

# HOW DATA MAKES INSURANCE WORK BETTER FOR YOU



Association of British Insurers

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# How Data Makes Insurance Work Better for You

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# 90%

of all the world's data has been generated over just the last two years.<sup>1</sup>



IF YOU BURNED ALL OF THE DATA CREATED IN JUST ONE DAY ONTO DVDS, YOU COULD STACK THEM ON TOP OF EACH OTHER AND REACH THE MOON AND BACK - TWICE!<sup>3</sup>

OUR DIGITAL UNIVERSE ALREADY CONTAINS AS MANY DIGITAL BITS AS THERE ARE STARS IN THE UNIVERSE.<sup>4</sup>



It would take over

# 5 years

to watch the amount of video that will cross global networks every second in 2015.<sup>5</sup>

<sup>1</sup> <http://www.sciencedaily.com/releases/2013/05/130522085217.htm>

<sup>2</sup> <http://techcrunch.com/2010/08/04/schmidt-data/> (updated for 2013 - five exabytes now created per day - <http://aci.info/2014/07/12/the-data-explosion-in-2014-minute-by-minute-infographic/>)

<sup>3</sup> <http://www.computerworld.com/article/2469904/cloud-computing/enough-data-to-fill-a-stack-of-dvds-to-the-moon--and-back-.html>

<sup>4</sup> <http://www.computerworld.com/article/2537648/data-center/study--digital-universe-and-its-impact-bigger-than-we-thought.html>

<sup>5</sup> <http://blogs.cisco.com/news/the-dawn-of-the-zettabyte-era-infographic>

WE NOW CREATE AS MUCH DATA IN ONE DAY AS WE DID FROM THE DAWN OF CIVILISATION UP UNTIL 2003.<sup>2</sup>

There are over

# 5.5 bn

google searches every single day. When it was first launched in 1998, it served 10,000 searches a day.<sup>6</sup>

THE AMOUNT OF DATA CREATED IS ALL THE MORE ASTOUNDING CONSIDERING THAT THE GLOBAL INTERNET POPULATION IS JUST 3.17 BILLION, OR UNDER HALF THE WORLD'S POPULATION.<sup>7</sup>

Facebook users share

# 2,460,000

pieces of content every minute of the day.<sup>8</sup>



TODAY, IF A BYTE OF DATA WERE A GALLON (4 LITRES) OF WATER, IN ONLY 10 SECONDS THERE WOULD BE ENOUGH DATA TO FILL AN AVERAGE HOUSE. IN 2020, IT WILL ONLY TAKE 2 SECONDS.<sup>9</sup>



Every second, on average

# 6,000

tweets are posted to Twitter.<sup>10</sup>



# 48,000

apps are downloaded from the Apple App store every minute of the day.<sup>11</sup>

<sup>6</sup> <http://www.statisticbrain.com/google-searches/>

<sup>7</sup> <http://www.statista.com/statistics/273018/number-of-internet-users-worldwide/>

<sup>8</sup> <https://www.domo.com/blog/2014/04/data-never-sleeps-2-0/>

<sup>9</sup> <http://www.emc.com/about/news/press/2014/20140409-01.htm>

<sup>10</sup> <http://www.internetlivestats.com/twitter-statistics/>

<sup>11</sup> <https://www.domo.com/blog/2014/04/data-never-sleeps-2-0/>



# The digital revolution and big data

"Today, your cell phone has more computer power than all of NASA back in 1969, when it placed two astronauts on the moon".<sup>1</sup>

So wrote famed futurist, Dr. Michio Kaku, in 2011 when thinking about how technology might further shape humanity's future over the next 100 years. Such is the current rate of technological growth that even those comments, just four years old, are now out of date – this year's smartphones are up to eight times faster than those released in 2011.

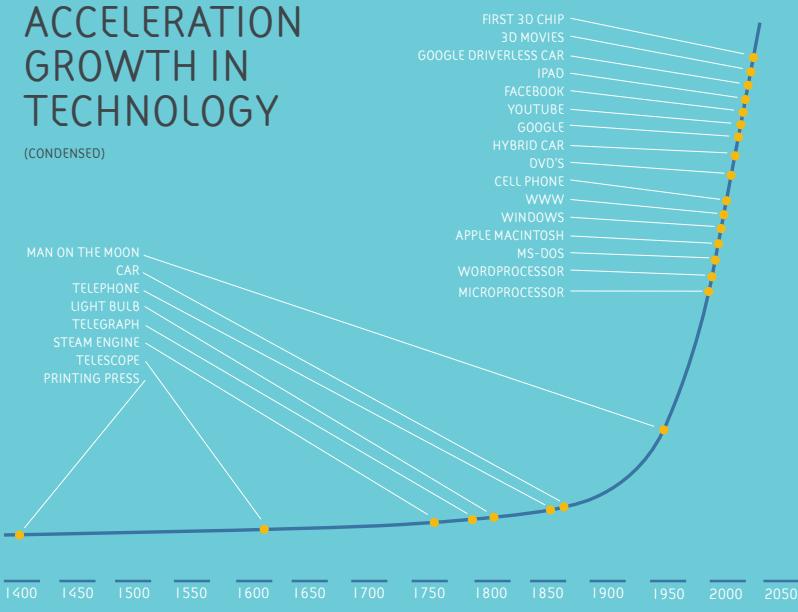
Taking a further step back, just consider the current rate of innovation in the context of the last 500 years, as shown by the graph below.<sup>2</sup>

We are in a digital revolution, where technology is changing our lives faster than ever before and no one can accurately predict what the future holds – only that further change is inevitable. Google is only 16 years old, Facebook is 11, and Twitter, Uber and Airbnb are less than a decade old – all transformational services which few foresaw.

Perhaps the most crucial factor in this change has been the astronomical increase in the amount of data that can be created, collected and analysed. Data is everywhere now, generated by everything from your smartphone to your light bulb. Many estimate that about 90% of all the data in the world today has been created in just the past

## ACCELERATION GROWTH IN TECHNOLOGY

(CONDENSED)



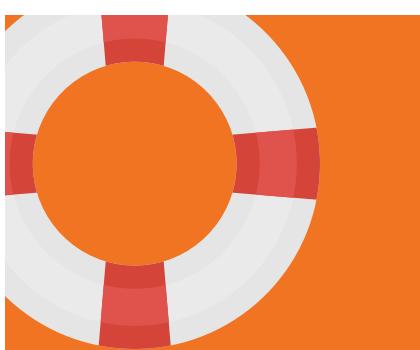
two years. Look again at the services, such as Google and Twitter - none of them would be possible without the uniquely modern capacity to generate, capture and process incredibly large amounts of data.

"IT IS NO EXAGGERATION TO CLAIM THAT WE ARE IN A DIGITAL REVOLUTION, WHERE NO ONE CAN ACCURATELY PREDICT WHAT THE FUTURE HOLDS  
- ONLY THAT FUTURE CHANGE IS INEVITABLE"

So where does insurance fit into this rapidly changing world? Insurance has not yet seen the same rate of transformation as some other industries, but that is beginning to change in two crucial ways. Firstly, 'big data' has consequences for every business by enabling more evidence-based decisions, and most importantly, a better understanding of you, the customer. Secondly, and more specifically to the insurance industry, bigger and better data improves the ability to understand risk – the likelihood that you are going to suffer a financial loss. Understanding risk accurately allows insurers to do two things: Provide information on how you can reduce your risk and minimise your losses, and ensure that your premium price reflects *your* circumstances as accurately and fairly as possible.

Many estimate that about 90% of all the data in the world today has been created in just the past two years.

This publication looks at some of the exciting directions that the industry could potentially move in over the coming decade, as a result of the digital revolution. However, to make the most of these possibilities insurers will have to innovatively use the data available to them, which can only happen if companies continue to treat that information appropriately and maintain a trusting relationship with their customers. This publication is another step in that direction, demonstrating how your data will be used to your benefit, ultimately improving an industry which at its heart is about shielding you from ill effects, freeing you to focus on what's important to you.



## WHAT IS INSURANCE?

The concept of insurance is hundreds of years old, and throughout that time, its fundamental purpose has never changed – insurers take on customer's risk in exchange for a payment, or premium. Five hundred years ago, that risk might have been a wooden cargo ship sinking in treacherous waters, whereas today it might be the risk of a car accident or the risk of living longer than your savings can fund. Regardless of the event, insurance has a long-standing role in spreading the costs of bad luck across society, and in doing so, making for a safer, more secure world.

"REGARDLESS OF THE EVENT, INSURANCE HAS ALWAYS HAD AN INTEREST IN MINIMISING THE RISK OF LOSS TO SOCIETY."

## WHAT MAKES DATA THESE DAYS 'BIG'?

You might be asking – "what's the big deal, data has been collected and analysed for hundreds of years?". However, three key areas have seen such a radical transformation in recent years that we can now refer to an entirely new category of data – 'big data':

### Velocity and Volume

With the explosion in the number of people online, and the ability to easily record photos and videos, data is now generated at a much quicker pace, and in much greater volume. For example, 145 billion emails are sent every day, 300 hours of video are uploaded to YouTube every minute, and Amazon at its peak sells more than 420 items every second.

### Variety

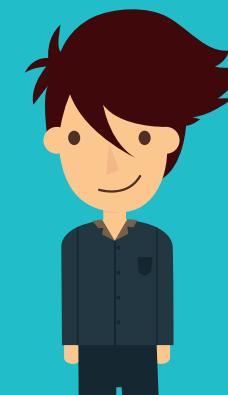
These days we can collect data from almost anything, from smart locks which can detect how often they are opened and when, to radio tags in football boots which can measure everything from the total distance run in a match to a player's average position. Moreover, existing technology continues to measure more and more – where mobile phones used to simply collect call and text data, they now collect video, image, fitness and app data, and more.





# Understanding you

The increasing ease with which data can be collected and stored means that insurers can understand far more of your preferences, whether that's your most valuable possession which your contents insurance should prioritise, the ways in which your life insurance policy matter to your family, or the garage at which you would prefer to carry out your motor repairs. Insurers believe that, whether simple or complicated, your preferences matter. Understanding them is essential to creating products and delivering services which actually work for you, rather than ones you have to work around.



Understanding customers can also be about reacting to wider changes in society, and placing individual preferences within that context.

For example, the ‘sharing economy’ is expanding at a tremendous rate, and it’s conceivable that in the future, the car and residence you use most frequently will belong to a car or home club, or services such as Uber and AirBnb. In this scenario, the traditional approach of buying insurance on a category-by-category basis (e.g. car insurance, property insurance, travel insurance etc.) might make less sense. Instead, insurance may shift towards insuring you as an individual, covering all your personal risks, rather than just a specific category of them.

Regardless of whether the examples given apply specifically to you, you will always have some unique needs which can be best met by a unique, personal product and service.

## SMALL DETAILS, BIG DIFFERENCES

Sometimes it’s understanding the simplest of individual details which can really transform your experience. Take the example of a family of four whose only vehicle was seriously damaged in a road accident last year.



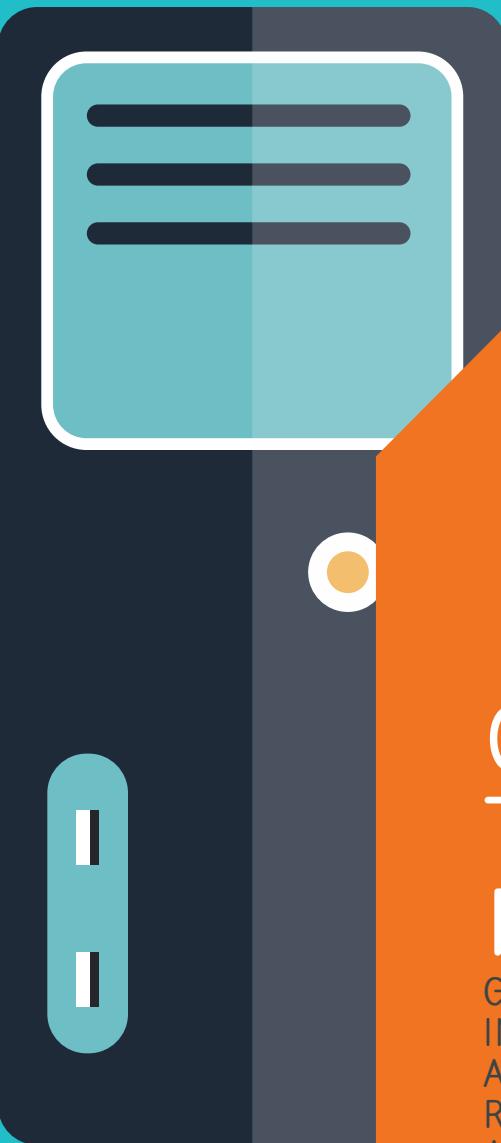
Using data on the family’s household location, proximity to school and term dates, the insurer understood, without having to be told by the family, that the vehicle was essential for the children’s school run, and that there were only a couple of days left before the end of term.

The insurer was able to offer a free courtesy car for those remaining days in exchange for taking a little longer to repair the car during the school break – a compromise which ensured that the family’s difficulties were minimised during an already stressful time.

## UNDERSTANDING YOU CAN ALSO SAVE YOU TIME

Have you ever been frustrated with the number of questions you’re asked before you can purchase insurance? It’s a difficult balance to strike for insurers – they want to ask you as few questions as possible to make the experience simple, but they also want to understand your individual circumstances so they can provide a quote that applies to you. It’s another area where the data revolution is making a difference. Instead of asking you all over again, insurers in the future might be able to access existing databases with your permission in order to pre-populate information in your application. For example, you can now enter your car license plate information to automatically provide details about your vehicle’s engine size, number





## GETTING THE RIGHT PRICE

GETTING THE RIGHT INSURANCE ISN'T SIMPLY ABOUT GETTING THE RIGHT PRODUCT, IT'S ALSO ABOUT GETTING IT AT THE RIGHT PRICE.

**G**etting the right insurance is not simply a question of choosing the right product, it's also about getting it at the right price. At its simplest, we buy insurance to protect ourselves against the risk of an unfortunate financial loss.

Different circumstances change how high or low that risk of financial loss is – for example, living in a low-lying area near a river is likely to increase the risk of flooding and therefore property damage, whereas living at the top of a hill will have the opposite effect. The higher the risk, the higher your premium.

**MORE ACCURATE DATA ALLOWS INSURERS TO DIFFERENTIATE BETWEEN INDIVIDUAL HOMES - SO IF YOUR HOUSE IS AT A LOWER RISK THAN ALL OTHERS IN YOUR POSTCODE, THAT WOULD BE REFLECTED BY A LOWER INSURANCE PREMIUM.**

Insurers have always used data to assess that risk, but that calculation can now be, where appropriate, more accurate and personal. Take the example above on the risk of flooding:

**ONE:** In the past, the risk of your house flooding was calculated based on postcode – which grouped your home with on average 18 others or even a simple yes/no on proximity to a river, as insurers lacked the data to differentiate between individual houses.

**TWO:** If most of the houses in your postcode were at high risk of flooding, but yours was built on an incline, higher than others, and at a low flood risk – you would still have paid the same premium as those at high risk.

**THREE:** Fast forward to now, and the availability of much more accurate data increasingly allows insurers to differentiate between individual homes – so if your house were at a lower risk of flooding than all others in your postcode, that would more likely be accurately reflected in a lower insurance premium.

Examples of this kind are becoming increasingly common across the sector. As insurers better understand the risk that applies to you as an individual, they can price your premium more accurately to ensure it reflects your own personal circumstances.

## REAL-TIME PRICING

Currently, any change in your circumstances or behaviour is only reflected in your insurance price at the time of renewal, which in most cases is on an annual basis. Greater use of 'big data' by insurers may allow them not only to price your insurance more accurately, but to do so in real-time. In the future, this could mean your change in behaviour resulting in savings straight away, with you getting the satisfaction of seeing the direct impact of your choices.

More real-time information might also let you vary your insurance product to suit what you're doing for one-off moments. For example, a car insurance policy which you could expand to include your children on certain days of the year, or an increase in your home insurance coverage for when it's being renovated.

## TELEMATICS

A smart box in your car measures how well you drive.

The data collected can be used in the event of an accident to inform emergency and recovery services of your location, and of the possible severity of the crash.

Your insurance price is based on how safe and conscientious a driver you are rather than the average driver.



## HOME INSURANCE AND THE INTERNET OF THINGS

Connected devices in the home such as 'smart' boilers, thermostats, locks and smoke detectors monitor your home, making sure that crucial appliances are regularly serviced, and the house is well maintained.

The data collected can be used to warn you of potential faults with your appliances, or remind you to, for example, turn the thermostat up if there is due to be cold weather, in order to avoid frozen pipes.

Your insurance price is based on how conscientiously you care for your house, rather than the average homeowner.

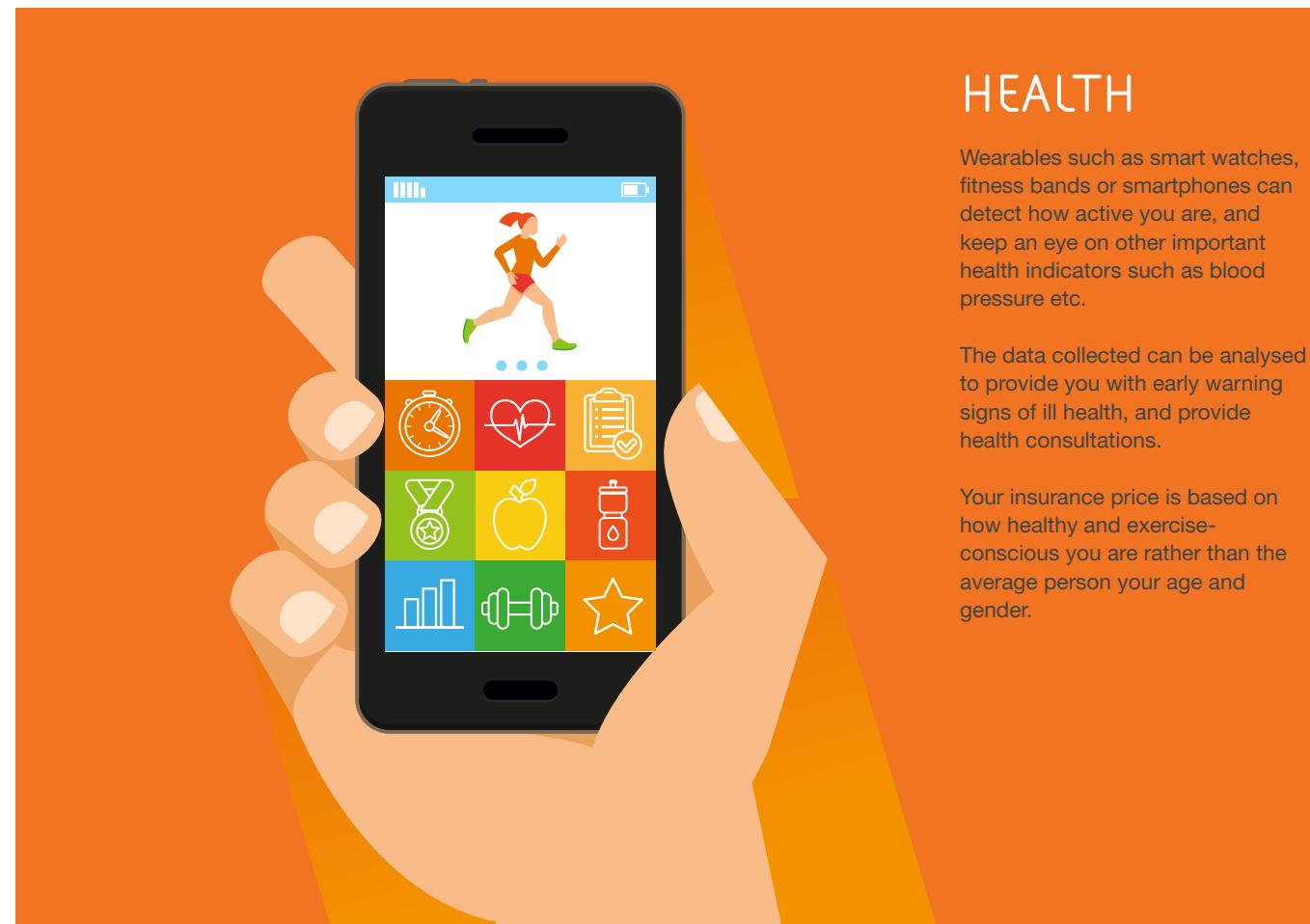


## HEALTH

Wearables such as smart watches, fitness bands or smartphones can detect how active you are, and keep an eye on other important health indicators such as blood pressure etc.

The data collected can be analysed to provide you with early warning signs of ill health, and provide health consultations.

Your insurance price is based on how healthy and exercise-conscious you are rather than the average person your age and gender.





ENABLING YOU TO  
MAKE THE RIGHT  
DECISIONS TO  
MINIMISE YOUR RISK



# INSURANCE HAS ALWAYS BEEN ABOUT INSURERS TAKING ON RISK ON BEHALF OF THEIR CUSTOMERS

As a result, insurers have always had an interest in their customers taking action to reduce their risk. These actions benefit both parties - fewer claims for insurers on the one hand, and happier, safer and more secure customers on the other. However, in practice it has not always been easy for insurers to help customers in this way.

The digital revolution has the potential to completely transform this relationship, and reframe insurance as a service

MORE DATA ENABLES INSURERS TO REDUCE THE NUMBER OF CLAIMS MADE, WHICH IN TURN LOWERS PRICES FOR ALL CONSUMERS

These examples highlight a growing cycle in insurance:

More data available, enabling insurers to reduce the number of claims made, and lower customer's risk



Lowers prices for all customers, leading to more people buying insurance



## ONE: AN ONLINE PENSION SERVICE FOR THE FUTURE

Imagine an online service which could tell you:

The value of all your pension pots in one place;

Project your final pot size based on factors you could vary, such as your retirement age or salary;

Analyse your current spending habits to see what level of pension income you'd need to maintain your current lifestyle;

If necessary, advise you on how to save more, or on pension products which may be more suitable for you.

MANAGING RISK ISN'T JUST ABOUT INSURANCE CLAIMS – BETTER INFORMATION CAN AFFECT YOUR LONG TERM SAVINGS DECISIONS AS WELL.

## TWO: USING WEATHER WARNINGS TO MINIMISE YOUR FLOOD OR STORM LOSSES

The availability of extremely sensitive and hyperlocal weather information means that insurers can increasingly predict flooding and storm damage, and give valuable advance warning to customers of potential damage. Insurers can also provide advice on how to minimise this damage, and use the warning period to prepare and offer alternative accommodation and transportation. For example, during the severe UK floods in 2014, some insurers sent texts to customers warning them of incoming stormy weather, asking them to take appropriate defences at their homes, such as moving their furniture and possessions to higher levels, and then offering them free alternative accommodation for the night so that they could evacuate.



## THREE: USING DATA FROM APPS AND DEVICES TO PROVIDE YOU WITH USEFUL FEEDBACK

As well as using app and device data in pricing insurance, it can also be used to minimise your risk and improve your decisions. For example, insurers can analyse your driving data to identify the steps you could take to become a safer driver, suggesting that you should perhaps slow more at corners, or avoid driving on certain roads where accident rates have been particularly high. They might also use your location information to warn you when hazardous weather is expected, or when accidents have occurred which might delay your journey.

In the same way, data from wearables will in future enable insurers to proactively monitor your health, and by understanding trends and patterns from millions of

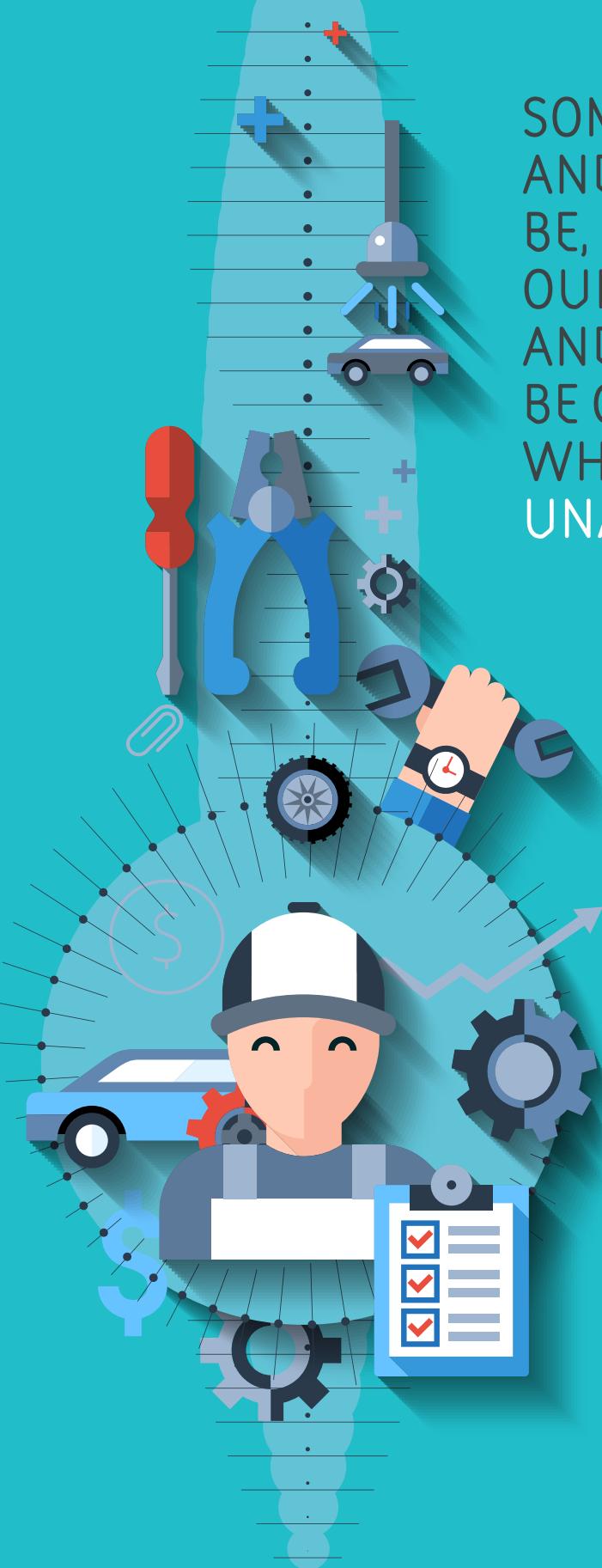
customers, identify when your own data suggests that you might be at risk of a health-related incident. Insurers can then also provide health consultations with specialists who can use the data to diagnose or address your underlying issues.

In fact, monitoring customer's data doesn't just help prevent incidents – it can help during them as well. A recent case involved a car owner whose driving app data suggested that they had been in an accident in which the car had landed on its roof. The insurer therefore called for an ambulance which proved life-saving, as the owner's vehicle had gone down an embankment out of sight of the road, and the passengers had been unable to call the emergency services themselves.





IMPROVING  
THE CLAIMS  
PROCESS



## SOME RISKS ARE, AND ALWAYS WILL BE, OUTSIDE OF OUR CONTROL, AND THERE WILL BE OCCASIONS ON WHICH A CLAIM IS UNAVOIDABLE.

In these circumstances, at what is already likely to be a stressful time for you, insurers' priority is ensuring that the claims process is as easy and flexible as possible. By collecting already available data, companies can minimise the time you spend making a claim, and can focus on the most important requirement – getting you back on your feet.

For example, imagine five years from now you're involved in a minor road accident. An insurer automatically identifies from your smartphone/smart car data that a crash has taken place, and immediately knows the location to which it sends a recovery vehicle. You then use an app to scan your car and send pictures to the insurer, who can start to assess which garage specialises in that kind of damage and can pre-order the parts required. The insurer passes on the car damage scan to a garage, selected from a range of options based on your particular preferences – for example, do you prefer a garage who will provide a courtesy car, or one that is closer to home? Your chosen garage is able to repair the car much quicker thanks to the scan, and in the meantime, you can log into your insurance account and monitor the car repair in real-time, with an accurate projection of when your car will be available for collection. These improvements also result in a lower cost to the insurer, which ultimately saves you money when you come to renewal.

## USING DATA TO COMBAT FRAUD

Insurance fraud is not a victimless crime – the higher the cost to insurers of fraud, the more it ultimately costs honest customers and society.

It is estimated that fraud increases average car insurance premiums by around £93. In 2014, insurers detected over 130,000 cases of fraud, with a total value of £1.32 billion. By detecting these frauds, insurers saved on average £3.6 million every day, money which could then be spent on creating a better service, and reducing prices for honest customers. These frauds could only have been detected using

sophisticated data analysis, which combines thousands of individual cases of fraud to detect patterns and trends on a large scale, and therefore enable a more accurate identification of crimes which may previously have been missed. As technology and data analysis improve in the future, it will only become harder for fraudsters to succeed, as their dishonest scams are given away by clues they may not even realise they're leaving behind.



# HOW WE TREAT YOUR DATA

The digital world will impact all industries, but insurance in particular is ripe with exciting areas for transformation. We have explored some of the ways in which that transformation may happen, but it is an unpredictable world out there and the possibilities are endless. Only one thing is

certain – data will be crucial to any change, and using that data requires a relationship built on trust between customers and insurers. The insurance industry is amongst the most heavily regulated sectors in the UK, including oversight from the Information Commissioner's Office and the Financial Conduct

Authority, who both have an explicit commitment to protect consumers. Insurers work hard to meet and indeed exceed the standards set for it, to ensure that data is used as appropriately and beneficially as possible.



WE ARE ALWAYS LOOKING TO IMPROVE AND ADAPT TO SOCIETY AS IT EVOLVES. AS SUCH WE CONTINUOUSLY ENGAGE WITH REGULATORS AND OTHER SECTORS TO SHARE BEST PRACTICE, AND ENSURE THAT WE ALWAYS TREAT YOUR DATA WITH THE RESPECT YOU DESERVE.

# OUR CUSTOMER COMMITMENTS

## ONE

WE RECOGNISE THAT YOUR DATA IS AMONGST YOUR MOST PERSONAL AND VALUABLE POSSESSIONS, AND WE ALWAYS TREAT IT AS SUCH – SAFELY, SECURELY AND CONFIDENTIALLY.

## TWO

WE DO NOT COLLECT ANY MORE OF YOUR DATA THAN ABSOLUTELY NECESSARY, AND ONLY STORE THAT WHICH IS ESSENTIAL TO ACHIEVING ONE OR MORE OF THE FOLLOWING USES:

Providing you with a more personalised product and price, which accurately reflects your individual risk and circumstances;

Understanding and improving our customer service;

Improving our businesses in a way which ultimately benefits customers.

## THREE

WE ONLY USE DATA WHICH HAS BEEN COLLECTED IN THE KNOWLEDGE THAT IT WILL SERVE ONE OF THE USES HERE.

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For more information  
[www.abi.org.uk](http://www.abi.org.uk)



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