TADA
Beyond data.

The Internet of Things:

How automation, connectivity and Intelligence are transforming the insurance ecosystem

CONTENTS

INTRODUCTION

The Internet of Things (IoT) is taking our everyday lives and the modern business landscape by storm; so much so, that it is estimated that consumers, companies, and governments will install more than 40 billion IoT devices across the globe by the end of 2023.[1] The impact these devices will have on automation, connectivity and intelligence is unprecedented. And from a business perspective, the data they harvest holds even greater promise for companies looking to improve efficiency, pricing, product, service delivery, and the monumental promise of increased customer satisfaction and customization like we've never seen before.

But what exactly is IoT, how does it affect the insurance industry, and what role does data play in the IoT equation? Read on as we explore how IoT is shaping the future of insurance.

⚠ **DID YOU KNOW?**

The number of smart home devices in the US alone is estimated to surpass one billion by 2023. That equates to approximately $725 per household and total US spend of $90 billion on IoT solutions.[2]

WHAT IS IoT

If you Google the "Internet of Things" or "IoT" chances are you'll find a myriad of highly technical explanations that leave you even more confused than when you initially entered your search term. For the purpose of giving you an introduction to IoT, we're going to keep our explanation simple. The Internet of Things (or IoT) simply means taking "things" and connecting them to the internet. When something is connected to the internet, it can send information, receive information, or both. This ability to send and/ or receive information makes things "smart."
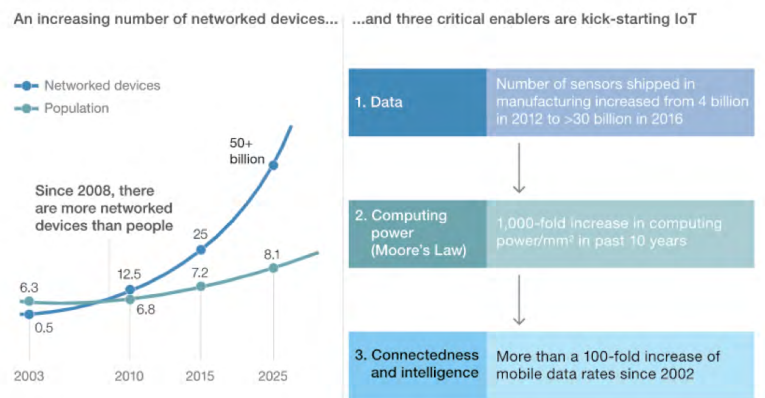
To be smart, a thing doesn't need to have massive storage capabilities or a supercomputer inside it. All a thing must do is connect to super storage or to a supercomputer.

Networked devices now outnumber people and are an important component of the IoT.

An increasing number of networked devices... ...and three critical enablers are kick-starting IoT

- Networked devices
- Population

Since 2008, there are more networked devices than people

50+ billion

6.3 · 0.5 · 12.5 · 6.8 · 7.2 · 25 · 8.1

2003 · 2010 · 2015 · 2025

1. Data — Number of sensors shipped in manufacturing increased from 4 billion in 2012 to >30 billion in 2016
2. Computing power (Moore's Law) — 1,000-fold increase in computing power/mm² in past 10 years
3. Connectedness and intelligence — More than a 100-fold increase of mobile data rates since 2002

Source: Markus Löffler, Christopher Mokwa, Björn Münstermann, and Anand Rao, "Partnerships, scale, and speed: The hallmarks of a successful IoT strategy," March 2017, McKinsey.com

With respect to IoT, the things connected to the internet can be put into three categories:

1. **Things that collect information and then send it.**

2. **Things that receive information and then act on it.**

3. **Things that do both.**

Each of these three categories deliver huge benefits that sustain one another.[3]

IoT IN INSURANCE

Current State

There is great potential for IoT in insurance – potential that insurers and agents/brokers have only recently began exploring with less of a bird's eye view. Only a short time ago, IoT in insurance was most notably used to support customer interaction and improve underwriting and claims processing. However new IoT technologies and strategies are quickly changing and have exposed much greater potential that would transform the digital insurance ecosystem, reducing costs and generating new streams of revenue along the way.[4]

Here's a glimpse at what some of these cost reductions and additional revenues could include:[4]

Cost Reductions	Additional Revenues
Apply analytics to reduce the occurrence of insurance fraud	New & more frequent customer interaction and cross-selling
Improved safety and active prevention (ex: immediate dispatch of ambulance following an automobile accident)	Create new service & business models by monetizing data insights
Greater efficiency in optimized resources via improved prevention mechanisms	Create new price models based on usage or demand

Types of Data for Insurance and Where IoT Comes into Play

Researchers have identified two new sources of data that are particularly relevant to the insurance industry:

1. Auto-Generated and Stored Data – Data that is directly linked to our online behavior. This includes data shared via social media channels, online shopping, and personal search and browsing activities.

2. Sensor Data – Data that streams from sensors built into consumer goods such as appliances, automobiles, tech wearables, and drones. This data tends to be more fragmented and specific to real-life functions and is commonly drawn from IoT-connected devices

More specific examples of sensor data related to IoT in insurance include telematics for auto, connected thermostats and smoke alarms in smart homes, tech wearables for life/health, smart doorbells for decreased burglary incidents, and a host of other sensors that are helping insurers reduce risk.

Real World IoT Examples in Insurance

IoT technologies enable insurance companies more accurately determine risk. For example, automobile insurers have traditionally relied on indicators, such as the age, address, and creditworthiness of a driver to determine premiums. But today, driver data (such as how fast a vehicle is driven and the frequency with which an automobile is driven at night) is available. Applications of such technology in countries where the market is already much more mature reveal that insurers can assess risk far more accurately than in the past.[4]

Below are some real-world examples of ways insurers and agents/brokers are using IoT to better assess risk and shape the future of the industry:

MILEWISE

Allstate's Milewise program is a pay-per-mile car insurance. Designed for people who spend less time on the road than the average driver, such as stay-at-home parents, retirees, and telecommuters, the pre-pay plan allows drivers to pay based on the number of miles they actually drive.[6]

BEAM DENTAL

Beam Dental employs IoT technology to offer reduced-rate dental insurance. Every customer receives a 'smart' toothbrush that tracks how well they take care of their teeth and provides personalized insurance plans based on this teeth-brushing data. They even let customers know when their brushing isn't meeting standards! In doing so, Beam strives to offer insurance rates up to 25% cheaper than competitors.[7]

ERIE INSURANCE

The use of drones for commercial purposes has become increasingly common. The insurance industry is no exception. Pennsylvania-based Erie Insurance uses drones for property inspections in the event of a damage claim. The company says benefits of drone usage include accelerating the claim process assessing damage without endangering employees and getting a better pulse on potentially fraudulent claims.[8]

LIBERTY MUTUAL

Liberty Mutual partnered with Google's Nest to send its customers free connected smoke alarms. The connected alarms enable customers to reduce the risk of a fire, and in turn, reduce their home insurance premiums by as much as 5%.[8]

CM SENSOR

Church Mutual's CM Sensor helps commercial customers prevent damage and service disruption from water-related incidents, including frozen pipes. The CM Sensor 24/7 temperature and water alert system notifies customers via text, email or mobile app when water or cold temperatures are detected. The result? Prevention of time lost to potential cleanup, administrative headaches and rescheduling related to commercial property damage.

DIGITAL ECOSYSTEMS FOR INSURERS

Having the Greatest Impact

Now that you have some context for exactly how IoT is being used in insurance, that leads us to the question of how insurers can establish IoT-based ecosystems that will have the greatest impact.

There are four main emerging digital ecosystems that are considered most critical for insurance carriers moving forward:
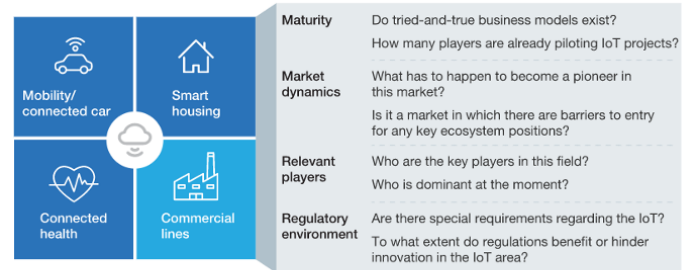
1. Mobility/connected car

2. Smart housing

3. Connected health

4. Commercial lines

While these ecosystems certainly have commonalities, there are key differences –such as market dynamics, regulations, and impacted parties– that dictate the need to develop dedicated and data driven IoT strategies for each.[4]

Four digital ecosystems are particularly attractive and relevant to insurers.

Questions to reveal key differences between IoT ecosystems

■ Private lines

Maturity	Do tried-and-true business models exist?
	How many players are already piloting IoT projects?
Market dynamics	What has to happen to become a pioneer in this market?
	Is it a market in which there are barriers to entry for any key ecosystem positions?
Relevant players	Who are the key players in this field?
	Who is dominant at the moment?
Regulatory environment	Are there special requirements regarding the IoT?
	To what extent do regulations benefit or hinder innovation in the IoT area?

McKinsey&Company

Comprehensive, data-focused approaches to these four digital ecosystems can help insurance carriers innovate, improve competitive advantage, and establish long-term perspective for their IoT business case.

THE FUTURE OF IoT IN INSURANCE

A mere 15% of customers say they are satisfied with their insurer's digital experience.[10] For insurers and agents/brokers alike, such a low level of satisfaction is a cry for much needed transformation – transformation that many see coming to fruition with the Internet of Things. In fact, IOT-connected devices have made it possible for some insurance carriers to lower their premiums by as much as 25%.

But while the insurance industry is discovering a whole new world of possibilities for technology in insurance, there are still challenges to overcome in such a highly regulated environment. As insurers and agents/brokers strategize on how to continue to improve the customer experience and become more relevant in a world that is undeniably driven by data and technology, they must also address challenges related to regulation, data management, disruption to existing insurance business models, and more.[11]

Perhaps keeping the focus on the consumer and consumer expectations is the key to successfully transforming the industry. As Sudhama Gopalan, Senior Vice President and head of InsurTech at data analytics company Tada notes,

"Customer experience expectations in all industries including insurance have been set by highly successful models in tech such as Amazon, Apple, Uber, and others. Where insurance is specifically concerned, new generations of consumers use automobiles, homes, personal health and other "insured assets" quite differently than they did in the not so distant past. This shift is re-shaping consumer expectations and demands that will pave the way for the future of insurance."[12]

Which areas of insurance will benefit the most from IoT technologies?

Here's what respondents in a recent Reuters Events survey replied:[13]

81% - Analytics

68% - Customer-Centricity

64% - Pricing

61% - Digital

60% - Claims

59% - Underwriting

Life Insurance: A Vision for Digital Transformation

|	Today	Tomorrow
Customer Experience	• Few flavors of product "pushed" • Medical check with blood drawn, questions ad infinitum • Fine print exclusions to protect the insurer • Coverage in up to 3 months	• Customized product • Health history and wearable IoT wellness data with customer consent • Bold print inclusions to cover the consumer • Coverage inside 3 hours
Inside the Insurance "Factory"	• Focus on rear-view mirror snapshot of customer health data • Glacial pace of change and innovation • Functional silos: Product | Risk | Analytics | Compliance	• Retrospective + streaming customer health+wellness data: blockchain-secured, customer-controlled • Enabling technology backbone to innovate at speed • Integrated org

GO BEYOND DATA

Meet Tada Cognitive Solutions

While new entrants seek to disrupt, carriers are uniquely positioned to delight their customers with fulfilling experiences. With Tada, you can innovate and engage your customers by combining data sources across your business systems including IoT and other external data to enhance risk-based pricing, customer acquisition effectiveness and operational productivity.

Using the Tada platform, insurance businesses can visualize their entire business end-to-end – thanks in great part to a proprietary and patented Digital Duplicate® that uses the language of your business (the terms, metrics, and KPIs that matter to you) to organize information. This holistic perspective provides the opportunity to make informed operational decisions from customer acquisition to post purchase customer support and insight (and all the data-driven details in between).

As a decision maker, you can navigate your entire business ecosystem 10 times faster than the traditional approach of using consulting resources and Business Intelligence tools, by utilizing Tada's suite of highly customizable, purpose-built applications. Learn more about how we can help you tap into the power of data analytics and IoT in your day-to-day decision making here.
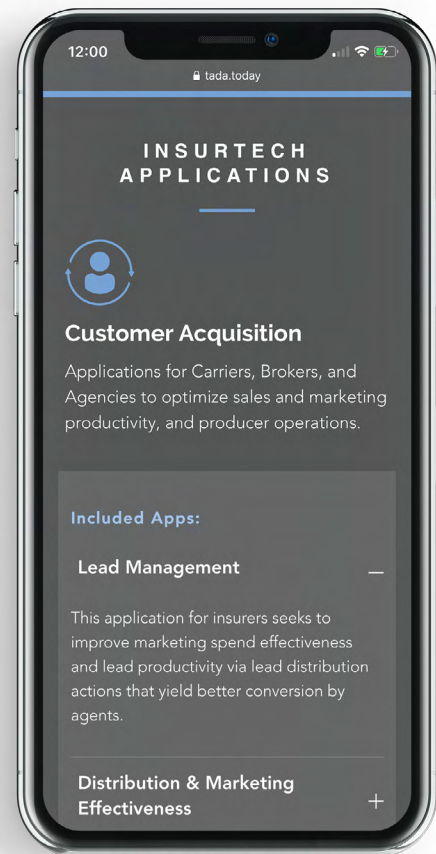
1 "The IoT Forecast Book." Business Insider Intelligence 2 "How the Internet of Things will transform consumerism, enterprises, and governments over the next five years." Business Insider 3 "What Is IoT? – A Simple Explanation of the Internet of Things." IoT For All 4 "Digital ecosystems for insurers: Opportunities through the Internet of Things." McKinsey & Company 5 Benno Keller, "Big Data and Insurance: Implications for Innovation, Competition and Privacy." The Geneva Association, March 2018. 6 "Milewise® From Allstate." Allstate.com 7 "Insurance technology trends that are shaping 2020." Board of Innovation 8 "10 real-life examples of IoT in insurance." Internet of Business 9 "Protect Your Organization with CM Sensor® Technology." Churchmutual.com 10 "Here's How IoT Will Impact the Insurance Claims Process." Forbes 11 "5 Challenges for IoT in the Insurance Industry." SAS 12 "Insurers Transform Customer Engagement with the Internet of Things." Insurance Nexus by Reuters Events 13 "Insurance Map #7: Internet of Things." Insurance Nexus by Reuters Events

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