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The Internet of Things and insurance
Discussion document

Peter Evans | 14 September 2016

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Key messages

- The IoT offers huge opportunties for insurers to develop new business models

- Four new opportunities stand out in our view

- In the short to medium term, these opportunties appear high-value but niche

- They require new approaches from incumbents, e.g. more collaboration with other sectors

- The winners are likely to be incumbents who change fastest and develop first-mover advantages in data and capabilities

Research methodology

We conducted three primary research projects, spanning 30+ markets

Students
To better understand young people's attitudes toward careers in general, and insurance careers in particular, Deloitte UK and Universum surveyed 211,000 business students in 30 markets in 2014/15

Subject matter experts
To better understand IoT applications in insurance, Deloitte US and Wikistrat interviewed 13 doctorate holders, 24 cyber and tech experts, 20 finance experts and 6 entrepreneurs from 20 countries in 2015

Customers
To better understand which new and emerging digital technologies could have high take up among insurance customers in the UK, Deloitte UK and YouGov surveyed 1,424 motor, 877 home and 654 health UK insurance customers in 2015

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What is the Internet of Things? Why does it matter?
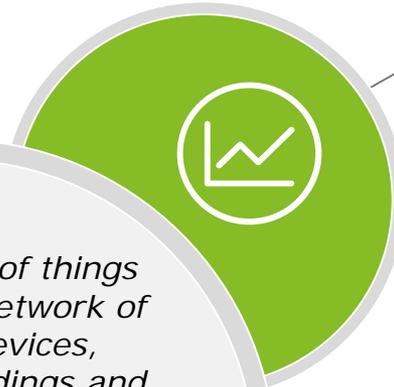## Increasing connectivity is reshaping the global economy

Data

For the first time, machines are now creating and/or capturing more data than people (2)
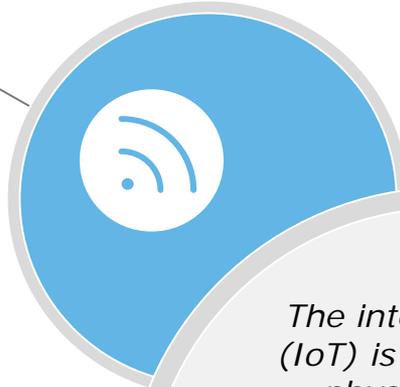
Adoption

Gartner predicts IoT to include nearly 26 billion devices by 2020 (3)

The internet of things (IoT) is the network of physical devices, vehicles, buildings and other items – embedded with electronics, software, sensors and network connectivity - that enables these objects to collect and exchange data (1)
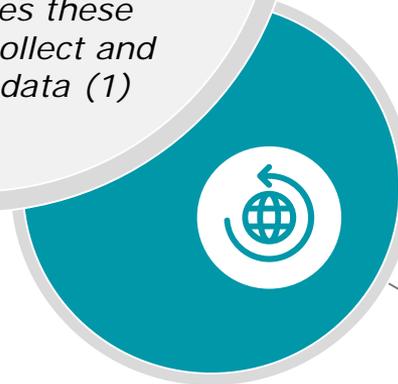
Impact

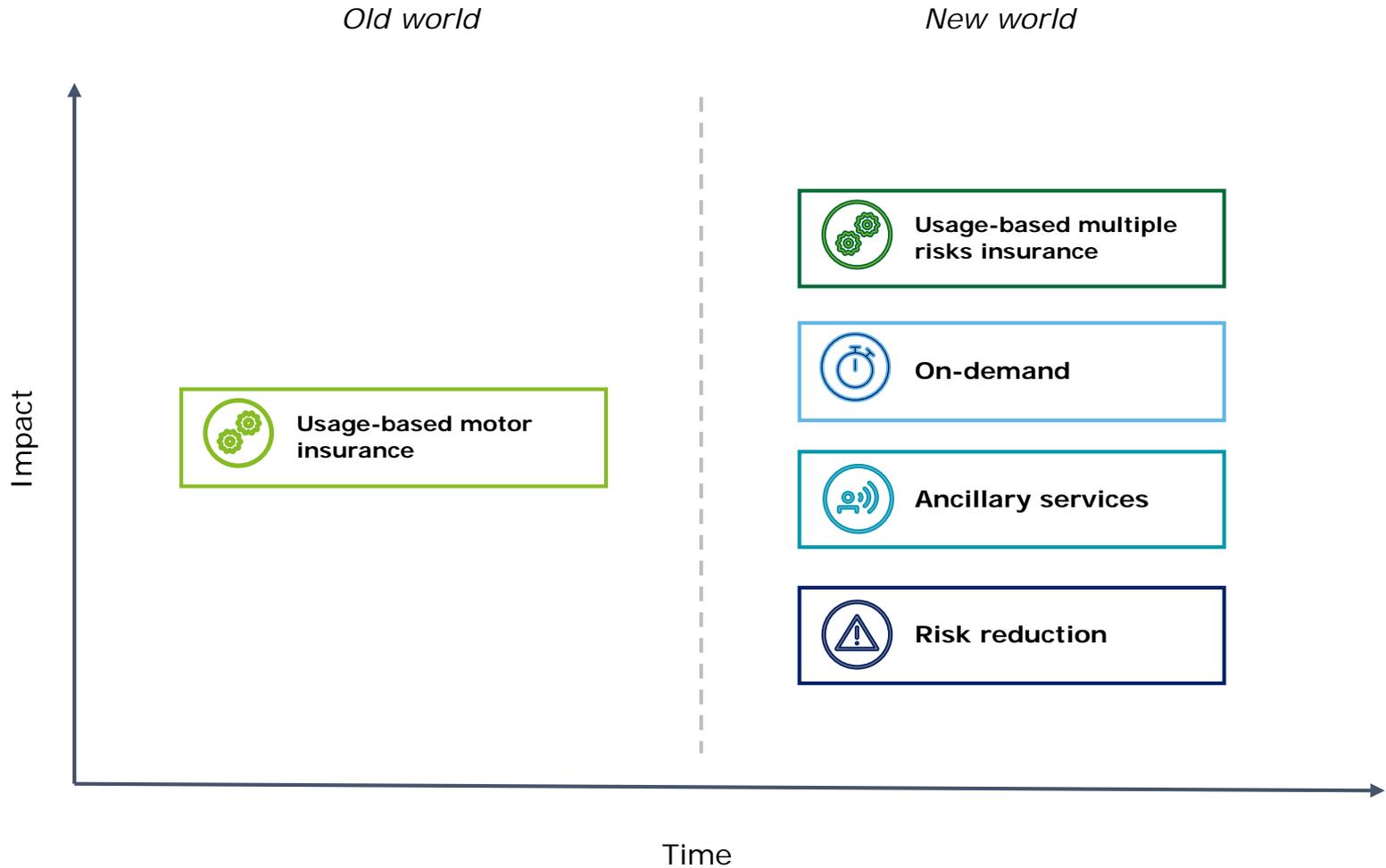Three-quarters of executives say their companies are exploring or adopting some form of IoT solution (2)

Value

Gartner predicts IoT to generate global economic value add of $1.9 trillion by 2020 (3)

Source: (1) Internet of Things Global Standards Initiative; (2) Deloitte US; (3) Gartner

Key insurance opportunities overview
IoT opens up major, new opportunities in insurance

Old world

New world

Impact

Usage-based motor insurance

Usage-based multiple risks insurance
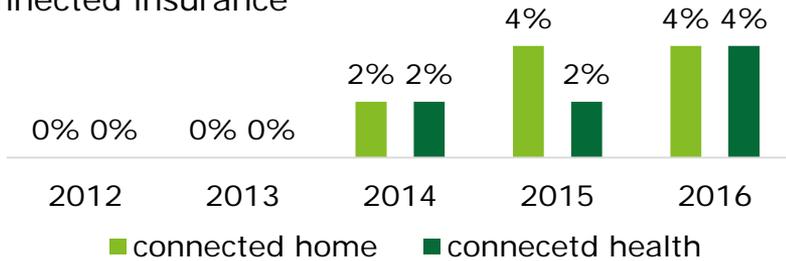
On-demand

Ancillary services

Risk reduction

Time

What is the potential for usage-based insurance to spread beyond motor?

Insurers are increasingly offering "connected" home and health insurance...

Proportion of top 50 European insurers offering connected insurance

	2012	2013	2014	2015	2016
connected home	0%	0%	2%	4%	4%
connectd health	0%	0%	2%	2%	4%

■ connected home ■ connecetd health

...is there a big opportunity to offer usage-based insurance beyond motor?

Up to **70%**

of losses due to water leaks could be reduced, or prevented, by using smart home technology

33%

of UK GI customers switch insurer for a cheaper premium each year

...typically these models offer discounts, not usage-based pricing, unlike in motor...

State Farm™

- State Farm partners with home security companies (ADT, Canary)
- Policyholders get a discount on home monitoring equipment, e.g. 10% off installation and monitoring fees
- Policyholders with smart security alarm systems get up to 10% off their home insurance premium
- Pricing is NOT usage-based, i.e. based on data from home monitoring equipment

Industry implications

- Large first movers most likely to win because large data volumes required for pricing accuracy
- Insurers who collaborate with other sectors likely to win because other sectors have lower costs to install, and more expertise in, smart technology
- Could shrink market by lowering premiums overall (and reducing fraud?)
- Could reduce cross-subsidization by lowering premiums from good risks

⏱ Could new on-demand insurance models help insurers reach large, under-served markets, such as in the sharing economy?

On-demand insurance is attracting funding...
Sample of insuretech funding, January 2016, $USm

Trov	13.5
Lemonade	13.0
Ladder	2.1
Embroker	2.1
Melody	2.0
Sure	1.6
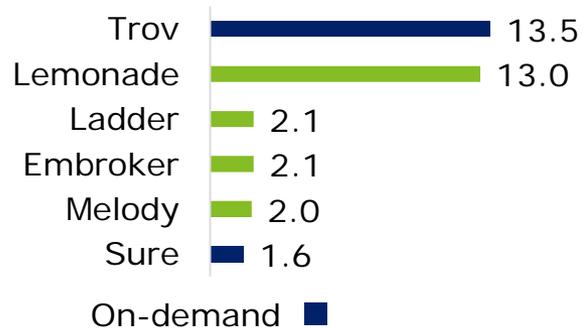
On-demand ■

...is this the way to reach large, under-served markets?

There are **40,000**

Airbnb listings in London alone. Many of the landlords of these properties may need on-demand landlord cover. There are gaps between traditional home insurance and the protection provided by Airbnb's guarantee scheme.

...with start-ups giving customers the ability to switch cover on at the point of need...

trōv

- Customers use Trov to add items they want insured to an online inventory and activate/deactivate cover via smartphone
- They can insure items against accidental damage, loss or theft
- They manage claims via smartphone
- Trov, which launched in Australia, is a broker not an insurer

Industry implications

- Digital, customer-facing capabilities would be key to success
- Unlike other IoT opportunities, e.g. usage-based pricing and risk reduction services, on-demand could grow the market
- Start-ups could be better placed than incumbents to offer on-demand because it requires new business models and approaches?
- Brokers could play a key role because much of the addressable market can be accessed via sharing economy platforms, i.e. intermediaries

Is there a way for insurers to monetise IoT data by providing valuable information and insights to customers?

## Insures have the opportunity to use IoT to offer customers insights...

Potential connected car services

Geo-fencing	Real-time claim notification
Location-based marketing	Traffic alerts
Green driving tips	Roadside assistance
Gamification and rewards	Road condition alerts

Source: Deloitte US

...but will this lead to new, advice-based revenue streams?

Proportion of UK home insurance customers who want a tech service that helps them work out which risks they face by age

- 25-34: 26%
- 35-44: 17%
- 45-54: 12%
- 55+: 13%
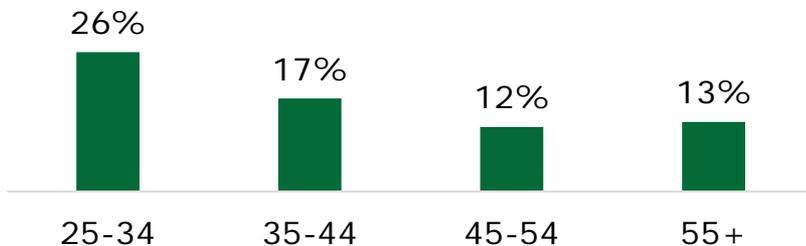
Source: YouGov; Deloitte

...and they are taking steps in this direction by providing free information services...

AVIVA

- Aviva Canada has launched a free mobile app (Plan & Protect) with the Institute of Catastrophic Loss Reduction

- Customers get location-based information to help guard against extreme weather, e.g. floods, wildfires

- The service provides personalised risk reports, alerts and notifications, as well as home/auto policy details

Source: Aviva

Industry implications

- Could bring new revenue streams uncorrelated with underwriting and investment returns

- Incumbents better placed than new entrants to act as adviser to customers due to their more trusted brands?

- Incumbents working with affinity providers best placed as they have access to special interest customer groups?

- Largest players best placed due to advantage in having more data to mine for insights

- Major regulatory risks and barriers around using customers' data?

⚠ The IoT offers huge potential for insurers to help customers reduce losses, but will this ever be a mainstream service?

## The IoT has huge potential to reduce losses...

Non-Deloitte estimates of risk reduction using smart devices

Cause of loss	Smart device	Risk reduction potential (%)
Water leak	Connected meters	20-30
	Leak sensors	70
Fire	Smoke detector	70
Theft	Alarm system	10-80

Source: BCG; Morgan Stanley

...is this destined to be a niche opportunity for insurers, unless customers' attitudes change?

Forecast proportion of US households with a smart home device

Year	Value
2015	5%
2016F	6%
2017F	7%
2018F	9%
2019F	12%
2020F	14%
2021F	16%
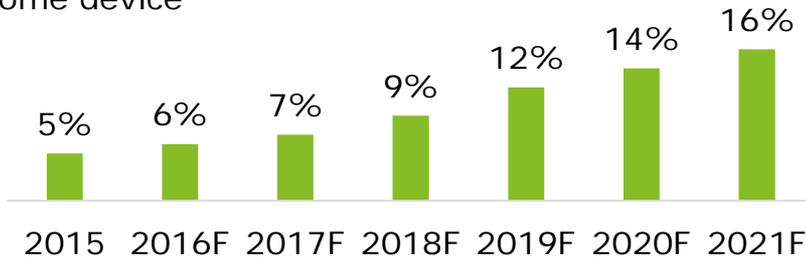
Source: Forrester

...with start-ups and incumbents giving customers the ability to reduce losses/claims...

neos

- Neos, a UK-based start-up, provides smart devices to customers, e.g. security camera, motion sensor, leak detector, smoke alarm, door/window detector
- Monitors home 24/7 and provides emergency assistance
- Reduces claims and associated costs of underlying insurance
- Neos is an appointed representative/broker not an insurer

Source: Neos

Industry implications

- In the long term, could shrink the market by lowering losses (frauds?) and premiums
- In the medium term, connected devices could introduce new risks, e.g. hacking, failures?
- In the long term, could make risk more homogenous by reducing many risks substantially
- Partnership with experts in assistance and smart technology from other sectors key
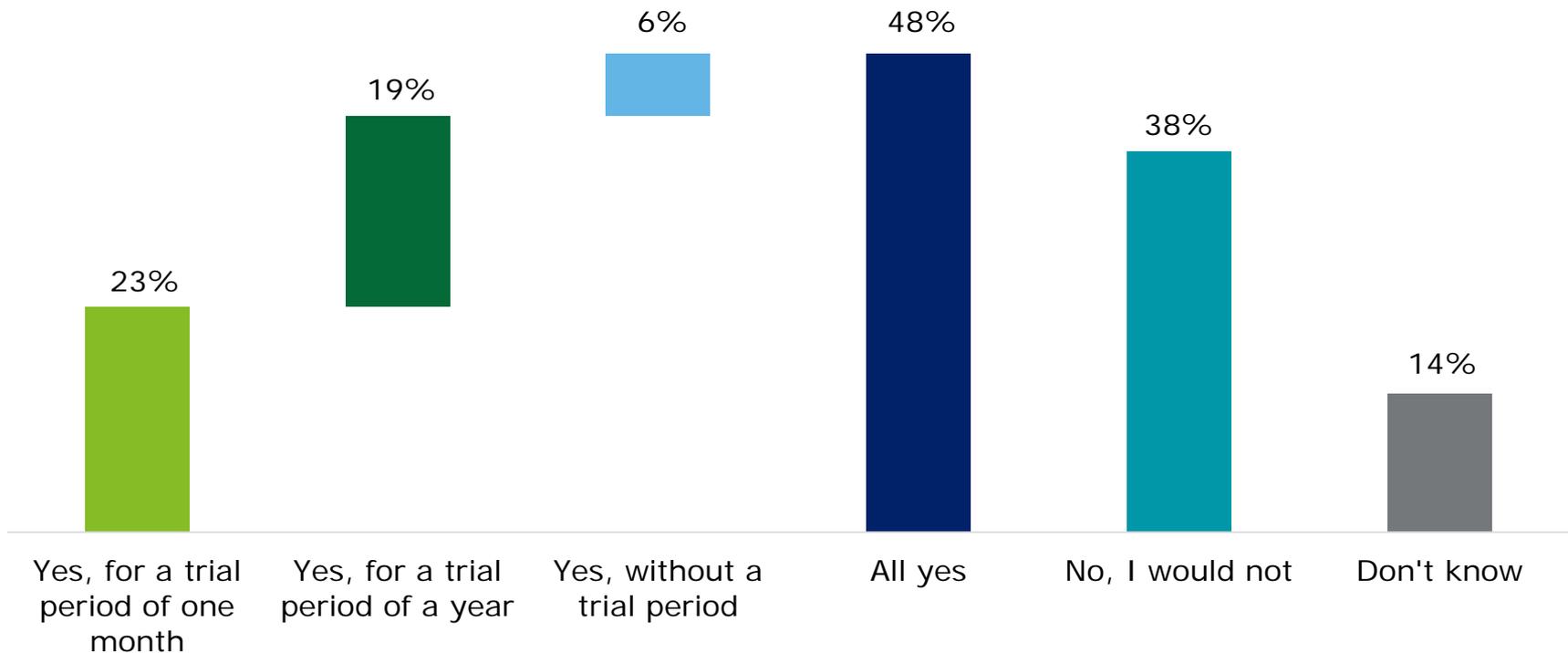
Eight key challenges impede insurers' adoption of IoT

Need to offer discounts to persuade customers to opt in

Industry's conservative approach to innovation

Capabilities needed to discern which data are predictive, not noise

More nimble data management and warehousing required

Challenges

Data scientists needed to mine, organize and analyse raw information

Cultural barriers to centralization of data

Consumers' concerns over data privacy

Heightened need for data oversight and controls
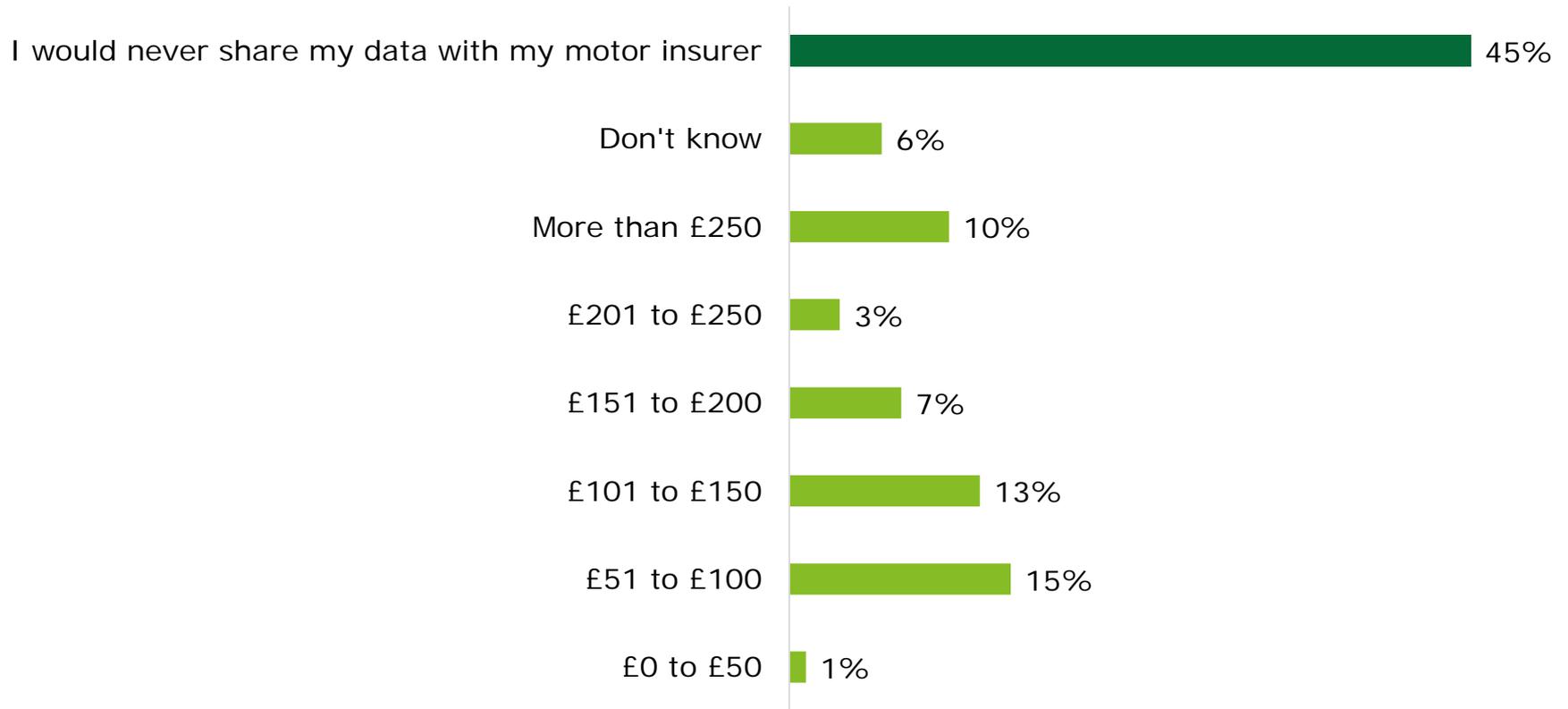
Explored in more detail on the following pages

More than a third unwilling to share data...

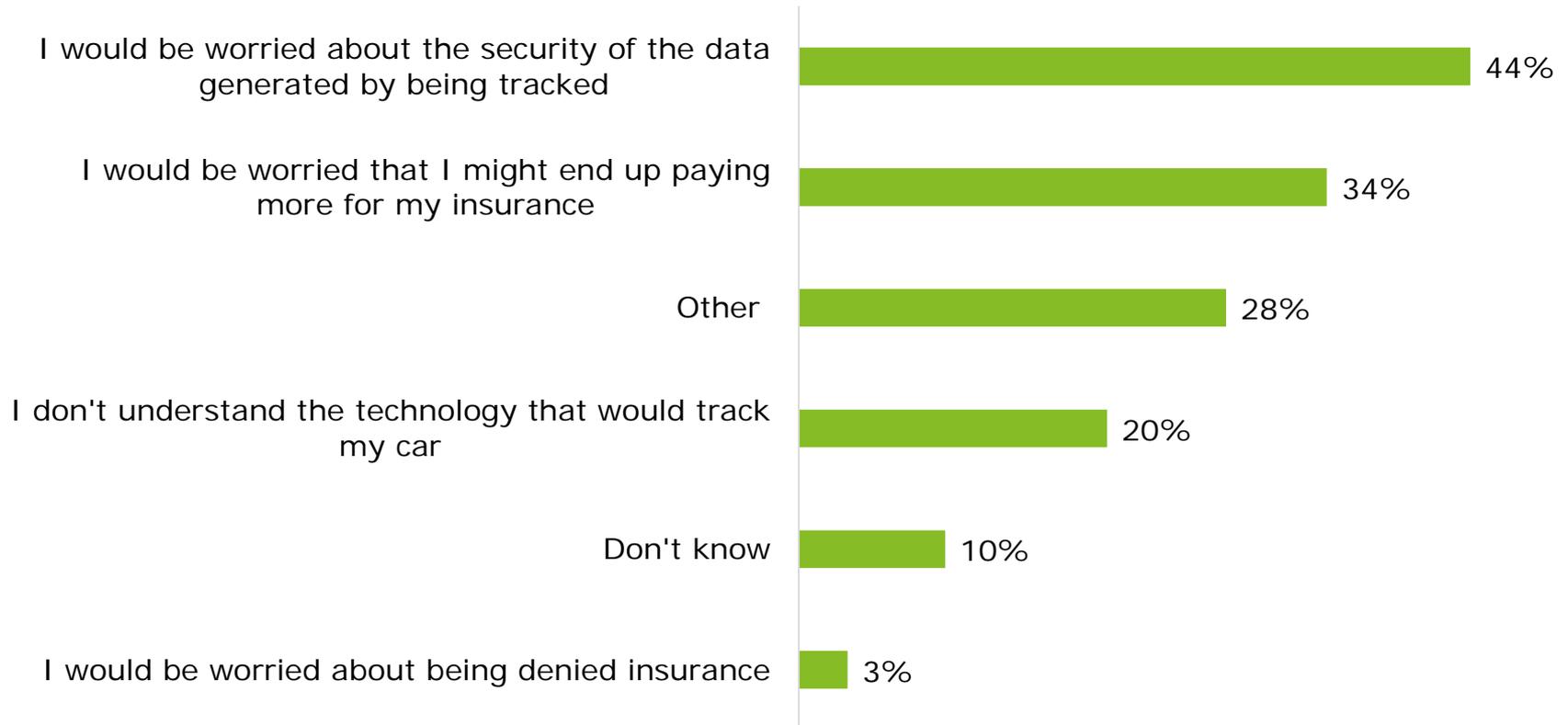Proportion of UK motor insurance customers who would track their driving and share data on it with an insurer

23%	19%	6%	48%	38%	14%
Yes, for a trial period of one month	Yes, for a trial period of a year	Yes, without a trial period	All yes	No, I would not	Don't know

...with many refusing to change their minds, regardless of the potential discount

Discount required to persuade UK motor insurance customers who would not track and share driving data with an insurer to change their minds
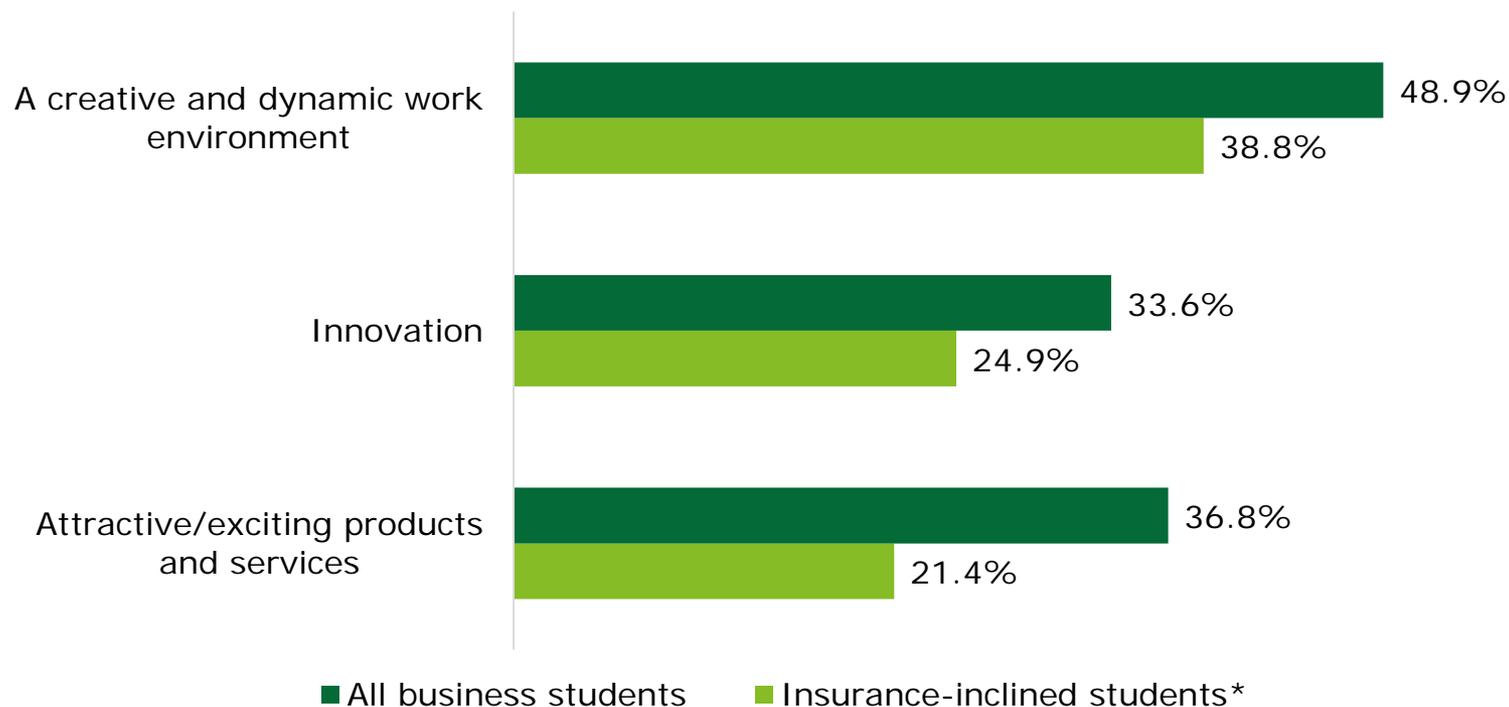
I would never share my data with my motor insurer — 45%

Don't know — 6%

More than £250 — 10%

£201 to £250 — 3%

£151 to £200 — 7%

£101 to £150 — 13%

£51 to £100 — 15%

£0 to £50 — 1%

Data security is the biggest concern for customers
Reasons UK motor insurance customers would not track and share driving data with an insurer

Reason	Percentage
I would be worried about the security of the data generated by being tracked	44%
I would be worried that I might end up paying more for my insurance	34%
Other	28%
I don't understand the technology that would track my car	20%
Don't know	10%
I would be worried about being denied insurance	3%

People who want to work in insurance aspire to innovation less than do their peers heading to other sectors

Proportion of business students who aspire to innovation-related qualities in a future employer, UK, 2015

A creative and dynamic work environment
- All business students: 48.9%
- Insurance-inclined students*: 38.8%

Innovation
- All business students: 33.6%
- Insurance-inclined students*: 24.9%

Attractive/exciting products and services
- All business students: 36.8%
- Insurance-inclined students*: 21.4%

■ All business students   ■ Insurance-inclined students*

* Business students are students studying business-related subjects such as economics. Insurance-inclined students are business students who put at least one insurer in their top five 'ideal employers', when offered a list of potential employers to choose from.

High-level next steps

- Confront barriers associated with conflicting data standards, e.g. make in-house legacy systems more modernized and flexible

- Give corporate culture a facelift to overcome longstanding conventions on how information is managed and consumed across the organization

- Strategise on how to convince or incentivise customers to opt into data sharing

- Consider how an interconnected world might shift products from focusing on paying claims to preventing or reducing losses

- Understand potential roles of partners in deploying smart technology, including players from other sectors, start-ups and brokers

- Identify and mitigate against data privacy and security issues, e.g. access, storage and anonymization

- Test IoT applications using pilots and conceptual frameworks

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