



# Bocconi Students Fintech Society

IoT Revolution in Insurance Industry

[www.bsfintechsociety.com](http://www.bsfintechsociety.com)

# Internet of Things (IoT) in Insurance

---



## What is it?

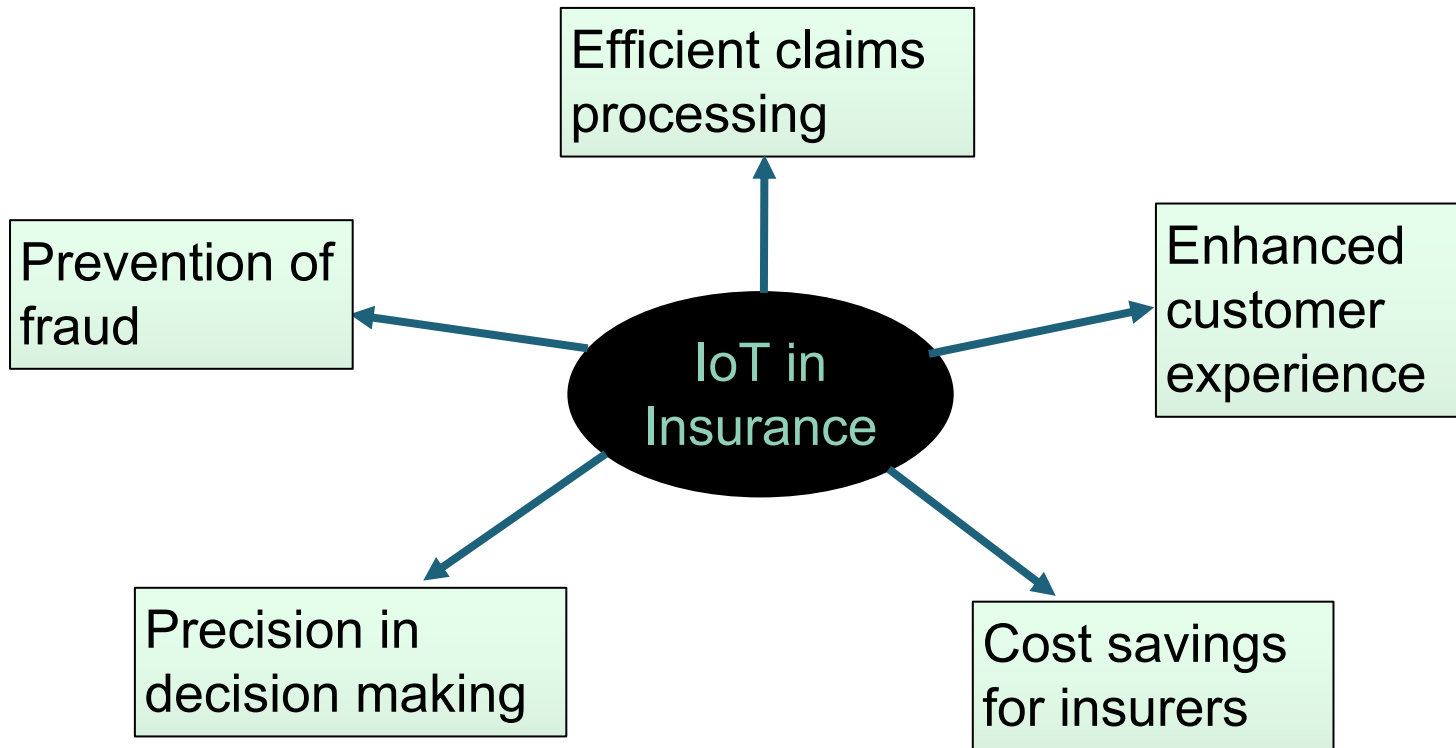
- IoT in insurance refers to the use of interconnected devices and sensors to gather real-time data that can be leveraged for risk assessment, claims processing, and personalized policy offerings.
- The basic principles involve embedding smart devices into the insured environment, such as vehicles, homes, or commercial properties, to continuously monitor and transmit relevant information.
- The data generated by these devices provides insurers with a wealth of information, enabling a more accurate understanding of risk factors and facilitating data-driven decision-making.

## Growth and Evolution of IoT in Insurance

The evolution of IoT in insurance can be traced back to the increasing prevalence of connected devices and the advancement of data analytics. As technology has become more sophisticated and affordable, insurers have embraced IoT to augment traditional risk assessment models.

The growth of IoT technology has been propelled by improvements in sensor capabilities, communication protocols, and the expansion of 5G networks, allowing for faster and more reliable data transmission. This evolution has not only enhanced the accuracy of risk evaluation but has also opened avenues for innovative insurance products and pricing models.

# Importance and Benefits

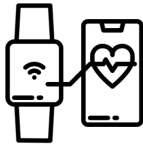


# IoT Applications in Insurance

---



The integration of IoT into the insurance industry has revolutionized traditional operations



IoT applications in insurance involve the utilization of **interconnected devices**, such as sensors, wearables, and connected devices, to gather **real-time data**, enabling insurers to make more accurate assessments, mitigate risks, and personalize services for their clients.



# Successful Implementation



## Risk Assessment



In **property insurance**, sensors installed in homes or commercial buildings monitor environmental factors and detect potential risks.

In **auto insurance**, telematics devices track driving behavior, assessing individual risk profiles and driving habits.



## Preventive Measures



Lower premiums **incentivize** customers to take **proactive measures** against theft or damage by using IoT-enabled home security systems.

In **health insurance**, wearables like fitness trackers can monitor policyholders' health habits, incentivizing healthier lifestyles.



## Claims Processing



In the event of an accident, connected devices in vehicles immediately transmit data to insurers, expediting **claim settlements**.

Additionally, data from multiple IoT sources help detect anomalies, assisting in the identification of potentially **fraudulent claims**.



## Customer Engagement



By offering **personalized services** based on real-time data, insurers can tailor policies to individual needs, fostering stronger customer relationships and improving customer retention rates.

Sources: [Matellio](#), [Cigniti](#)

# Benefits: Efficiency in Risk Management



IoT devices offer insurers a **continuous flow of real-time data**, effectively addressing **structural issues** in the insurance market by minimizing information asymmetry and leading to **significant cost reductions**.



## Adverse Selection

If the insurer **fails to properly differentiate between different levels of customer risk**, more high-risk customers will be inclined to buy insurance, leading to an **increase in expected costs** and an increase in the premium paid by customers, losing a large share of the lower-risk customers.



The IoT's reliable data improves premium pricing during underwriting and **signals valuable risk insights** through customer device installation willingness.



## Moral Hazard

After the contract has been signed, the insured party is no longer bearing the full costs of her behaviour and **might act less carefully** before a loss (ex-ante), leading to **increased costs**. After a loss, they may seek more compensation than necessary (ex-post), often using intentional misrepresentation.



The continuous data flow allows for **real-time risk assessment** and dynamic premium updates, ensuring ongoing insurer profitability and mitigating moral hazard.



## Contract Enforcement

Enforcing contracts and **ensuring compliance is a challenge**, especially during the claims process, which increases the risk of fraud. This challenge, coupled with the costly nature of verification processes, **can impact an insurer's overall profitability**.



IoT **records real-time data**, reducing fraud risks in claims and reinforcing contract enforcement for cost efficiency and insurer profitability.

Sources: Strategy& (pwc), The impact of IoT on the home insurance industry (CBS Research Portal)

# Benefits: New Revenue Streams



IoT devices not only reduce costs through improved risk management but also have the potential to **generate new revenue streams**.



## New Services and Business Models

insurers gain insights to develop highly **tailored** and **differentiated products**, meeting individual customer needs. IoT data not only reveal additional products customers might need but also allow the creation of unique offerings by accurately assessing risk. This dual capability expands market share by addressing diverse needs and enables the development of specialized products, enhancing **competitiveness and revenue potential**.



## Cross-Selling

By introducing heightened and more regular **customer interactions**, insurers cultivate increased engagement and cross-selling opportunities. The utilization of IoT data grants insurers profound insights into customer preferences, refining cross-selling strategies for more **effective** and **targeted offerings**.



## Security vulnerabilities and data breaches

There is an increasing **danger of cyber risks** with the inflow of networked gadgets collecting and transferring sensitive information. These flaws expose insurers to possible **breaches**, jeopardising consumer data and undermining confidence.

Smart home devices used for insurance discounts may **expose personal information** if not adequately secured. To combat these risks, insurance firms must invest in comprehensive cybersecurity measures, update their systems on a regular basis, and adopt encryption techniques to prevent unauthorised access and data breaches.



## Regulatory hurdles and compliance issues

As the sector embraces IoT technology, it must traverse a complicated legal landscape to maintain compliance with data protection rules. Talking about Europe, compliance with data protection laws, like the General Data Protection Regulation (**GDPR**), is essential. Breach of such laws may lead to **hefty legal penalties**.

To effectively manage compliance problems, insurance businesses must remain ahead of new rules, change their practises accordingly, and create **clear communication channels with regulatory organisations**. Company can work with technology suppliers, industry experts, and regulatory agencies to verify that their Internet of Things deployment conforms to industry standards and meets data protection rules.





## Challenges maintaining data security and privacy

Insurers can employ strong security procedures to reduce security risks. It is critical to use **encryption, secure device authentication, and frequent software upgrades**. **Incorporating blockchain technology** can also improve data quality and transparency, resulting in safe data exchanges in the IoT ecosystem. Insurance businesses may strengthen their cybersecurity safeguards and establish a resilient IoT infrastructure by using these techniques.

Using protocols like **MQTT or CoAP** with suitable encryption guarantees that data exchanged between devices and servers stays private.



## Challenges to widespread adoption

**Costs of implementation, technology integration issues**, and the necessity for experienced people each offer unique challenges. Moreover, **insufficient awareness**, concerns about data security, and the high cost of implementation act as barriers to implement IOT in the Insurance industry on a wider scale. Insurance executives must weigh the benefits of risk reduction and **fewer claims against competitive pressures** and operational constraints.

Companies can launch a **small-scale pilot programmes** to put IoT technology to the test in real-world circumstances. Employees are then able to experience the advantages personally, and the organisation can receive vital input to resolve any problems or challenges early in the process of implementation.

# Opportunities for Innovation & Growth



Technology advancements could be a huge boost to elevating the industry's vision and mission. Insurers should transform their conservative mindsets and embrace emerging technology capabilities driving prediction, prevention, and assistance.



## INNOVATIVE CORE PROCESSES

To survive:

- Incumbents will have to adapt their operating models, products, and core processes to a new reality...
- Leaders will both need to let go of entrenched perceptions and business models, and to leave the current prospective of distribution, underwriting, claims and services...

... introducing a more efficient usage-based insurance system that enables to calculate and alter policyholders' rates based on real-time data enhancing customer-centricity.



## STRONG PARTNERSHIPS

AI and analytics capabilities are likely as critical as the underlying data sources supplying it.

IoT may not always come from within the organization itself, insurers may obtain these capabilities externally from third-party vendor, from startup InsurTechs to large technology firms. Such partnerships will provide both sides with access to the valuable sensor data that will lay the groundwork for new hybrid insurance models.



## !COMPLIANCE AND RISK PREVENTION!

AI adoption should include collaboration with the CRO and CCO to identify possible problems and establish guardrails to meet governance standards on how these technologies could be use.

AI implementations involves an update of enterprise risk management protocols as well as speeding up employee awareness and training programs to minimize potential threats.

# Emerging Ecosystems



## MOBILITY/CONNECTED CARS

Cars are increasingly outfitted with sensors that do not just monitor driving behavior, but also collect a serious amount of vehicle's data allowing high-risk customers to be better distinguished from low-risk ones.

As a consequence:

- Careful drivers may justifiably expect quite considerable reductions in their insurance premiums.
- Insurers won't be able to compensate for this decrease simply by increasing the rates for high-risk drivers, overall premiums may fall due to discounts offered for telematics use.



Insurers should **explore additional levers** in conjunction with reducing claims expenditure in order to more than compensate for decreasing premiums: more effectively combating fraud, increasing use of allied repair workshops, and offering assistance and service add-ons.



## SMART HOUSE

People with limited mobility are increasingly seeking innovative services to aid their day-to-day activities and enable them to pursue an independent lifestyle at home.

Prospective clients in this market area are probably going to see IoT and associated technologies favorably, as well as insurers serving as the main suppliers of this kind of novel service package.



Many insurers around the world (Allianz) have started **cooperation models**, selling integrated products via Google Nest or offering insurance discounts for people who equip their homes with smart-home devices.



## COMMERCIAL LINES

The development of commercial ecosystems focus on data and operational excellence allowing:

- **Cyberrisks to be insured:** the rise of new partnerships between insurers and IoT cybersecurity software and hardware providers.
- **Capital-to-risk matching:** the rise of electronic platforms to trade new forms of insurance-linked securities allowing insurers to transfer risk via the markets.



[Instagram.com/bocconistudentsfintechsociety](https://www.instagram.com/bocconistudentsfintechsociety)



[LinkedIn.com/company/bsfintechsociety](https://www.linkedin.com/company/bsfintechsociety)



[Bsfintechsociety.com](https://www.Bsfintechsociety.com)



[As.bsfintechsociety@unibocconi.it](mailto:As.bsfintechsociety@unibocconi.it)

[www.bsfintechsociety.com](https://www.bsfintechsociety.com)

Following presentation may have included forward-looking statements. These statements are not historical facts, but instead represent only our belief regarding future events, many of which, by their nature, are inherently uncertain and outside of our control. It is possible that the Firm's actual results and financial condition may differ, possibly materially, from the anticipated results and financial condition indicated in these forward-looking statements. These materials are based on information provided by the internet or otherwise reviewed by us. We have assumed that such estimates and forecasts have been reasonably prepared on bases reflecting the best currently available estimates and judgments. These materials are not intended to provide the sole basis for evaluating and should not be considered a recommendation with respect to any transaction or other matter. Prior to entering any transaction you should determine, without reliance on us, the economic risks and merits as well as the legal, tax and accounting characteristics and consequences of any such transaction. These materials do not constitute an offer or solicitation to sell or purchase any securities and are not a commitment by us to provide or arrange any financing for any transaction, or to purchase any security in connection therewith. We assume no obligation to update or otherwise revise these materials.