

Mark Scheve bio



Home

My Network

Jobs

Messaging

Notificatic13



Mark Scheve, CIC 

SVP, Strategic Growth - Portfolio Risk Solutions division at HSB

Des Moines Metropolitan Area · [Contact info](#)

 HSB - Hartford Steam Boiler

 Central College

Open to

Add profile section

Enhance profile

Resources

Key Topics

- Quick background on HSB and why we are involved in IoT
- P&C Industry Challenges with Property
- Current and future adoption trends for Property IoT
- How Property IoT Technology works
- Key factors that make Property IoT initiatives succeed and fail
- Impact of Property IoT on the bottom line
- IoT based data – unlocking more insights for better risk selection and pricing
- LEARN FROM OUR EXPERIENCE

Leveraging expertise in insurance, engineering, and technology to empower our partners and help **businesses** and **individuals** thrive



HSB capabilities allow for endless combinations to create new business opportunities leveraging:

- Insurance
- Engineering
- Technology
- Data & Analytics
- Ecosystem Partnerships
- Munich Re – including Financing & Investment Capabilities

HSB is reshaping the future and modernizing specialty insurance because HSB is at the intersection of insurance, engineering, and technology.



Examining the future on **insurance** and driving innovation

Employing 150+ years of **engineering** rigor

Predicting and preventing loss through novel **technology**

Leveraging **data**, our partner **ecosystem** and the breadth of **Munich Re**

Global Engineering & Specialty Insurance Leader

~3,300 employees worldwide



Insurance

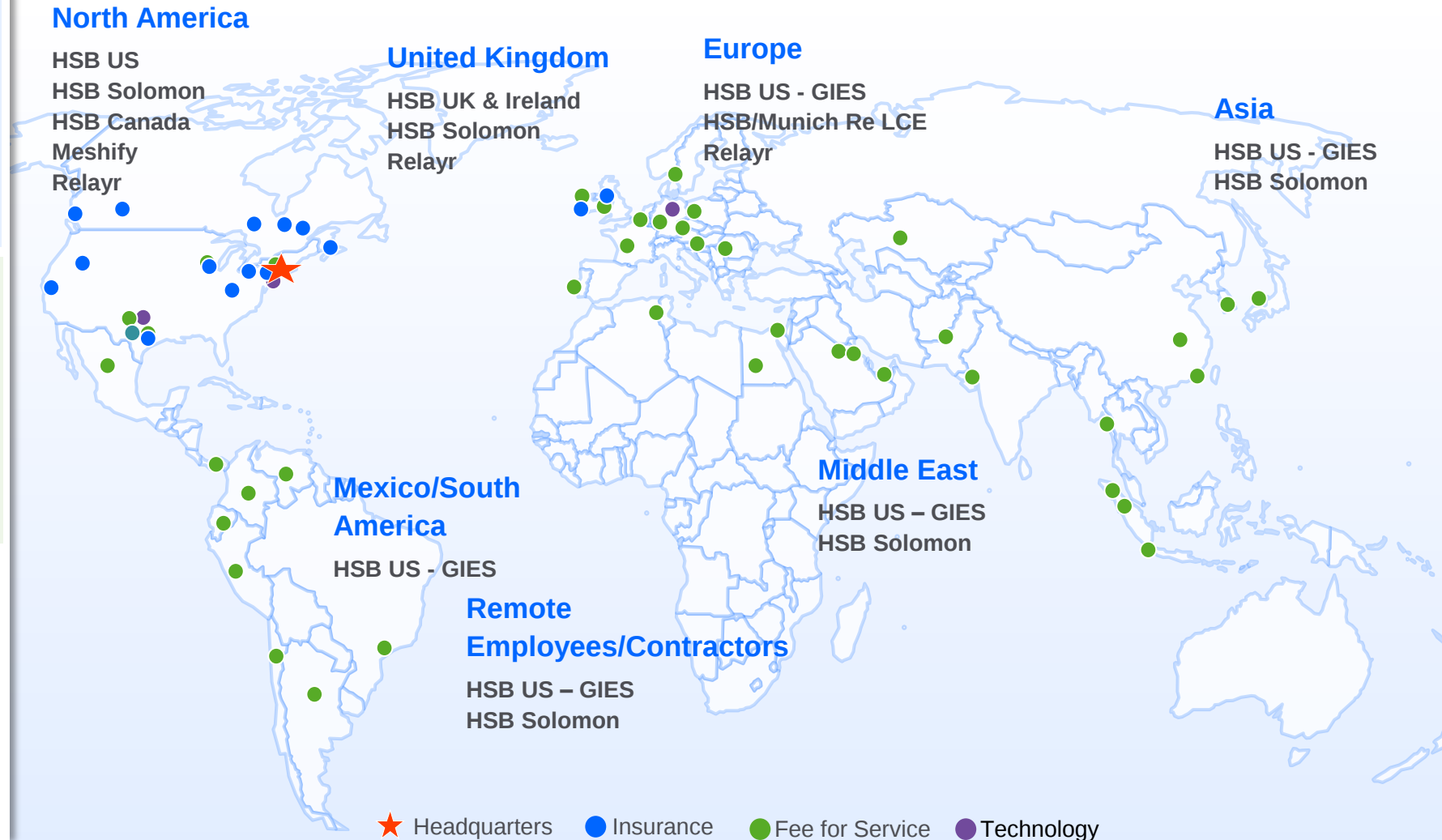
- Regions: US, Canada, UK/ROI
- Commercial Lines & Personal Lines
- Selective Energy and OEM offerings
- Low to no NAT CAT or long tail risks

Engineering

- ~1,500 inspectors, engineers, and consultants in more than 40 countries
- Energy benchmarking/CO2 sustainability
- 1.7+ million equipment inspections
- 2,500 ASME / PV inspection customers

Technology

- Building tech-enabled partner ecosystem
- Supporting insurance innovation and generating new products, services and business models (e.g., IoT)



The Overall Story on P&C Performance

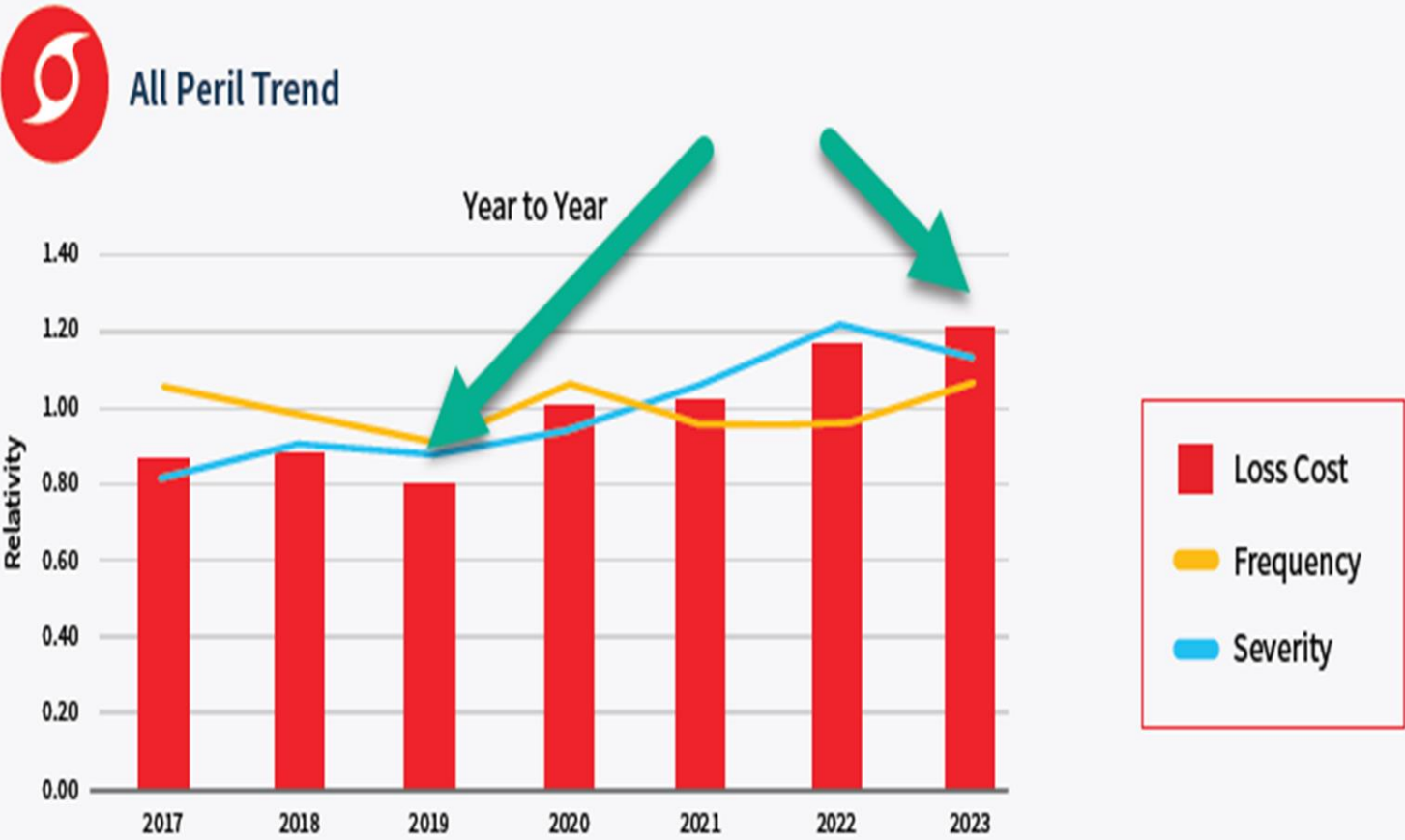
The P&C market is challenged by an unprecedented convergence of economic and performance factors including:

- Social inflation
- Goods/Services price inflation
- Regulatory environment
- Economic uncertainty
- Supply chain stress
- Increasing CAT frequency & severity
- Labor shortages



As a result, the industry broadly has seen a deterioration in combined ratios over the past decade with **Property** being the most challenged LOB

Property loss results continue to challenge the insurance industry

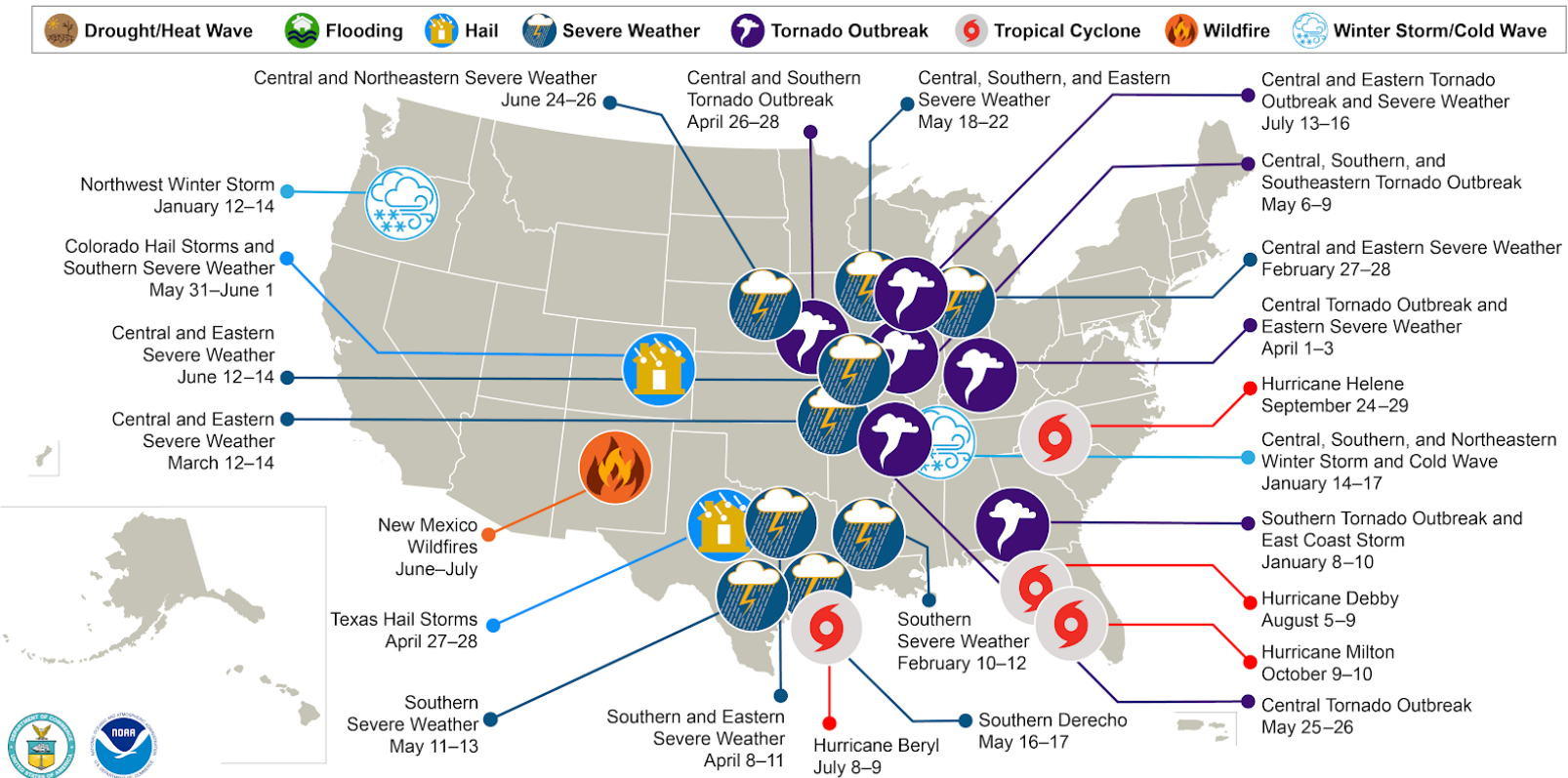


> 50% increase in loss costs from 2019 to 2023 driven both by frequency and severity

Weather-related loss impacts have been record-breaking

As of November 1, 2024, there have been 24 weather/climate disaster events throughout the year

U.S. 2024 Billion-Dollar Weather and Climate Disasters



This map denotes the approximate location for each of the 24 separate billion-dollar weather and climate disasters that impacted the United States through October 2024.

Growing trend of Billion-Dollar events

CPI-adjusted to account for inflation

Time Period	Events avg/year	Cost avg/year
1980s	3.3	\$21.9B
1990s	5.7	\$33.4B
2000s	6.7	\$62.0B
2010s	13.1	\$99.3B**
Last 5yrs	20.4	\$123.5B
Last 3yrs	22	\$147.3B
2023	28*	95.1
2024	24	24

*2023 had the most events @ 28

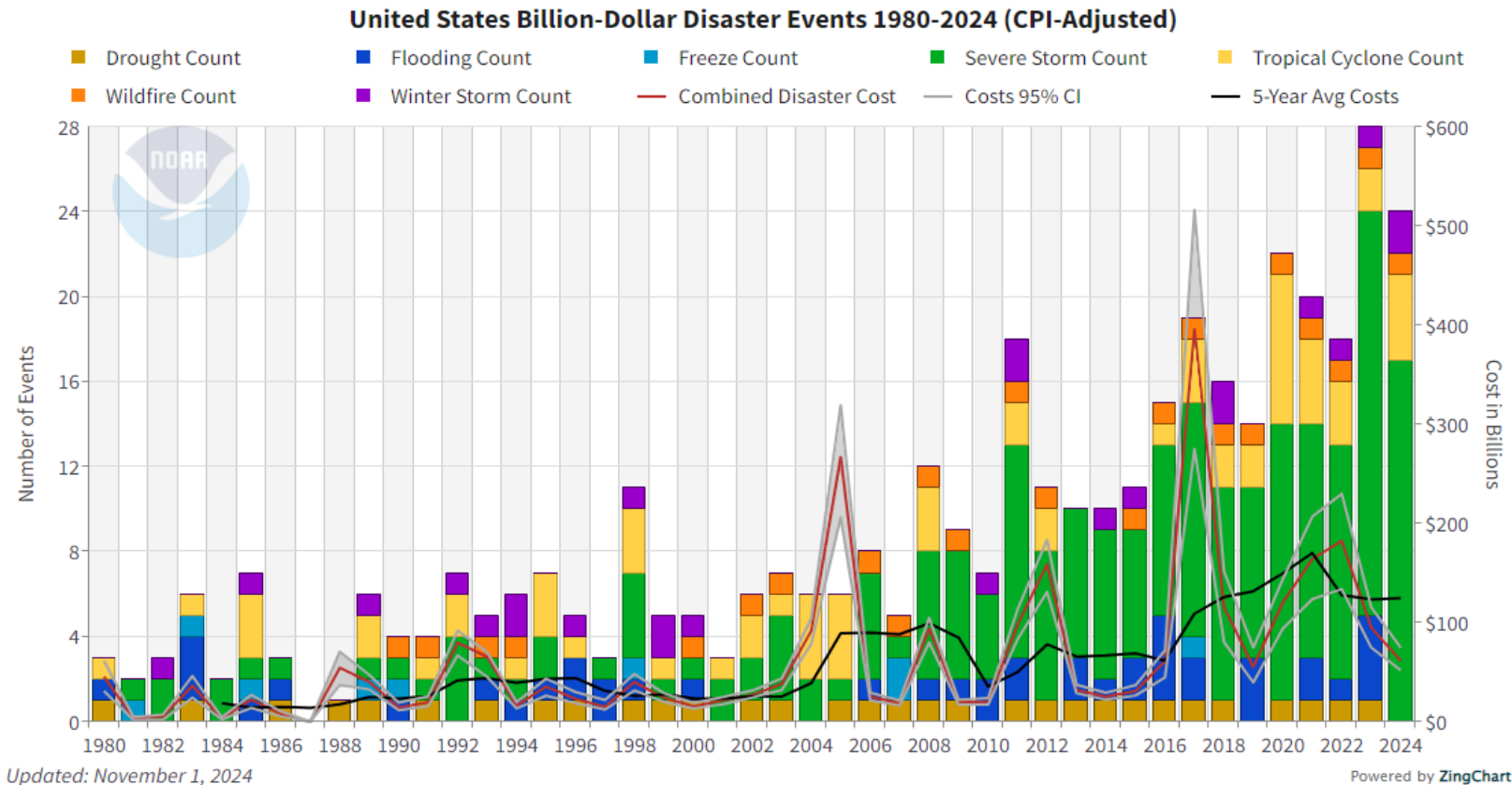
**2017 had the highest cost @ \$395.7B

Source: [Billion-Dollar Weather and Climate Disasters](#)
[National Centers for Environmental Information \(NCEI\)](#)

Severe Convective Storms represent a significant driver for the increase in both annual events and cost

While some event types are relatively flat and potentially predictable, other event types have become more frequent and costly

44-year look at trend of CPI adjusted billion-dollar events

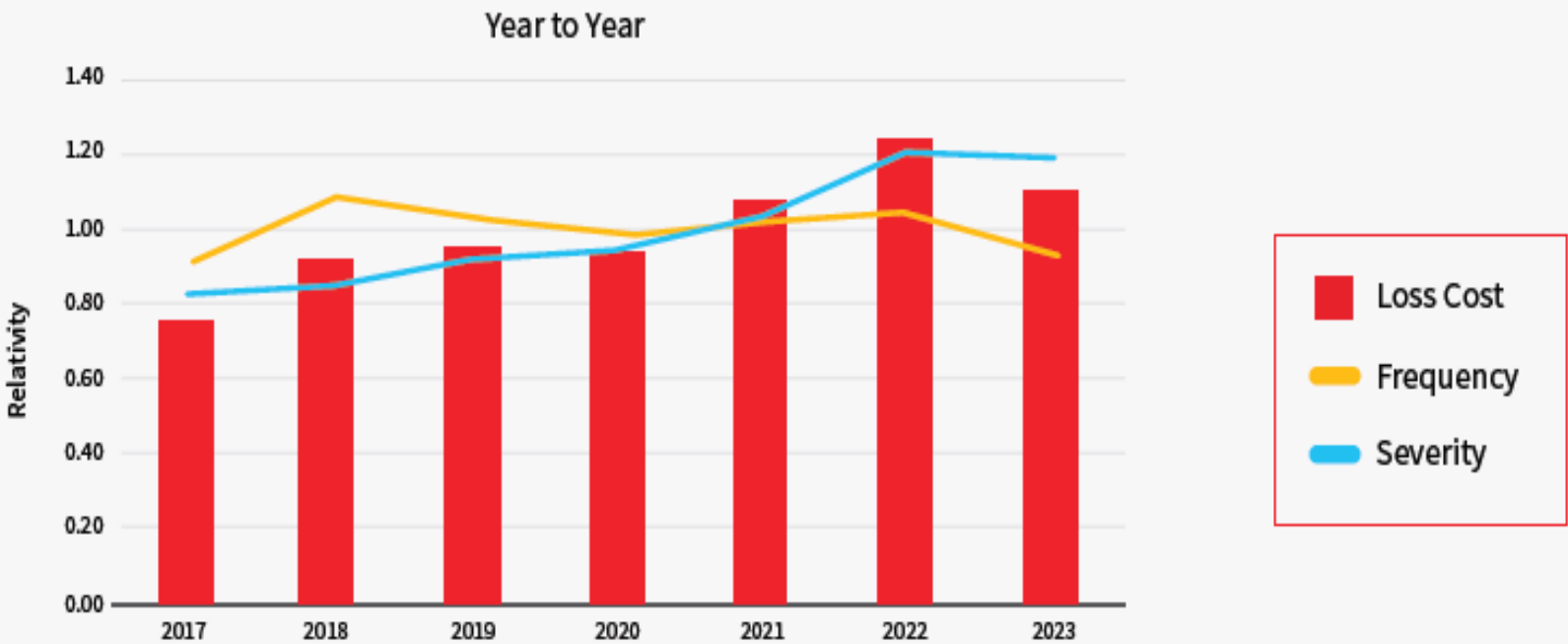


The 2024 current total of \$61B does not yet include Hurricanes Helene or Milton, which may add more than \$100 billion

Weather/CAT is not the only driver of adverse Property results



Non-Weather Related Water Peril Trend

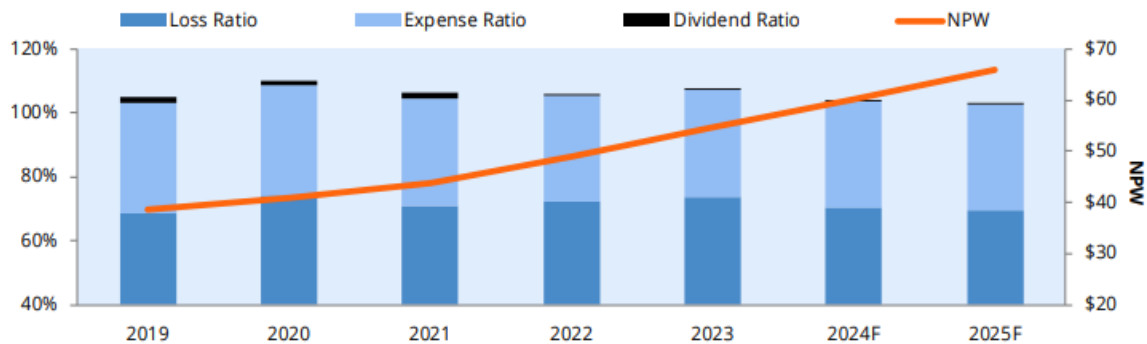


2023 showed a slight decrease, but overall 7-year trend for loss costs is up significantly

Signs of improved property performance are emerging as multiple years of elevated rate and underwriting actions are earning in

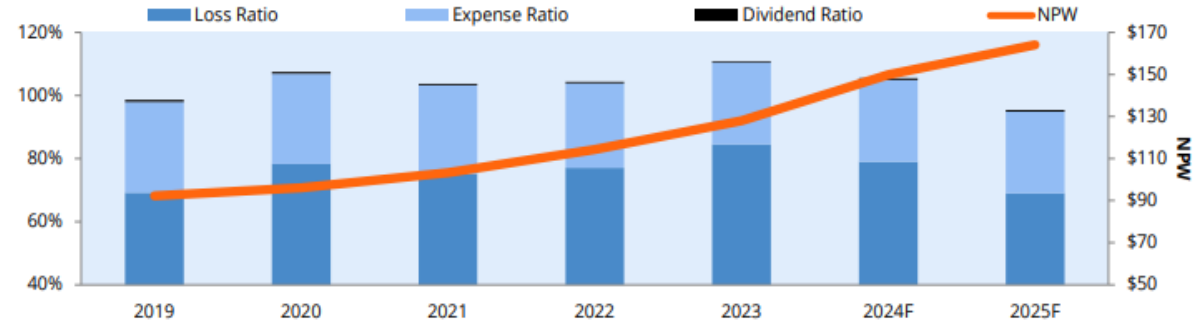
As performance improves, property-related lines remain susceptible to catastrophic events, while insurers place increasing focus on secondary loss drivers

Commercial Multiperil Recent Results
\$ in billions



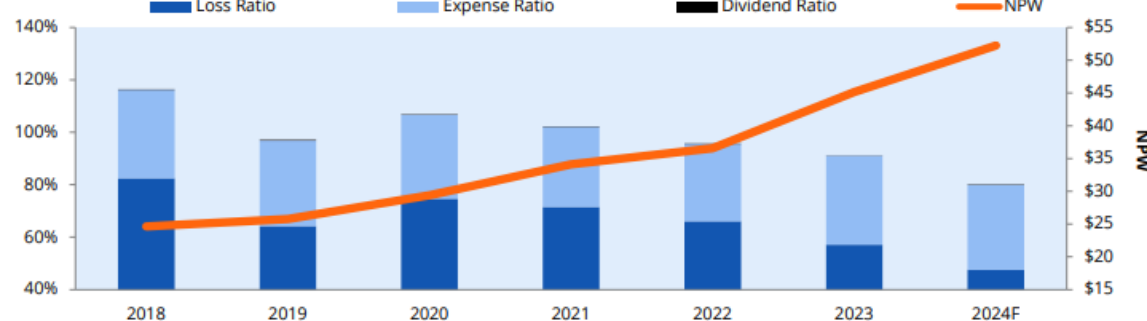
Source: ©2024 Conning, Inc., as published in Conning's Property-Casualty Forecast & Analysis by Line of Insurance, 2024Q1 edition. Historical data source: Copyright 2024 S&P Global Market Intelligence LLC

Homeowner's Recent Results
\$ in billions



Source: ©2024 Conning, Inc., as published in Conning's Property-Casualty Forecast & Analysis by Line of Insurance, 2024Q2 edition. Historical data source: Copyright 2024 S&P Global Market Intelligence LLC

Commercial Property Recent Results
\$ in billions



Prepared by Conning, Inc. Sources: ©2024 Conning, Inc., as published in Conning's Property-Casualty Forecast & Analysis by Line of Insurance, 2024Q3 edition. Historical data source: Copyright 2024 S&P Global Market Intelligence LLC

Industry Experience and Response - Key Insights and Implications for IoT

Industry Trends

Combined Ratio for P&C (2023) ~103.9

Commercial ~97.7

Personal ~109.9

Key Drivers of adverse property performance are CAT events, property inflation, & non-weather loss

Increasing focus on “below the radar” i.e. non-weather losses in property



Industry Response

Carriers prioritizing profit vs growth: pushing rate & taking UW action across portfolios

Carriers seek opportunities to leverage data, analytics, and technology to more accurately rate, underwrite, and prevent losses across both P&C

Many carriers are now seeking solutions for their secondary and tertiary loss drivers with a willingness to invest

Key Implications for Property IoT

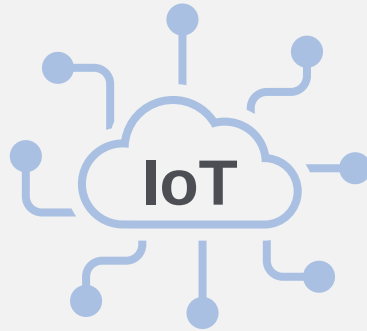
IoT initiatives need to be **self-funded** or initial expenses marginalized, with **documented and tracked ROI**

IoT initiatives must be **data-driven, effectively implemented**, and bring a **positive customer experience**

New insurance products (e.g., Parametric) have an opportunity to have technology integrated



IoT adoption Trends



In 2021, there were more than 10 billion active IoT devices and by 2025 this number is expected to surpass 75 billion

83% of organizations have improved their efficiency by introducing IoT technologies *

Data



Data & AI

Value Chain application to improve performance and lower expense levels, while enhancing human expertise

64% of surveyed carriers, brokers, business owners, and consumers ranked AI as the most impactful emerging technology with 40% of the population using Gen AI**

Source: *[Internet of Things statistics for 2024 – Taking Things Apart](#)

Source: ** [RiskScan 2024: Emerging Technologies](#)

Further evidence of accelerating IoT adoption

According to recent analysis from **Deloitte**, sensor deployment in the commercial real estate (CRE) sector is projected to grow at a compound annual [growth rate of 78.8%](#). This growth indicates a significant adoption of IoT technology within the industry, facilitating the collection of vast amounts of data to optimize building operations and enhance tenant experiences.

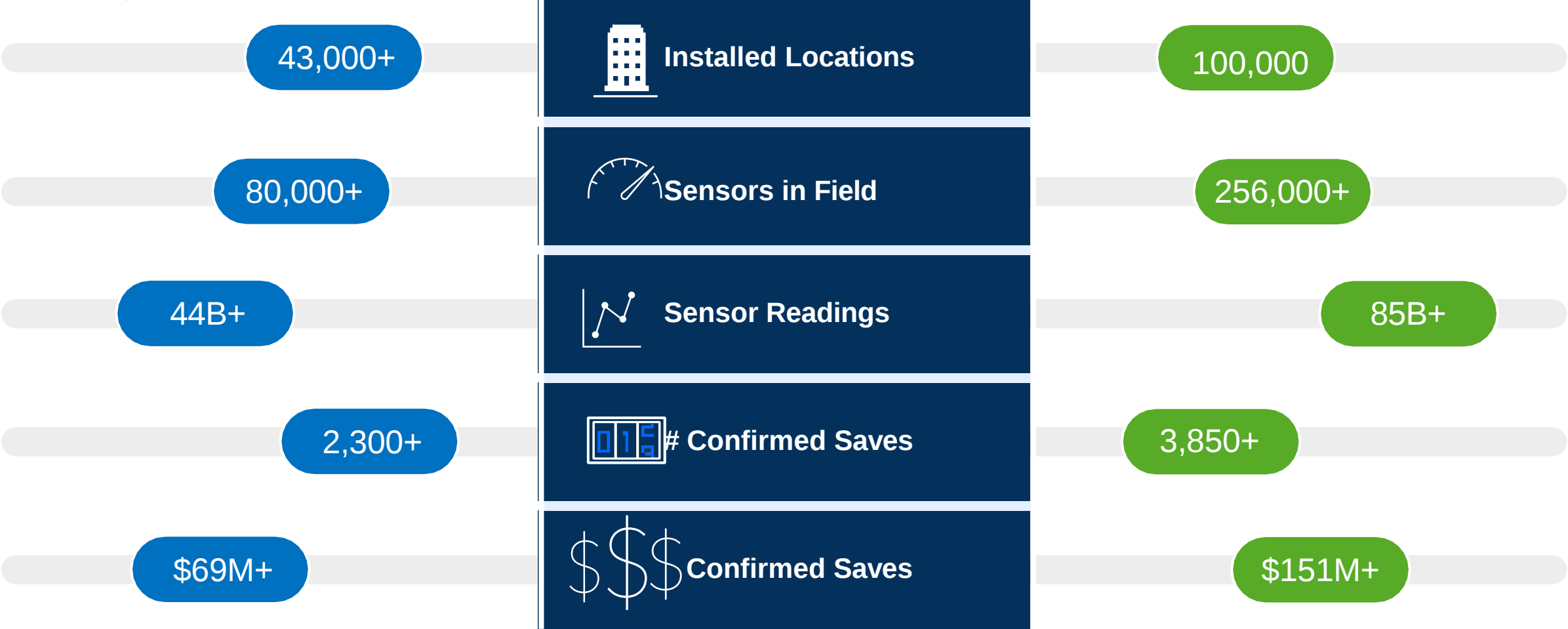
In 2022, the global count of IoT users in smart homes surged to [around 307.8 million—a remarkable 88% increase since 2018](#). And the momentum isn't slowing; predictions suggest we'll see about 672.6 million users by 2027 globally. IoT's exponential rise in residential real estate highlights a fundamental shift towards smarter, more efficient living environments that are beneficial to both landlords and tenants.



Sensor Adoption – What HSB has Experienced

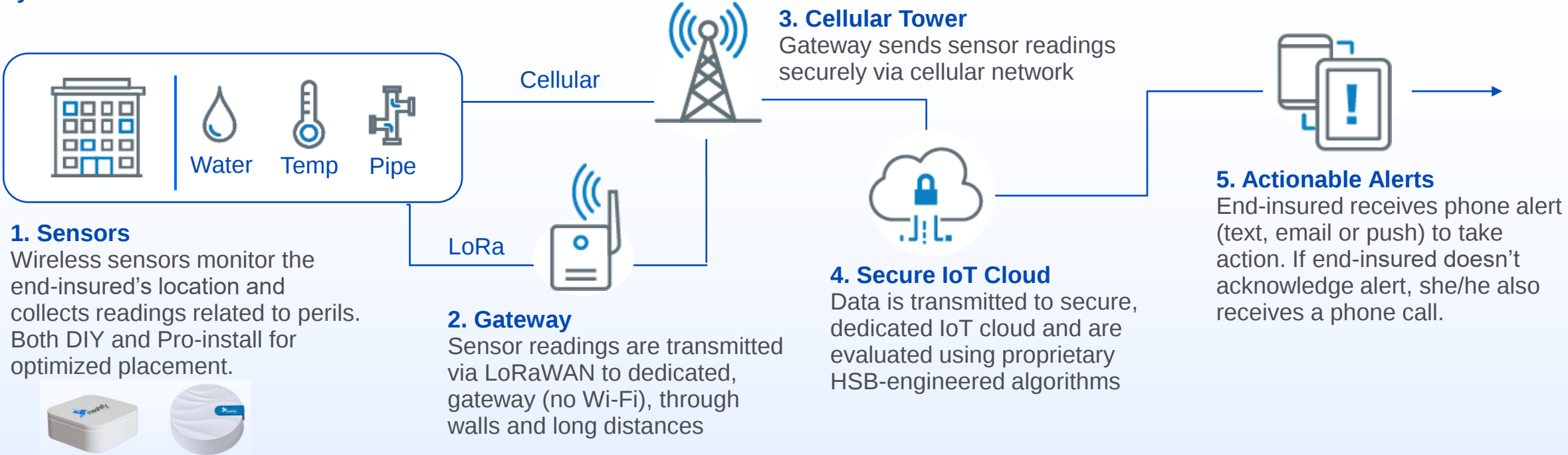
February 2023

Oct 2024



How the Technology Works:

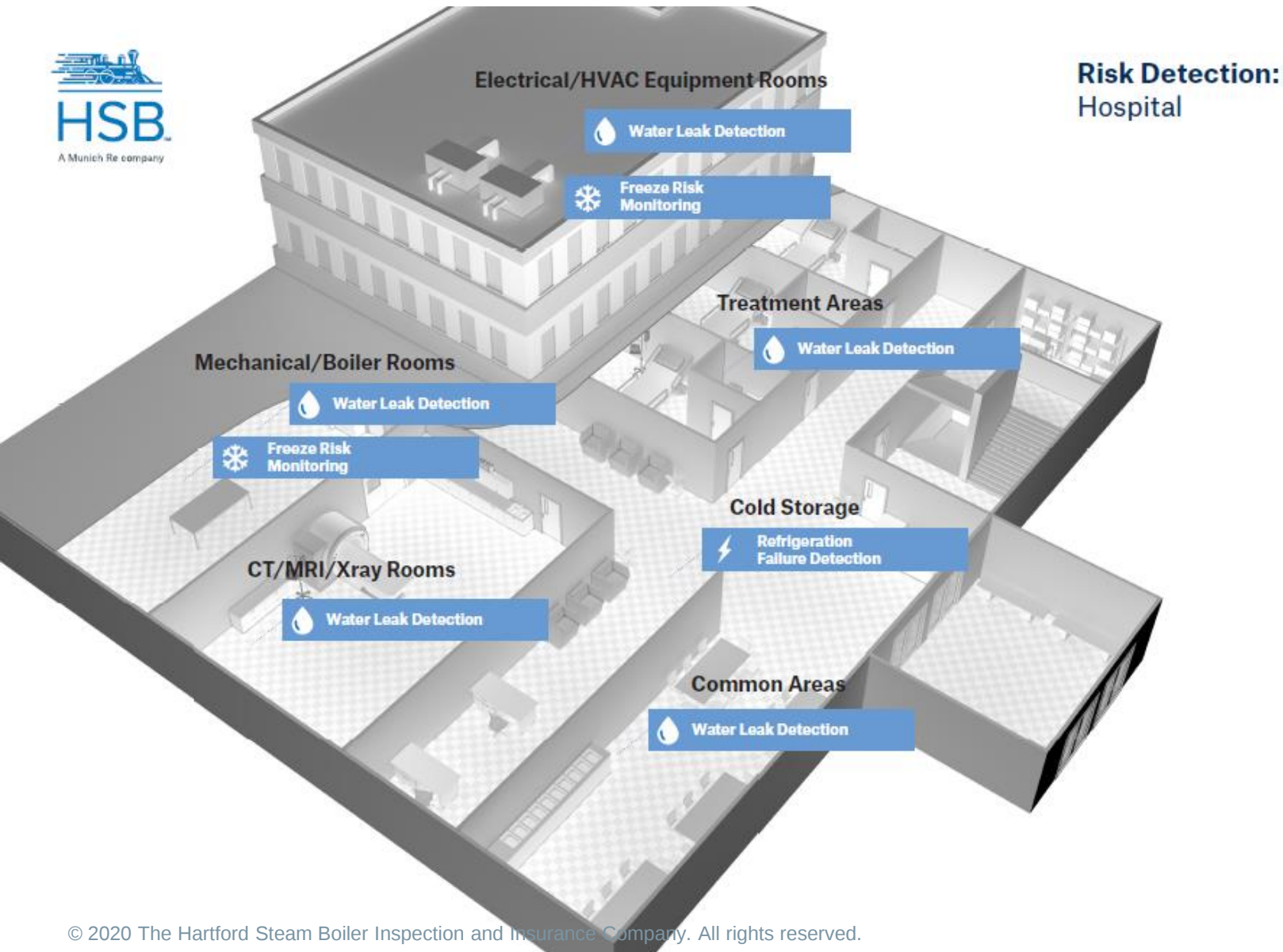
System in Action



Key Perils



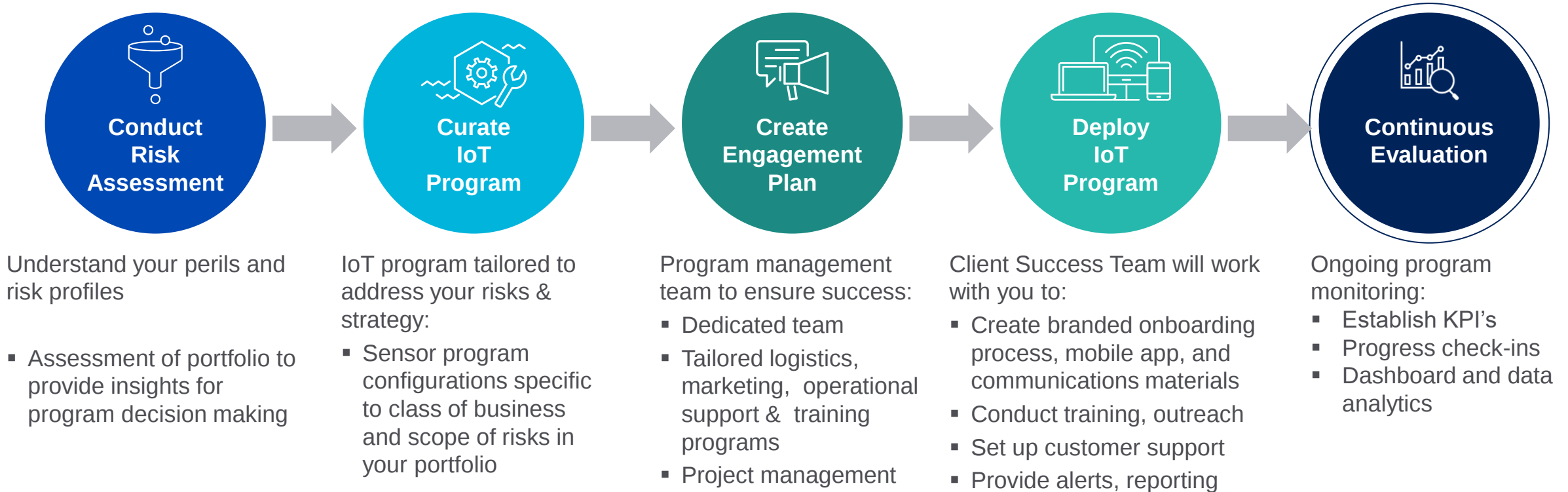
Areas of Concern and Risk Detection within Hospitals



Technology applications available to monitor

- Water Detection
- Frozen Pipe Detection
- Freeze Detection – Heating System Failure
- Refrigeration Failure Detection
- High Temperatures
- Power Outage
- Energy Efficiency
- Mold Condition Alert

How Effective Programs Work:



Effective IoT Programs are Comprehensive

During a recent freeze event, our IoT program with a partner carrier prevented a significant water damage loss for a museum



Account: Fort Worth Museum of Science and History

Technology: LoRa Gateway Sensors

Culprit: Water coil in a rooftop HVAC unit

Loss Avoided: Water damage

Save: Conservatively \$500,000



Loss Event

- A water coil had burst in a rooftop HVAC unit, sending water into an office down below. This was over the holiday, and had the sensor not been there, significant water damage would have traveled through the museum causing damage throughout the building



Action

- After receiving the alerts (email, text and phone calls), customer went to the facility to inspect. They found the burst water coil and took action to stop the water



Impact

- Water could run for two full days over Christmas eve and Christmas. Extensive damage would have occurred to exhibits and building materials
- Business interruption loss would have occurred from having to shut down the museum for remediation

Sprinkler room leak detection in 2-year-old hotel helps keep business going



A leading carrier partnered with HSB to leverage the power of technology to help detect equipment failures and water/freeze risks for tech manufacturing facilities

Occupancy Type: Hotel

Potential Loss Description: Sprinkler room leak detection avoids flood

Date: 02/08/2024

Save Estimate: \$250k+



Loss Event

- Fire sprinkler room leak detected by Meshify leak sensor and helped avoid flood



Action

- Hotel maintenance staff was able to bypass fire sprinkler lines to shut water off and allow for cleanup. Valve flange gasket was also replaced to help provide avoidance of future leaks



Impact

- The Meshify Defender Leak sensor helped provide avoidance of a larger flood and business interruption to a 2-year-old hotel. Maintenance staff was also alerted to the need to do regular checks of sprinkler room equipment in addition to leak detection.

Window left open in boiler room alerted to by Meshify platform to help keep social services going



Occupancy Type: Social Services
Potential Loss Description: Exit door stuck open to stairwell and risked frozen sprinkler riser
Date: 02/19/2024
Save Estimate: \$250k



Loss Event

- The volunteer staff found a basement window open in the an uninsulated mechanical/boiler room after a long weekend after being alerted to low temperatures.



Action

- The staff responded to the alert and discovered the window open, closed it and introduced auxiliary heat to the space.



Impact

- The air temp sensors in the basement helped prevent a pipe freeze and causing damage to the mechanical space and disruption in social services to the community.

Historic room at country club saved by Meshify leak sensor detecting overflow from HVAC system



Client company partnered with HSB to leverage the power of technology to help detect leaks easily and alert policyholders before the damage can become catastrophic.

Occupancy: Country Club

Potential Loss Description : Water leakage

Date: 8/27/2024

Save Estimate: \$210,000



Loss Event



Action



Impact

- A water leak was detected at the HVAC condensation drain located in the 3rd floor mechanical room, which is above the historic Jefferson Room.
- The Jefferson Room was designed by its namesake, Thomas Jefferson, and is the country club’s most iconic room. It has historical architectural details and furnishings and often used for weddings and high-profile events.
- After receiving the alerts, facility staff immediately went to the mechanical room to check. They turned the HVAC unit off and unclogged the overflow drain, preventing water from causing damage to nearby areas and floors below,
- If it were not for the Meshify alerts, there could have been extensive damage to the ceiling, walls, furniture, and other valuable and irreplaceable contents. Also, the very popular venue space would have to be shut down for repair and resulted in business interruption for an extended duration.



The Jefferson Room

IoT Observatory Insights

Contacts

Matteo Carbone

Founder and Director of the IoT Insurance Observatory
Keynote speaker and writer on insurance innovation
Global InsurTech Influencer (Top 2 InsurTech Influencer by InsurtechNews, Top 10 InsurTech Influencer and top 4 insurtech influencers in the fintech community by Onalytica)

www.IoTinsObs.com



Matteo.carbone@iotinsobs.com
+39 (334) 622-0378
+1 (929) 309-6026



13



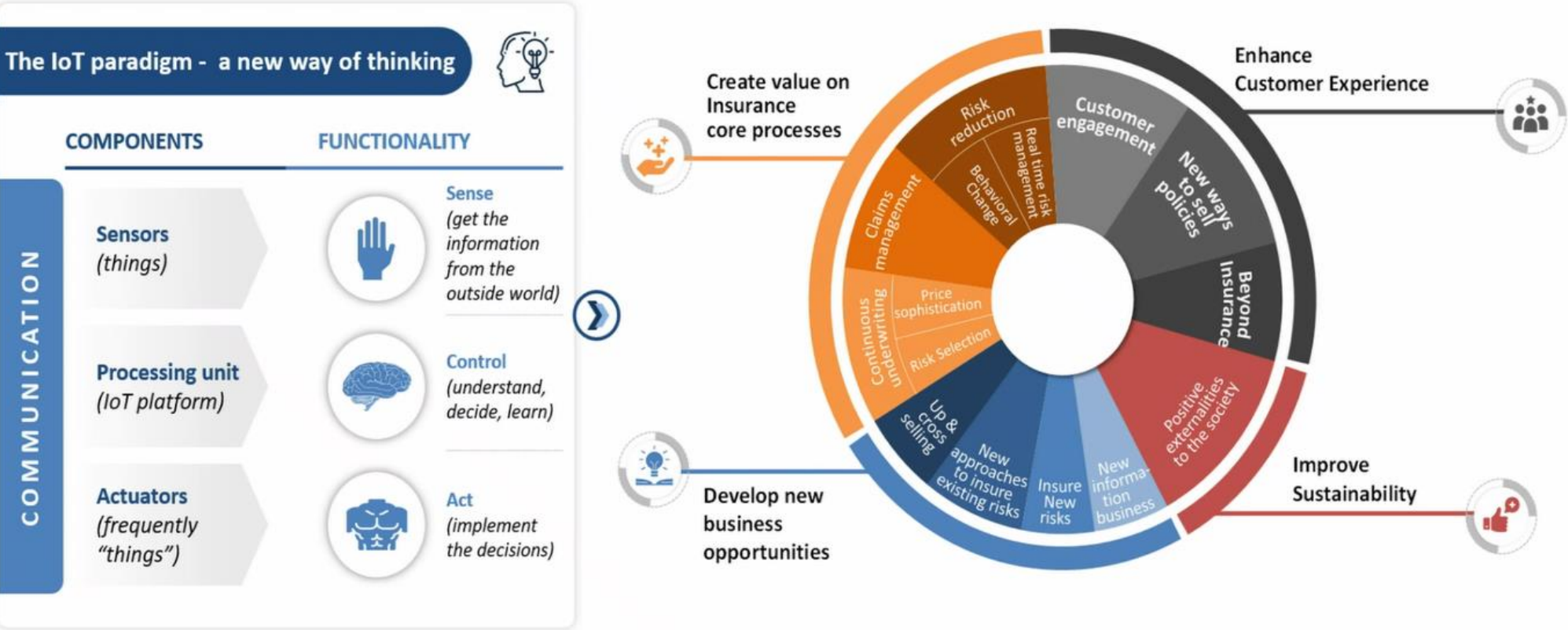
WHO WE ARE CONTENTS MEMBERS PUBLICATIONS NEWS CONTACT US



2024 Observatory Members

Admiral	FM Global	Nationwide	Swiss Re
ALD Automotive	Generali	Neosurance	Talanx
Allstate	Genertel	Nexar	Targa Telematics
Arity	Great American	Philadelphia Insurance Company	The Hanover Insurance Company
Azuga	Hannover Re	Pier	The Hartford
Azul Seguros	HCS Capital	Porto Seguro	Ting
Blue Assistance	HDI	Poste Assicura	Tokio Marine
Bridgestone	HiRoad	Poste Italiane	Travelers
Cambridge Mobile Telematics	HSB A Munich Re Company	Pure Insurance	UnipolSai
Caresyntax	Insurance Australia Group	Quanata	UnipolTech
Cincinnati Insurance Companies	Italiana Assicurazioni	Reale Mutua	USAA
CosmosDirekt	Jeniot	Relyens	Value Momentum
Discovery Insure	Jooycar	Scor	Viasat
Encotrack	Linear	Sfara	Vitality
Europ Assistance	MA&AD Insurance Group	Societe Generale	Warta
Firemark	National General Insurance	State Farm	Wawanesa Insurance

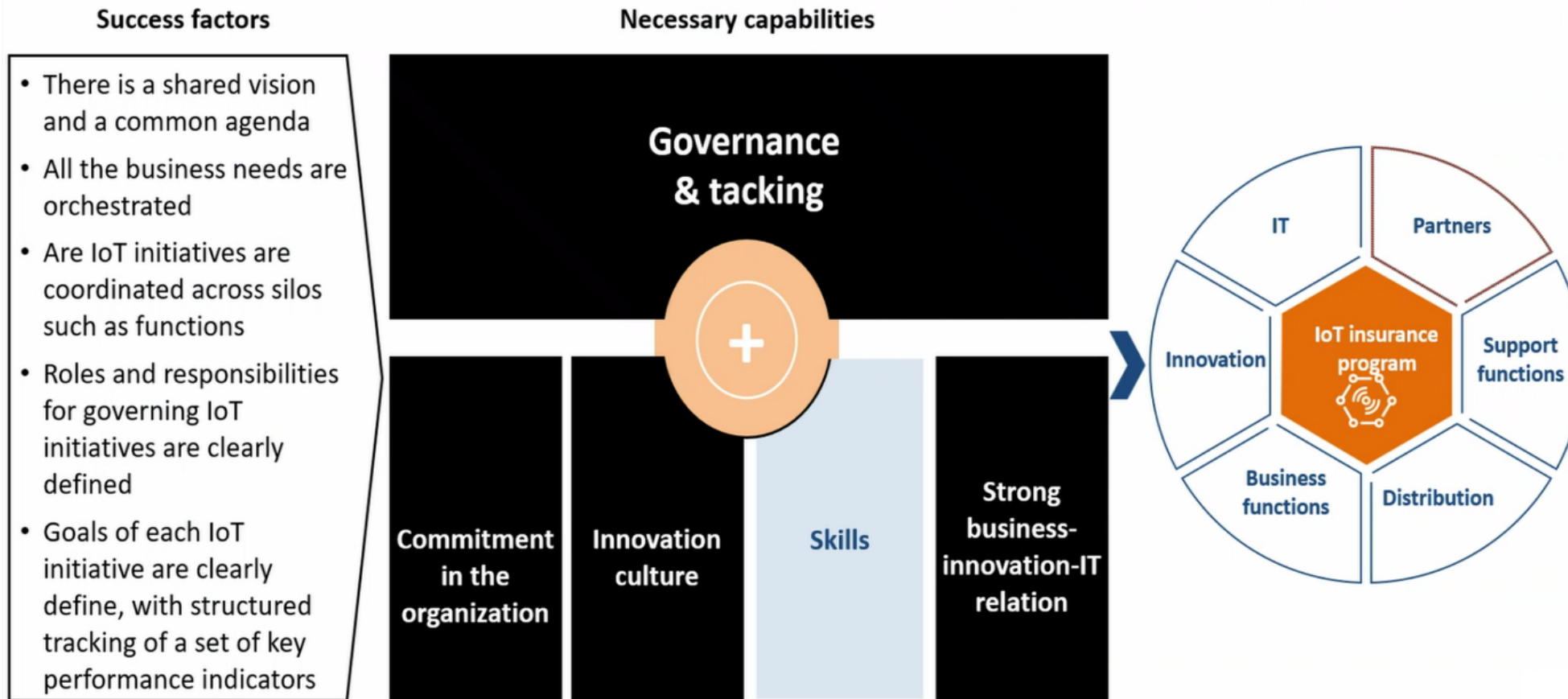
The IoT paradigm (sense, understand, and act in near real-time) is a **game changer** for many activities in the insurance value chain



IoT adoption should not be seen as a product or an IT project, it is a business transformation enabled by IoT data
 Programs have typically started with a focus on one single use case

Advice from IoT Observatory

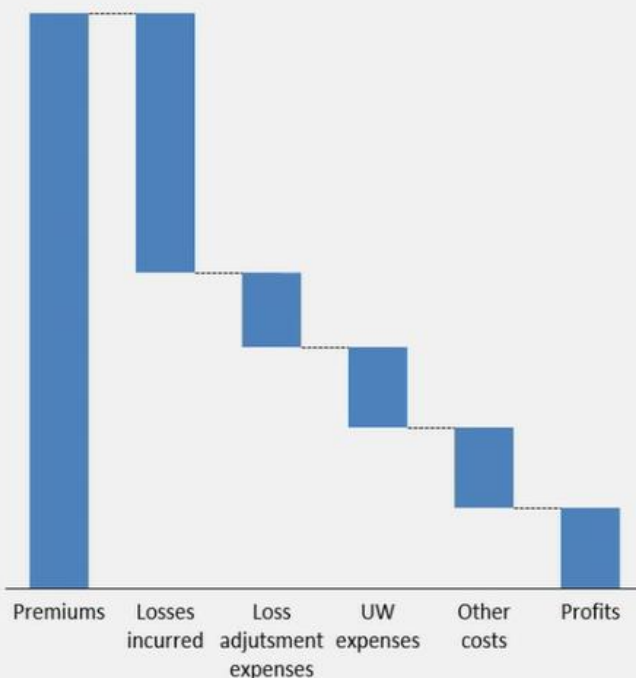
The IoT insurance journey requires: overcoming functional silos, coordinating the different stakeholders, and developing a collective intelligence to drive the IoT-based transformation of business processes



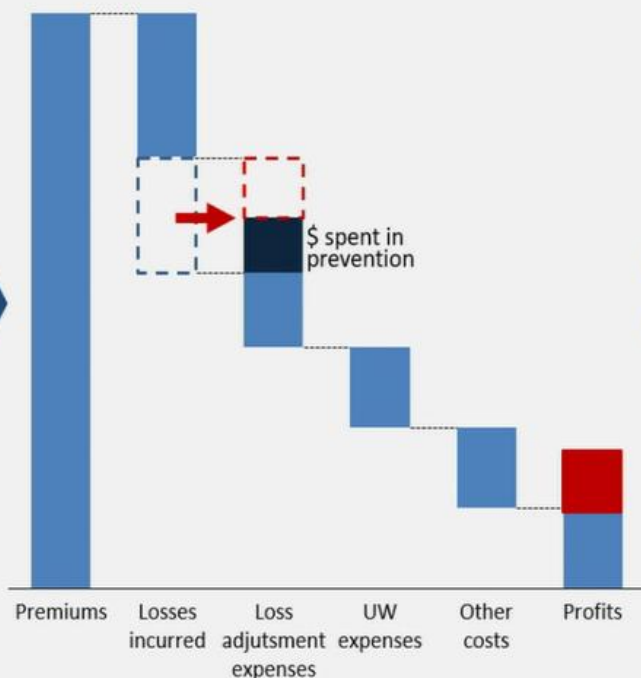
Different US carriers have already achieved unbelievable ROI by implementing their water escape mitigation programs

PROPERTY
INSURANCE
REAL CASES

Analogic insurance economics



IoT-based insurance economics



For each dollar spent in prevention, expected losses have been reduced by:

\$6+

(average results on a differentiated set of commercial property programs including apartments & condos, schools, office buildings, and houses of worship)

\$4+

(results on an Insurer's program thousands of ecclesiastical buildings)

\$3

(results on an Insurer's program thousands of properties such as schools and medical offices)

\$25

(results on an Insurer's five-year program on selected risks in the construction portfolio)

A fundamental step to scale these program is to move the ownership to the business lines



Source: IoT Insurance Observatory

How our IoT partners view the value of IoT

Estimated Loss Saves



Client Retention



New Revenue



Value of Data



Loss Ratio Lift



- Loss saves are calculated /estimated based on historical claims
- HSB's ROIs are currently calculated based on loss saves alone



Cost of IoT

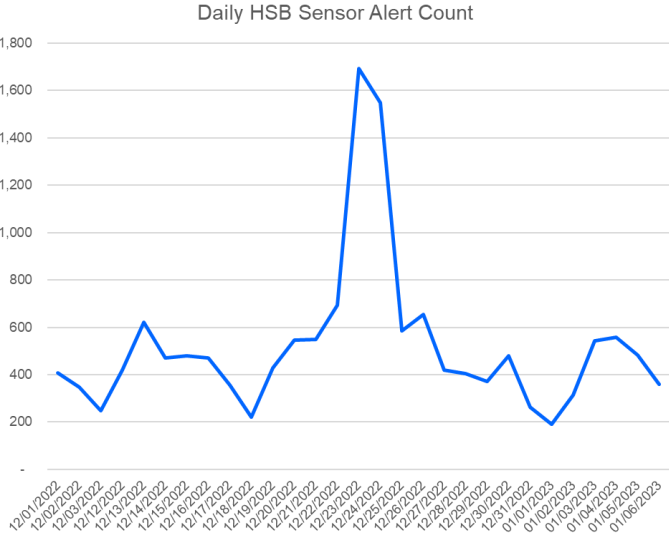
True ROI should capture the full value of IoT

Sensor Solutions by HSB®: Water and Freeze IoT

Delivered significant value to clients during the past events

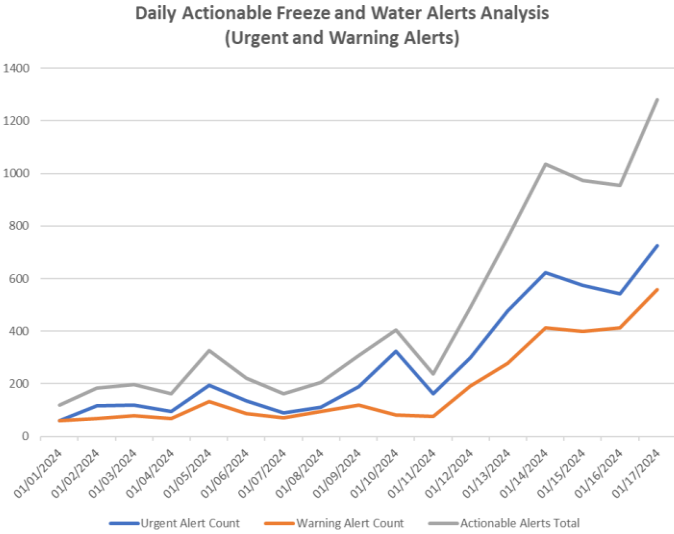


Winter Storm Elliott Dec 2022



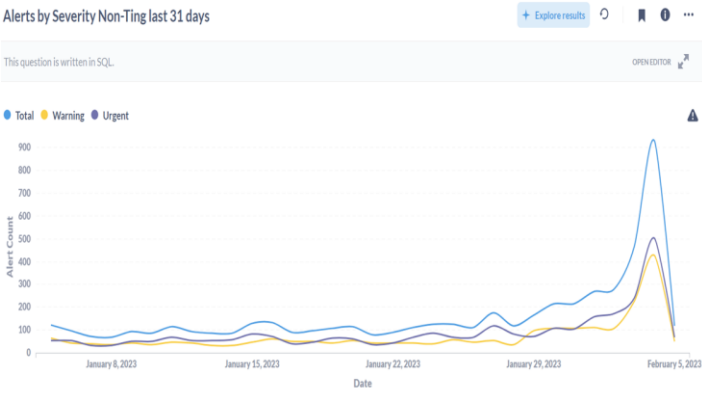
- During the storm, daily alert increased 500%+
- Alerts were mostly triggered by freeze and water events
- 240+ loss-averted events

Jan 2024 Arctic Blast



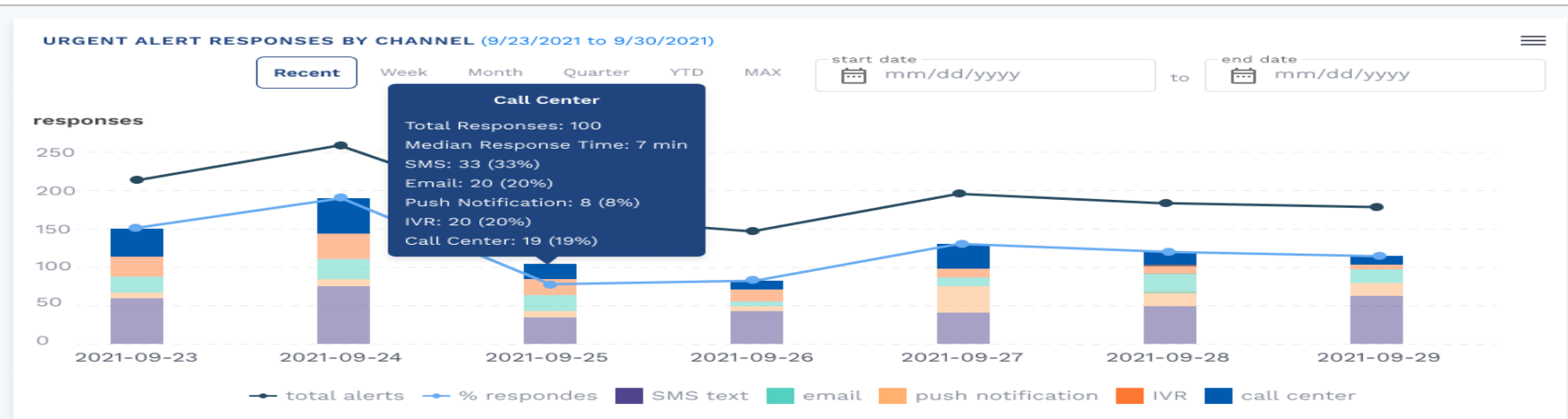
- During the 7-day period from January 10–16, average daily urgent and warning freeze & water alert activities increased 400% compared to normal average daily alerts
- 250+ loss-averted events

Feb 2024 Arctic Blast

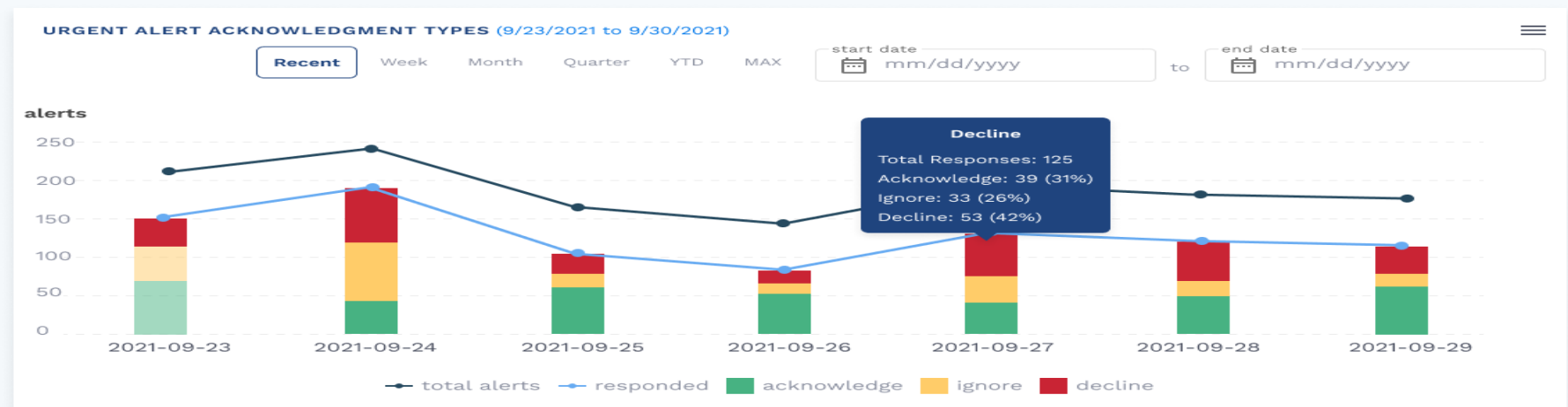


- On Feb 4, total alerts increased by 700% compared to average daily alerts in Jan
- 95%+ were freeze alerts
- 80+ loss-averted events

Insights Dashboard: Alert Acknowledgement charting to track end insured responsiveness to alerts

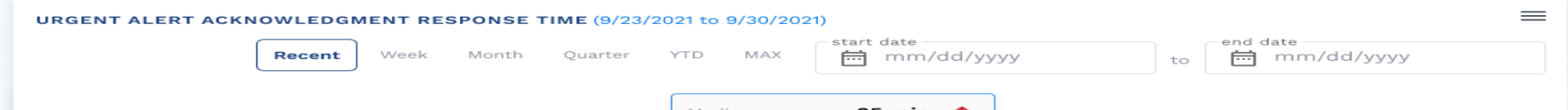


Track urgent alert acknowledgement response behavior through new graphs and table improvements



Diverse charts track urgent alert responses by

- Channel (i.e. SMS, email push, IVR)
- Type (acknowledge, ignore, decline)
- Median time to response (minutes)



Return on Investment:

639%

**Scale Clients'
Average RoI**

Depending on occupancy,
ROI range = 300% to 1300%

$$\text{ROI} = \frac{(\text{Client Confirmed Loss Averted} - \text{Earned Program Fee})}{\text{Earned Program Fee}} \times 100$$

- Calculation leverages client-confirmed "saves" as the sole driver of return
- Additional benefits from new business or retention are not included
- Impact of LAE and BI are also not included in calculation

Middle Market Commercial – Case Study

LoRa Program – Profitable ROI

Program Review

Target Occupancies: Schools, Municipalities & Commercial Real Estate
Devices In Force: 25,000+
Sensored Locations: 3,400+
Program In Service: 30 months
Unit Cost: \$6/sensor/month & \$28/gateway/month
Program Cost: \$1M

Loss Averted Events: 188
Average Save: \$88,829
Average Save per Device: \$668
Confirmed Saves During Program: \$16.7M

\$15.7M net gain above total spend of \$1m

Estimated Loss Saves



\$16.7M

Cost of IoT



\$1M

ROI

1,570%

Additional Benefits

BI and LAE Savings
New Business & Retention
Data Application

Small Commercial – Case Study

Cellular Leak & Freeze Program – Profitable ROI

Program Review

Target Occupancies: Non-profit, human services, & habitation

Devices In Force: 40,000+

Sensored Locations: 14,000+

Program In Service: 4 years

Unit Cost: \$6/sensor/month

Program Cost: \$5M

Loss Averted Events: 800

Average Save: \$40,000

Average Save per Device: \$800

Confirmed Saves During Program: \$32M

\$27M net gain above total spend of \$5m

Estimated Loss Saves



\$32M

Cost of IoT



\$5M

ROI
540%

Additional Benefits

BI and LAE Savings
New Business & Retention
Data Application

Case Study: Anonymous Carrier & Ting



Feasibility

Desirability

Viability

2019

Activities:

- Survey participants
- Document regulatory considerations
- Identify connection point to leak program
- Quantify the metrics

2021

Intent: Carrier agreed to “test and learn” program in select states
Launched 8/2022
Identify go-2-market approach, customer behavior, saves/ROI

2023

Intent: Analyze program and market data
Decision: Adding additional 50k sensors

250 Pilot

Intent: 250 device pilot run by small innovation team. Tings were offered to employees, agents, standard insureds, and insureds
Inflection Point: Will people enroll? Can Tings be distributed through loss control inspections? Can data be collected to prove efficacy?

Pilot Evaluation

2020

Activities:

- Numerous Ting presos with team and leadership to share efficacy data, ROI, inform to scale
- Agreed to further “test and learn” approach with shared program funding

12,800 Commitment

2022

39k Commitment

Intent: Carrier agreed to expand program to reduce 3-year learning period to 1 year.
Launched 9/2023
Expand to more states.
Inflection Point: Saves, customer retention, goodwill, brand loyalty, halo benefits

Analysis

2024

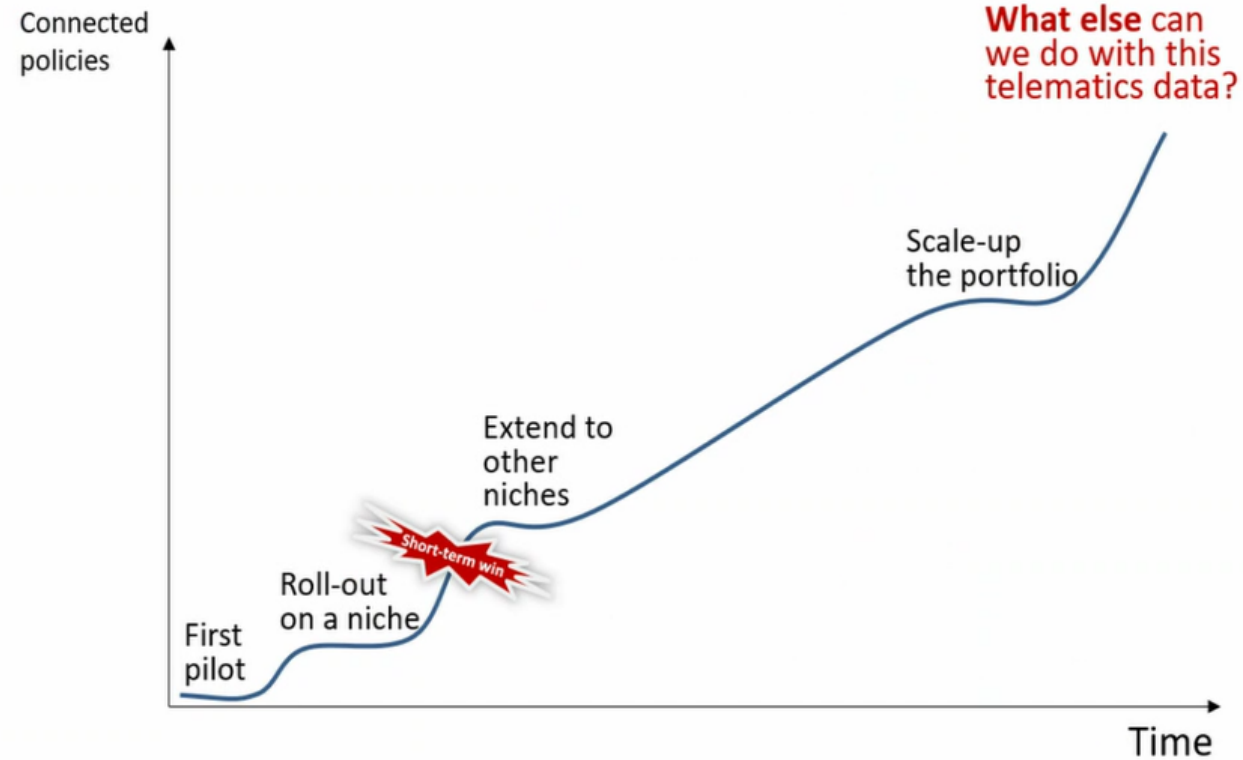
Think big, create short-term wins, scale, **continue to innovate**

ADDRESS THE COMMON PITFALLS

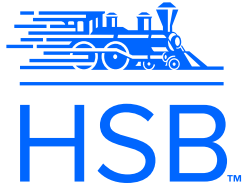
- 1 Define an ambitious **vision and strategy**
- 2 Obtain **C-level commitment**
- 3 **Engage** all the different business functions and collect their business needs
- 4 Orchestrate a **cross-function** project team
- 5 Build a structured **governance** to steer the execution
- 6 Collaborate with **partners** that fit with your vision and designed journey
- 7 Define the **roadmap** of your telematics journey
- 8 **Focus on the client**, and start on a niche where the approach (value created and value shared) has the highest success probability in order to **building momentum within the organization**
- 9 Define a structured **set of KPIs**, track, monitor and communicate them
- 10 Be prepared for:
 - managing **progressive finetuning** and **changes**
 - dealing with **financial, regulatory, and organizational barriers** to scale successful initiatives
 - **continuous innovation**

INSURANCE IOT ROADMAP

ILLUSTRATIVE



Source: IoT Insurance Observatory



A Munich Re company

Thank you

© 2024 The Hartford Steam Boiler Inspection and Insurance Company. All rights reserved. This presentation is intended for information purposes only and does not modify or invalidate any of the provisions, exclusions, terms or conditions of the policy and endorsements. For specific terms and conditions, please refer to the coverage form.