Environment Programme Finance Initiative: <https://www.unepfi.org/psi/wp-content/uploads/2019/02/PSI-Guidance-for-non-life-insurance-underwriting.pdf>

How might we create 'Prevention As A Service'?



New insurance coverages to suit their evolving needs

New risk management services based on real-time data and insights

A **long-term** trusted partnership, ameliorating risk & reducing claims

Delivering on ESG commitments



Before we go to Breakout Groups...

Wrap-Up

- The use of IoT isn't just about technology, it's about culture
 - ✓ Successful IoT initiatives mean a successful navigation and change of internal organisational design and culture
- The use of IoT aren't incremental – think big or go home
 - ✓ Deep strategic thinking of value chains for areas where smart shifts can drive big improvements
- Critical thinking is imperative
 - ✓ It is imperative to understand which points along the value chain each company is best positioned to control versus those that partners should own, how participants could mesh capabilities, or how they will jointly manage the operating model of their ecosystem.






Thank you - contact us for further information



David Clamp – Founding member of SENSE




Former CIO at Hiscox UK, now Founder of The Camelot Network & Advisory on insurance tech strategies

 david.clamp@senseconsortium.com
 +44(0)7946185230
 david-clamp/



Hélène Stanway – President & Co-Founder of SENSE

Former VP, Global Head of Technology Innovation at AXA XL & co-founder of world's first risk innovation incubator

 helene.stanway@senseconsortium.com
 +44(0)7941576951
 hélène-stanway/



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