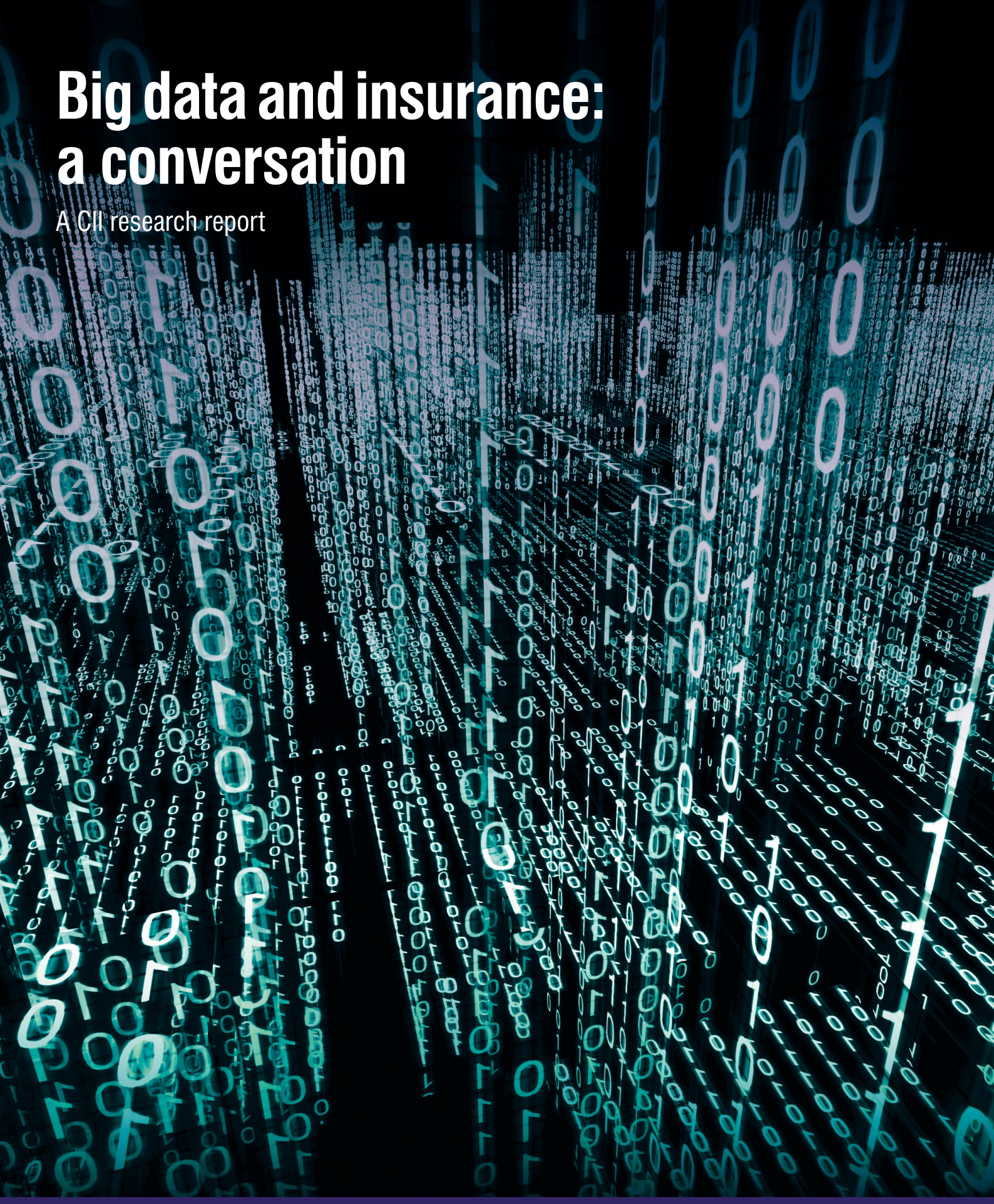
Big data and insurance: a conversation

A CII research report



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The CII is grateful to Duncan Minty ACII, Chartered Insurance Practitioner, for his contribution to this paper.

2 Foreword

Sandy Scott

CII Chief Executive Officer

Insurance has always relied on data: about our home, our car, our health. The more that insurance firms know about the risk they are being asked to cover, the easier they can decide the right premium, the right cover, the right service. So when a development like 'big data' emerged, insurance firms were always going to be interested in it.

The transformation, like many involving technology issues, has the potential to revolutionise insurance as we know it. But is it for good or ill?

So how are insurance firms handling big data and what ramifications might this have for the public? It is around customers and the interests of the public at large that this paper is focused. Big data is often talked about in financial and analytical terms, but it is customers who should be at the heart of any business transformation, for they buy the products and expect to be treated fairly.

In this paper, we imagine a dialogue between the insurance sector and the public to tease out some of the issues which big data will increasingly throw up. The paper is not attempting to provide all the answers but does try to encourage insurance professionals to think about these issues and start a conversation about some of the vital questions associated with big data and insurance.

We want this to contribute to the productive adoption of big data, for the benefit of both insurance firms and their customers. The paper highlights some concerns the public may have, now and in the future, and it is important that the insurance sector can articulate a clear and reasoned response about how big data can be used for as great and wide a benefit as possible.

Big data will transform insurance. We will see new products and new services developed as a result of big data. And we'll each in our own way experience its influence on our premiums, cover and claims.

And big data has the potential to transform the relationship between the insurance sector and the public. Insurance firms are quite rightly looking at new and exciting ways to engage with their customers.

Whether that transformation in relations becomes a reality will depend on two things: the value that customers experience from insurance firms' use of big data, and the extent to which the insurance sector's handling of big data builds or undermines trust.

In this paper, we explore the influences that big data could have on trust between insurance firms and their customers. We have done so in the form of a conversation, between an insurance practitioner and a customer. In the conversation, they explore what is meant by big data and then examine how insurance firms are handling big data, in three stages:

- how big data is gathered
- how it is analysed
- how decisions are then made from it.

They talk about both the opportunities and the concerns in each of these three stages. Differences of opinion emerge against the background of a shared realisation that change is to be expected. Both recognise that there are issues to be addressed, sooner rather than later, in order for the public's trust to be retained. These have been highlighted in a set of questions at the end of each stage.

> "all big data really means is taking lots of different signals from myriad sources and pulling them together and processing them in a way that is meaningful."
>
> James Murray, Microsoft, 2015

At the end of the conversation, the customer was asked what was important about how insurance approaches big data. These three points were raised:

1. "By all means seek out all the advantages of big data, but don't go so far down the line that some parts of the public start to really lose out as a result. Make it as inclusive a move forward as possible."
2. "Put some limits on what data you collect about us, and how you collect it. I know you talk about lifestyle underwriting, but that's your jargon from your agenda. There's a point at which I want some things to remain private."
3. "Be careful about how decisions are made. Don't forget that your customers are humans, not numbers. Those customers think of insurers as solid companies, not ones that bounce their prices up and down like a yoyo."

Professionalism will be a vital ingredient to a successful transformation of insurance by big data, with these five contributions being seen as distinctive:

1. Ensure that the customer perspective is recognised in the decisions that insurance firms take around big data.
2. Ensure that decisions are taken against the full context of the issues at hand.
3. Recognise not just the short term implications of decisions around big data, but those in the mid to long term as well.
4. Ensure that decisions are taken not only according to what is permitted by the law, but also according to what is considered to be the right thing to do.
5. Encourage insurance firms to recognise the implications of their big data projects not only for those who will benefit from them, but also for those who may be worse off as well.

Two issues in particular are in need of careful professional judgement, both within individual firms and across the sector as a whole: social sorting and the discrimination that could flow from it; and how the right balance between personalisation and pooling of risk is to be achieved. Both of these issues lie at the very heart of insurance, and insurance professionals will need to draw on all their knowledge and experience to ensure their satisfactory resolution.

There will have been few times in the CII's long history when the sector has experienced a transformation of such vital importance. If that transformation is to be successful for both insurance and its customers, then the obligation under which all insurance professionals' work is done must be upheld: "to secure and justify the confidence of the public".

4 What is ‘big data’?

Customer:

There was a programme on the radio recently about ‘big data’. It mentioned that this was something that insurance firms were really interested in. Is that correct?

Insurance:

Yes, it is. Insurance firms have been spending a lot of time and money on big data, because we think it will change insurance in lots of different ways.

OK, so let’s start with the basics. What do insurance firms mean when they talk about big data?

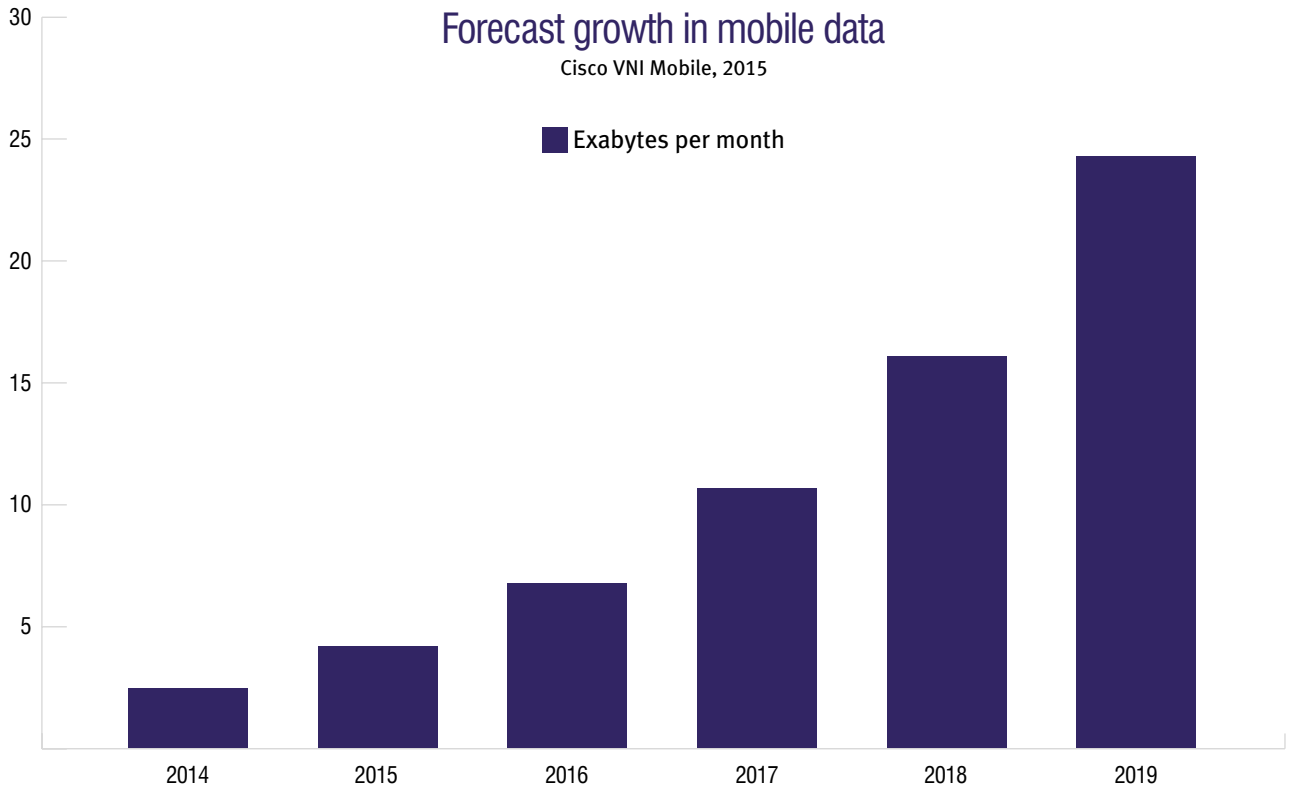
Well, ‘big’ certainly comes into it! There’s been a colossal increase in the amount of data that people produce nowadays. That’s because we are increasingly using digital devices as part of our everyday lives – for shopping, reading, chatting with friends, travelling, you name it. And all these devices collect ‘data’ about what we get up to, and that’s all stored and analysed to find ways of improve the shopping experience, the reading experience, and so on.

So big data is all about size then?

Size is important, but so is what you do with it all. Big data is just as much about the tools available for analysing all that data. After all, what’s the point of collecting it all if you didn’t then have analytical tools to learn something from it?

Give me an example from the world of insurance then.

Take motor insurance. Many cars are now being fitted with ‘black boxes’ that collect millions of bits of data about your driving. Insurance firms are starting to set premiums for some motor policies using that data. So rather than an insurance firm looking at your motor policy once a year, it’ll now be judging the risk every time you drive. It means good drivers will pay less than poor drivers.



So what happens if I make a claim? Will my premium then shoot up? I thought insurance was about smoothing out the ups and downs?

But what about those people who hardly ever claim? They end up paying for people who claim for things all the time. That doesn't seem fair. Take another example. Lots of people are now using devices to track their sporting activities; some even wear them all day. All the data these devices collect helps insurance firms make sure they charge the right health insurance premium.

So you're collecting driving and health data. What other data are you interested in?

Well, we think that how people go about their everyday routines affects their insurance needs in lots of different ways: we call it 'lifestyle underwriting'. So we're interested in all types of data.

Come on, be more specific. What do you mean by 'all types of data'?

Well, a lot of it is data you're sharing with people anyway, such as what you like on social media, and some of it is based upon what you've told us already, such as where you live. And then there's the data you've shared with other companies interested in the same things as us. It may seem a lot, but we think it influences the claims we end up paying, so we need to know about it.

That's a lot of data. In fact, that's a bit of a surprise to me. I thought you just paid up for your insurance once a year and then forgot about it. Let's have a break for a minute and then go on to talk about the collection of all this data in a little more detail.

> "The digitisation of society touches everything the insurance industry does"
>
> Association of British Insurers, July 2015

What is 'big data'? – Questions to consider

Here are some questions raised by the conversation so far.

1. The perceived stability of what is being offered to customers. Will big data lead to an increase or decrease in the price volatility experienced by individual customers?
2. Insurance firms will ask fewer direct questions of customers, yet seem to know more about them. What can firms do to maintain customer confidence in the decisions being taken?

6 Gathering the data

Insurance:

I think about all the data insurers are collecting in this way: all those long insurance application forms will soon be a thing of the past. We'll just gather together the information we need and set your premiums accordingly. It'll all happen automatically and will mean much less trouble for policyholders. And of course, they'll be charged a fair premium.

Customer:

I hear what you're saying, but I still don't understand how you're going to get all this information. You mentioned social media a minute ago? Are you saying that if I like something on Facebook, that can affect the likelihood of me making a claim?

Not really. Most of this data usually doesn't mean anything on its own. It's only when it's brought together that we get a better idea about claims. Remember what I said about big data analytics a few minutes ago.

And I remember what you said about the 'big' bit of big data as well. Just where are insurance firms getting all this big data from?

Well, it's all things you're sharing anyway, like on social media. And it's stuff that companies share all the time, such as your credit record. Then there's what we get from other firms interested in the same things as us.

Tell me a bit more about that last one.

> "de-identification of data as a means of protecting individual privacy is, at best, a limited proposition"
>
> US White House report, May 2014

Well, a lot of people, like when they're shopping, are happy for the retailer to pass that information on to trusted partners like us. It's important for us to know as much as we can about our policyholders, to make sure they're charged a fair premium and get the right service.

Hold on: how is all this information passed on between 'trusted partners'? Are you saying they give it to you, just like that?

Unfortunately not. We usually pay them a fee for it.

So you buy in data about me. But I always understood that firms didn't sell the data that you give them. Have I been wrong on that?

654m

people use Facebook on mobile on a daily basis

It depends. If you agree to that other company sharing your data, they do so with trusted partners like insurance firms. If you don't agree to them sharing your data, then they usually take out the bits that can identify you and sell it on as just 'bulk data'.

But how is 'bulk data' of any use to you? How can you use it to give the likes of me a fairer premium?

Well, that's where analytics come in. It can see patterns in that bulk data, and patterns in your data as well, and if there's enough of a match, then it helps us do that 'lifestyle underwriting' we talked about earlier.

What you're saying seems to add up to "my data is for sale, and you're buying it". Is that right?

Well, I wouldn't put it like that. There are so many different permutations. But remember, that's how things are nowadays. We're sharing so much these days. You've got to see it in terms of the future, not the past.

OK, but I'm not sure some of the fundamentals have changed that much, like my right to decide what happens to my data. Shouldn't I be the one to decide how my data is passed around?

Remember, if as you said, you like or favourite something on social media, then you're already sharing it.

OK, let's explore that for a minute. I know you said it's the analytics in big data that tell you that something I say or do on social media could mean something to an insurance firm, but you know as well as I do that a lot of what people say on social media is rubbish: jokes, larking about, fun stuff. How can an insurance firm take some glib comment about going to the gym all the time and know that it was for real? You're looking at fun social stuff through a business pair of glasses.

Each bit of data may not always be reliable, but when it's all added together, then it does make sense.

Well, I'm not sure how adding together all that fun stuff somehow turns it into something meaningful. Isn't there a danger that people will start to worry about what they say or do online? If you're watching all this, then isn't there a danger that you'll stifle some of what people like about the internet?

Two things. Firstly, remember the internet has never been free. Companies are paying for all those servers and software, so it's only fair that they try to recoup their investment in various ways. Insurance is no different. And secondly, if you're doing things that will affect the risk insurers are providing cover for, then it's right that we should know about them.

30 billion

Pieces of content shared between Facebook users every day

Bernard Marr, on Linkedin, 25 Sep 2014

24 billion

The total number of networked devices and connections by 2019

Cisco VNI forecast, Feb 2015

Customer:

I understand your point, but it comes across as a bit open-ended. You may not know how any one bit of data will affect the insurance policy, so you want it all so that those analytic things can find patterns. Can't I say at some point: 'hey, that's enough, no more'?

Insurance:

OK, but don't you see that to set the right premium, we need to know as much as we can about what we're insuring?

Well, to a degree. The big question seems to be: do I have any choice in how much of my data you get access to?

Well, it is something insurance firms are talking about at the moment. We want to do the right thing by our customers, while at the same time trying to balance the demands of a very competitive market undergoing some really innovative changes. It's tricky!

So some choice will still remain about what data I have to share?

I think so. That's what we're working on just now, to find that right balance.

That's good. Can we talk now about something I'm still trying to get my head round, which is how you set the right premium. It all sounds so scientific, but everyone knows someone whose renewal premium has gone up; they've then gone and found the same cover elsewhere for a lot less. But all that data about what they're getting up to hasn't changed. Has the insurance market really changed?

It's always been a competitive market and always will be, and that's a great plus for customers. Of course some people move insurers at renewal; that's to be expected. But remember that there are many loyal customers who trust their insurer to give them a fair deal.

So are you saying that customers can always trust insurers to give them a competitive renewal premium? For if you are, how do you tally that with all those people who often find it cheaper elsewhere?

> "a digital world in which everything is open unless there is a good reason for it not to be"
>
> Association of British Insurers, Dec 2014

Well, insurance firms always have their business priorities: that's to be expected. And they'll use those priorities to set their premium rates to bring in the type of business they want. That's how business works.

Oscar Health Insurance provides a quote in 42 seconds with 5 questions

Post Magazine, 07 Jul 2015: Big Data Roundtable

I take your point, but then, if you think about it, isn't good business for you when you can charge premiums that are above what you're likely to pay out in claims. Sure, it's right that firms make a profit, but isn't all this big data, and it must be expensive stuff, really about increasing profits. Isn't that the bottom line?

And it always has been, and people like you benefit from it through a competitive insurance market, full of firms motivated to try new things.

Sure, but how can I trust insurance firms not to fleece me: using all that big data to charge me what they think they can get away with? Is this big data thing really going to build trust in the insurance market?

Look, insurance is a pretty complicated thing, and yes, big data will make it more complicated. But where would we all be if everything was kept simple; if no one tried new things? Big data is going to transform how we understand the world, and insurance wants to be part of that.

Don't take me for a luddite. I'm all for new things. I just want to know what's in it for me. Is big data going to be a good thing for me, or not?

In the round, we're convinced it's a good thing for policyholders. Some will benefit quite a lot. Others will benefit from it without actually realising so. And there will be others who are going to pay more, but that's down to us now knowing more about the risk they're wanting covered.

Let's come back to that in a minute. You talked earlier about there being two sides to big data: the 'bigness' of all that data you bring together, and the tools you use to sort it all out. It sounds like that's where all the important decisions are made?

Yes, it is. Let's take a short break and talk about that in a minute.

Gathering the data: Questions to consider

Here are some questions raised in this last part of the conversation:

1. Insurance firms are drawing on ever widening and diverse sources of data. What should firms do to avoid such data trading undermining public confidence around what they disclose?
2. Insurance firms increasing use of 'lifestyle underwriting' relies on them knowing as much as possible about customers. To what extent does this justify an insurance firm's 'right to know'?
3. Customers expect some say in how their data is accessed and used. What sort of boundaries should insurance firms work within so that customer expectations are respected?
4. The same piece of data used in different contexts can mean different things. How can insurance firms ensure that decisions reflect those differing contexts and meanings?
5. Consent is a feature of every relationship between a firm and its customers. How can insurance firms utilise big data so as to respect conventions for consent?
6. Customers display a range of attitudes towards consent. How will firms ensure fair access to insurance for customers across this spectrum of attitudes?

10 Analysing the data

Insurance:

As I was saying, the analytics side is really fascinating. It's amazing how they can find all those patterns in what we do and say all day: things we sort of knew could be there, but were never able to put a number to. Analytics does that for us.

> Information is the oil of the 21st century and analytics is the combustion engine.
>
> Peter Sondergaard, head of research, Gartner.
> 17 Oct 2011

Customer:

Give me an example.

Ok, let's take motor insurance. When and where we drive tells an insurer something about the likelihood of a claim. You know: using roads at a less congested time of day, and all that. Whether you slow down for corners, or consistently signal a turn, as well. There's even one insurer who is using how you drive to show life insurers just how relaxed or stressed a person you are.

That's pretty amazing. And all these patterns: how do you work out how strong they are? How do you choose the ones that really matter?

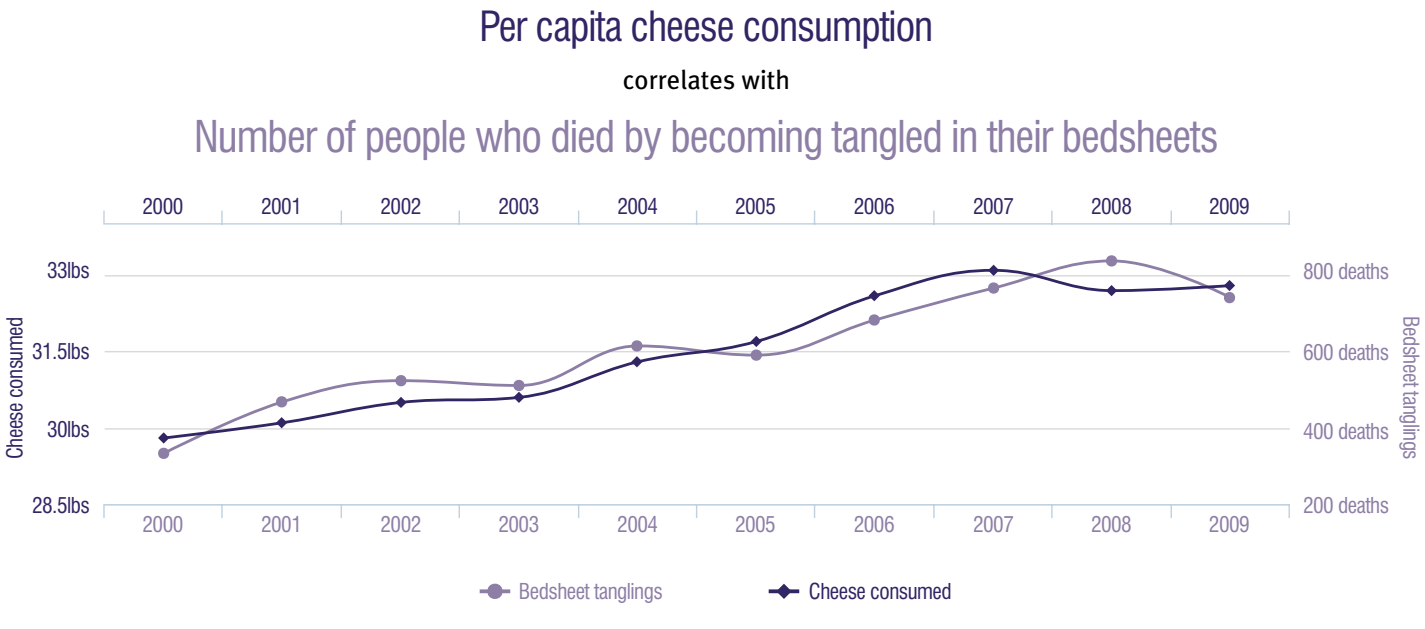
That's done with some pretty sophisticated statistics. The software uses the statistics to make the decisions for us. Big data draws together so much information and that's the best way to handle it all.

OK, but you must have heard the one about there being three types of lies: lies, damned lies and statistics. Just because statistics shows a match between two things doesn't mean that one thing causes the other to happen.

You're right, so that's why our data scientists are careful to only use the significant matches. And remember, there's a lot of science behind big data: it's not as if people are making it up!

I'm sure you're not, but what about this. I read in a science magazine recently about how the consumption of cheese had a very close match with the number of people who died from becoming entangled in their bed sheets.

Are you telling me that if I bought a lot of cheese, and then bought some bed sheets, that my life insurance premiums would shoot up?



Source: tylervigen.com (Correlation = 94.71% US data)

I've not heard of that one! My point is that insurance has used statistics for hundreds of years and the public trusts us to use it sensibly. It's not something new to us.

I take your point, but if there's this deluge of big data and you're relying on all these fancy statistics to work out what's important, then it sounds a bit like insurance is going to be run by a bunch of machines from now on. Where's the human touch going to come in?

Oh, don't worry: we'll still be around. In fact, we want to use what we learn about our customers to give them help with the risks they're insuring. You know, more than just sending out a policy each year. So with those black boxes in cars, for example, we're giving feedback to drivers on how they're driving and clues as to how to drive better. They're very popular. And if you're in an accident, the black boxes can signal that to us and we can get someone out to you quickly.

That's good to hear, for you did seem to be talking about big data just in terms of premiums and not much else. So are you saying I'll get better cover because of what big data tells you?

That could well be the case. After all, the more an insurance firm knows about a risk, the easier it is for them to decide what the right cover is for it.

OK, forgive me if I sound a bit sceptical, but you're not saying big data will give me better cover. You're saying that cover might be better, which sort of implies that it might sometimes not be better. Am I right in thinking that?

Clearly, there could be variations in cover just as there will be variations in premium. You can see that with all those offers on price comparison websites – there's different levels of cover, and some people prefer to get less cover rather than pay a higher premium. Think about it: the days of 'one size fits all' are long gone. Now you get a huge choice from a very competitive market.

OK, but we both know that those price comparison websites push price all the time: that's why they're called 'price comparison' websites. Finding out whether the cover is any good is pretty difficult. And then the policy itself is huge and it's always full of jargon. So how am I supposed to work out not just if my premium is fair, but whether my cover is fair as well?

There are two ways: firstly, insurance is a very competitive market, so insurers are always trying hard to keep business. And secondly, there's a lot of skilled, experienced people working for insurance firms: they're a professional lot.

A US health insurer bought data on consumer purchases in order to flag health-related actions, like buying plus-sized clothing

Wall Street Journal 25 Feb 2013

over

30,000

words in some motor insurance policies

29,966

words in George Orwell's novel Animal Farm

Customer:

I'm sure there's a lot of good people working for insurance firms, but let's be honest, we both know there's been some pretty rum decisions made in the past. Do you really think that big data is going to change that?

Insurance:

I think many insurers do recognise that all this is important and yes, it's a challenge they're facing up to. A lot of it will be about making sure that professional and ethical judgement does influence the big decisions that insurance firms are making around big data.

Well, I hope they get it right. A lot of things depend on insurance! You know, I can't help thinking that insurance has always been a mystery for its customers, and I suspect it will become even more of a mystery when run with big data. Are you in effect saying that we just have to trust in insurance people to make the right decisions? Is that what it comes down to?

In part, yes, but what I also want to point out is that there's a lot going on in insurance besides big data. There's a real push to make insurance simpler to understand; we're trying to be more open with things our customers could find helpful, and we're always being challenged, from people like the regulator and the ombudsman service. We're kept on our toes!

Which sort of leads us into the next thing I'd like to talk about. How is all this big data going to affect the everyday decisions that your people make?

Good question. Let's talk about that after a short break.

Analysing the data: Questions to consider

Here are some questions raised in this part of the conversation

1. Insurance firms are using big data to optimise prices according to the amount they believe the customer is willing to pay. Do insurance firms feel confident they can justify this to the public?
2. Big data is expected to change the value that customers get out of insurance. Are insurance firms doing enough to demonstrate to customers 'what's in it for them'?
3. The statistics behind big data show correlations, not causations. What are insurance firms doing to ensure that the decisions they're making using big data respect that difference?
4. Big data is expected to lead to greater variation in both premiums and cover. What are insurance firms doing to ensure that those differences are clearly signposted to customers?
5. Big data is going to make insurance more complicated. What are insurance firms doing to ensure that customers can understand as much as possible about what they're buying?

over
115,000
members of the CII

over
22,000
members hold a chartered title

Chartered Insurance Institute, 2015

So, how is all this big data going to affect the everyday decisions that your people make?

It's a good point, for big data is little use to anyone unless it helps people make better decisions.

Right. Now, one thing that's dawned on me while we've been talking is that it's all very well talking about premiums and covers, but what happens when it comes to claims. Will insurance firms be using big data to decide whether a claim is covered or not?

Yes, they will. Each insurance firm will use their big data in different ways of course, but yes, they'll want to use it to help them make better claims decisions.

So if I had a claim, I can expect big data to have some sort of influence on decisions made on my claim. Is that right?

Yes, that's right.

But what I can't get my head round is this: you collect all this data, and use statistics to analyse it, and make decisions based upon that analysis....

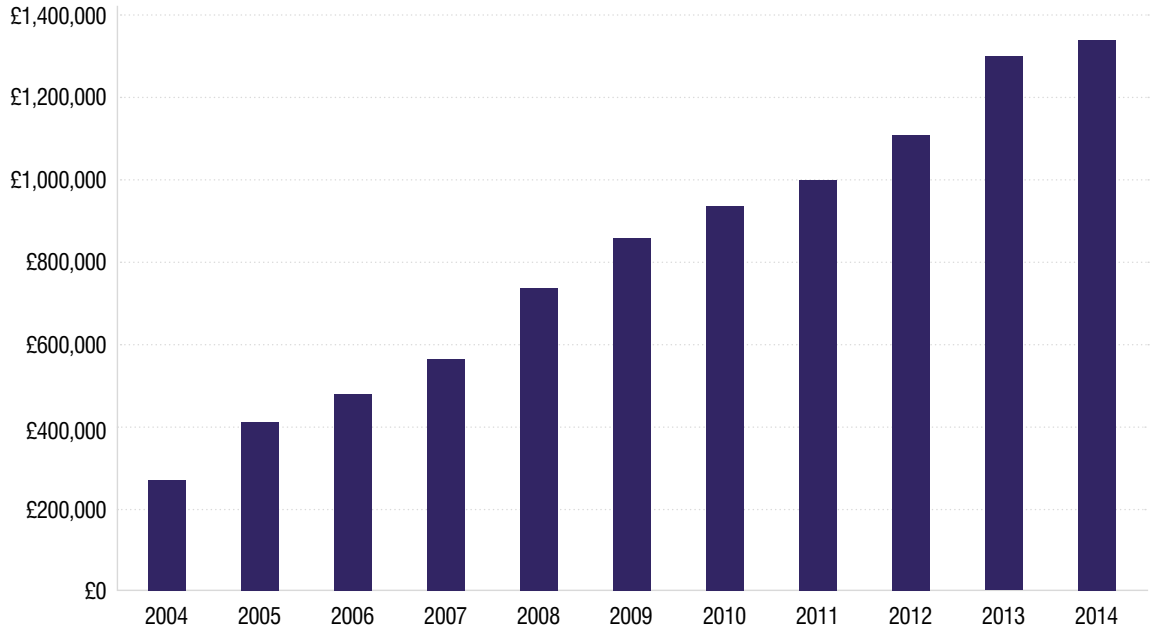
Yes, that's right.

...but I always thought that statistics was mainly about probabilities. You know, a 70% chance of this or that happening. How will insurance firms use all those probabilities inside big data to make decisions about my particular claim?

Well, it's likely that insurance firms will use big data analysis to get a general picture of what a claim like yours should look like and that will allow our claims experts to then look at your claim more closely to see how and why it differs. They'll then decide how to manage your claim based upon that type of analysis.

Value of detected general insurance fraud claims

Source: Association of British Insurers



Customer:

Give me some examples please.

Insurance:

Take claims submitted by fraudsters. We can use patterns of behavior typical of fraudsters to identify suspect claims and have them investigated more thoroughly.

Just a second. Are you saying that those fraud indicators won't be used to turn down a claim; that they'll still be a human involved in that assessment?

Yes, I think I can say that, although things are changing so much and so fast, I hesitate to say 'always'. I'd prefer to talk about what I anticipate happening.

And your other example?

Yes, a motor insurer would be able to take all the big data from that telematics box and reconstruct the accident, so making disputes much less likely. We can check if the impact was likely to produce the damage and injuries being claimed for. That's real insight.

I can see that it is. And it's also looking a bit like an automated claims decision, isn't it?

Yes, a bit.

Which is great if you're dealing with data coming straight out of a black box in the car, but that's not the same as data from all sorts of sources being used to make a decision on, say, a travel claim I've submitted. Can you reassure me that some statistic or other won't be used to accept or turn down my claim?

Well, it's difficult for me to speak for the whole market. Every insurance firm does things their own way: one will factor in something more than another. What I can say is that claims professionals pay out billions of pounds of claims each year – they take getting that right very seriously.

Yeah, but those claims professionals aren't going to be the ones doing all the computer programming that lies behind big data analytics, are they? How are you going to make sure that the computer programming that underpins all those claims decisions is going to be fair and balanced?

You're right, and it's something that insurance firms are looking into. You see, it's better for customers if insurance firms do this together, in a joined up way, so that everyone is working to the same standards, but there are laws limiting the extent to which insurance firms can work together and so it has to be a careful process.

So you're working on it, but you're not there yet. Is that right?

Yes, that's right. Remember that we're not jumping into big data with our eyes closed. It's been building over recent years and we've been taking clear, careful steps forward.

That's good to hear, but it would also be good to see something concrete on this from insurance firms at some point soon.

I'm sure you will.

Let's skip back for a minute to when you take out a policy. As you said, it's a market with lots of firms competing. They're all sucking in big data from all sorts of places: surely this means that a lot of premium and cover decisions are becoming automated?

You're right: they are. It's good that all that big data is helping us make better, quicker decisions, but as you say, more and more of those decisions are going to be automated.

Ok, so let's take a real life example. During a terrorist siege in Australia, demand for taxis spiked and in response, Uber's prices spiked too. A simple case of supply and demand, you might say. But Uber then came in for criticism, given that these people were trying to get home during a big, scary emergency. It's pretty much an ethical no-brainer, but Uber's big data didn't understand that. Of course, they apologised afterwards and all that, but the plain fact is that their analytics were programmed around numbers and ignored what everyone else saw as the right thing to do.

Now, insurance deals with everything from individual accidents to major disasters, which is great of course, but at the same time, that's what insurance is there for. So my question is this: are decisions about premiums and cover going to spike in this way when there's a big flood or something, or are insurance firms doing things differently?

Let me take all that in! Are you saying that you want insurance firms to programme ethics into their analytics?

I think of it more along the lines of insurers that use big data still being able to make decisions that are fair. And sometimes, numbers alone can't do that. Don't you see it that way too?

In many ways, yes, but remember, when something like a big flood occurs, we get a huge surge in claims. We might be faced with hundreds of decisions to make, both fairly and quickly. So if big data can help us with some of those decisions, that's something our customers really would appreciate. So I think there will be times when that mix of what you call 'numbers and humans' will vary.

Bear this in mind as well. However a decision is made, it's in our interests to get it right, for if we don't, it will just come back to us in some way or another: a lawyer or the ombudsman or whatever.

Customer:

Now that's an example I really understand. Something like a flood or storm must put you guys under real pressure.

At the same time, it brings to mind another thing that puzzles me. I know people who have never claimed, but the insurer is now saying that the data is indicating that they are likely to claim soon, so their premium has gone up by almost 300% in just one year, for exactly the same risk. They're sort of being predicted to make a claim. Now, are those sort of predictions fair, especially if it makes it difficult for some of these people to actually afford those bigger premiums?

Insurance:

That does sound a bit steep, but it's difficult for me to understand why without looking into it. Remember that insurance has to look at the likelihood of claims over more than just one year. What big data helps us to do is look a little bit ahead, rather than just in the past. Any business has to look forward: those that only look back usually end up having problems.

But it just doesn't seem fair that some of these people – they can be pretty vulnerable, you know – can come close to going without insurance because a prediction decided their 'never made a claim' status would be ending soon. I suppose the point I'm getting at is this: is insurance in danger of seeing fairness in far narrower terms than the public does?

You'd be surprised how much attention we pay to making sure our decisions are fair. Insurance firms have to be able to show that the decisions we make deliver fair outcomes to our customers. Now, do we get it right every time? Of course not, but we do try hard to.

What we've got to watch out for is that as big data changes what we know about a customer and how we make decisions about their premiums and claims, that we continue to get it right as often as before, if not better.

Remember that a lot of people work in insurance: they all have policies for things like house and motor, and they have claims too. So they're wanting to get things right, not just for themselves, but for the communities they live in as well.

Ok, that's a good point, but… Yes, another 'but'! The difference is that those insurance people actually understand more than people like me how good a premium is, or how wide the cover is, or how fair a claims decision is.

Now, you mentioned that a lot of people working for insurance firms are professionals. We both know that professionalism means something special, that it comes with responsibilities, so what does that mean for something like big data?

I think it's important. Insurance professionals have to abide not just by a code of ethics, but their work has to take account of the public interest as well. Those are long standing commitments, which reminds me. Remember that insurance people have coped with big changes like insuring inventions like cars, planes and the internet! So we can cope with a change like big data.

Well, yes, but remember that cars, planes and the internet were things that were happening out there in the real world, and big data isn't. It's happening within insurance.

I think it's a bit more joined up than that. But let me put a question to you for a change. What do you, as a customer, think is important about how insurance takes on board this thing called big data?

OK, let's have a think. How about this for starters!

First of all, by all means seek out all the advantages of big data, but don't go so far down the line that some parts of the public start to really lose out as a result. Make it as inclusive a move forward as possible.

Secondly, have some limits on what data you collect about us, and how you collect it. I know you talk about lifestyle underwriting, but that's your jargon from your agenda. There's a point at which I want some things to remain private, even if they're online.

Thirdly, be careful about how decisions are made. Don't forget that your customers are humans, not numbers. Those customers think of insurers as solid companies, not ones that bounce their prices up and down like a yoyo.

And if you want them short and sweet, call these points social justice, privacy and fairness.

OK, that's great. Thanks for those.

How about we meet up again this time next year for another chat?

Great idea. Let's keep the conversation going.

Decision making: Questions to consider

Here are some questions raised in this last part of the conversation.

1. Big data will make insurance more of a mystery for customers. What steps can insurance firms take to avoid losing trust amongst the public?
2. Big data will reduce the human element in many decisions made by insurance firms. What can firms do to ensure that human face is not lost from insurance?
3. Big data draws together many people from different disciplines. What can insurance professionals do to ensure that insurance principles are respected across such diverse teams?
4. Customers are in danger of being treated in different ways by each insurance firm's approach to big data. What is the insurance sector doing to ensure a more consistent customer experience?
5. Big data will result in many insurance decisions being automated. How will insurance firms ensure that such decisions remain fair?
6. While some customers will pay less as a result of big data analytics, others will pay more. What should firms do to ensure that fair access to insurance is maintained for all customers?
7. Predictive analytics will influence a wide range of decisions made by insurance firms. How can this be utilised so as to retain fairness?

18 Professionalism

Big data is expected to transform insurance, yet many of the ways in which this will happen are still emerging. As the conversation between the insurance practitioner and the customer illustrates, there are a number of important questions to be resolved, some of which deal with quite fundamental issues.

The CII believes that in times of change, professionalism will always have an influential role to play. The skills and experience that professional people have helps ensure that the right questions are asked. And the code of ethics followed by professional people helps ensure that options are weighed up in a responsible manner.

So what particular contribution should members of the CII play in the transformation that big data will bring to the world of insurance? As the influence of big data on insurance grows, many decisions will have to be weighed up and made. We cannot foresee all of those decisions, but we can highlight the way in which professional insurance people can help ensure that the decisions when made are good ones. Five such contributions are outlined in the box below.

These contributions rely on two particular skills: the ability to think critically about the issues at hand, and the ability to reflect upon the implications that could flow from a decision. Applying these two skills ensure that 'group think' is challenged, wider impacts are taken into account and better decisions are made.

Such skills will be important as insurance professionals engage with the wide range of experts connected with the development of big data. These skills can help counter-balance the tendency in such circumstances for the science of big data to overshadow the other dimensions of its influence.

Two issues in need of careful professional judgement

The way in which the insurance sector has been adopting big data has highlighted two critical issues that insurance professionals need to give careful consideration to.

The first is personalisation and the influence this could have on the way in which insured risk is pooled. The more big data allows underwriters to learn greater detail about what is being insured, and then apply that detail to rating decisions, the more the need for risk pooling is brought into question.

Some feel such personalisation of risk means fairer premiums, and to some extent it does, but there's more than this one dimension to fairness and the influence that personalisation could have on those others should be of concern to insurance firms.

The second critical issue is social sorting and the risk that all those data sources and algorithms could lead to discriminatory outcomes for some sectors of society. Insurance firms will of course feel very strongly that is not 'something we would ever do' and to a large degree, they're right.

The risk, however, is of an inadvertent drift in that direction, influenced by the way in which predictive analytics can create 'manufactured data'. Such data emerges out of a perceived set of statistical relationships and influences the availability, price and cover of the insurance in question. Social sorting has tarnished the reputation of insurance firms in the past and today's insurance professionals need to be vigilant that big data doesn't lead to its re-emergence.

Professionalism: Five key contributions to big data decisions

1. Ensure that the customer perspective is recognised in the decisions that insurance firms take around big data.
2. Ensure that decisions are taken against the full context of the issues at hand.
3. Recognise not just the short term implications of decisions around big data, but those in the mid to long term as well.
4. Ensure that decisions are taken not only according to what is permitted by the law, but also according to what is considered to be the right thing to do.
5. Encourage insurance firms to recognise the implications of their big data projects not only for those who will benefit from them, but for those who may be worse off as well.

Members of the CII are under an obligation to "secure and justify the confidence of the public". It's a pivotal obligation and forms the basis upon which the CII holds its Royal Charter. So how should insurance professionals fulfil this obligation against the backdrop of an insurance world undergoing significant change as a result of big data?

As the conversation between the insurance practitioner and the customer shows, some of the changes that big data will bring about could revolutionise the way in which consumers engage with insurance. The information fed back to policyholders with a telematics based motor policy allows them to learn about the good and bad points of their driving, and this has proved to be very popular, with many people logging on weekly to check on their driving. Identifying and delivering other such benefits is a focus of many insurance firms.

Yet the conversation also identified changes being brought about through big data that threaten to undermine confidence in insurance. The concerns were summed up by the customer as fairness, privacy and social justice. These are serious concerns that the public is articulating, and the insurance sector will need to articulate a clear and reasoned response in return.

It's a response that needs to recognise the public concerns, rather than sidestep or dismiss them. And insurance professionals have a key role to play in recognising and articulating those public concerns, acting as a voice within their firms for securing the public's confidence in decisions that their firm is taking. There are two ways in which this can be done:

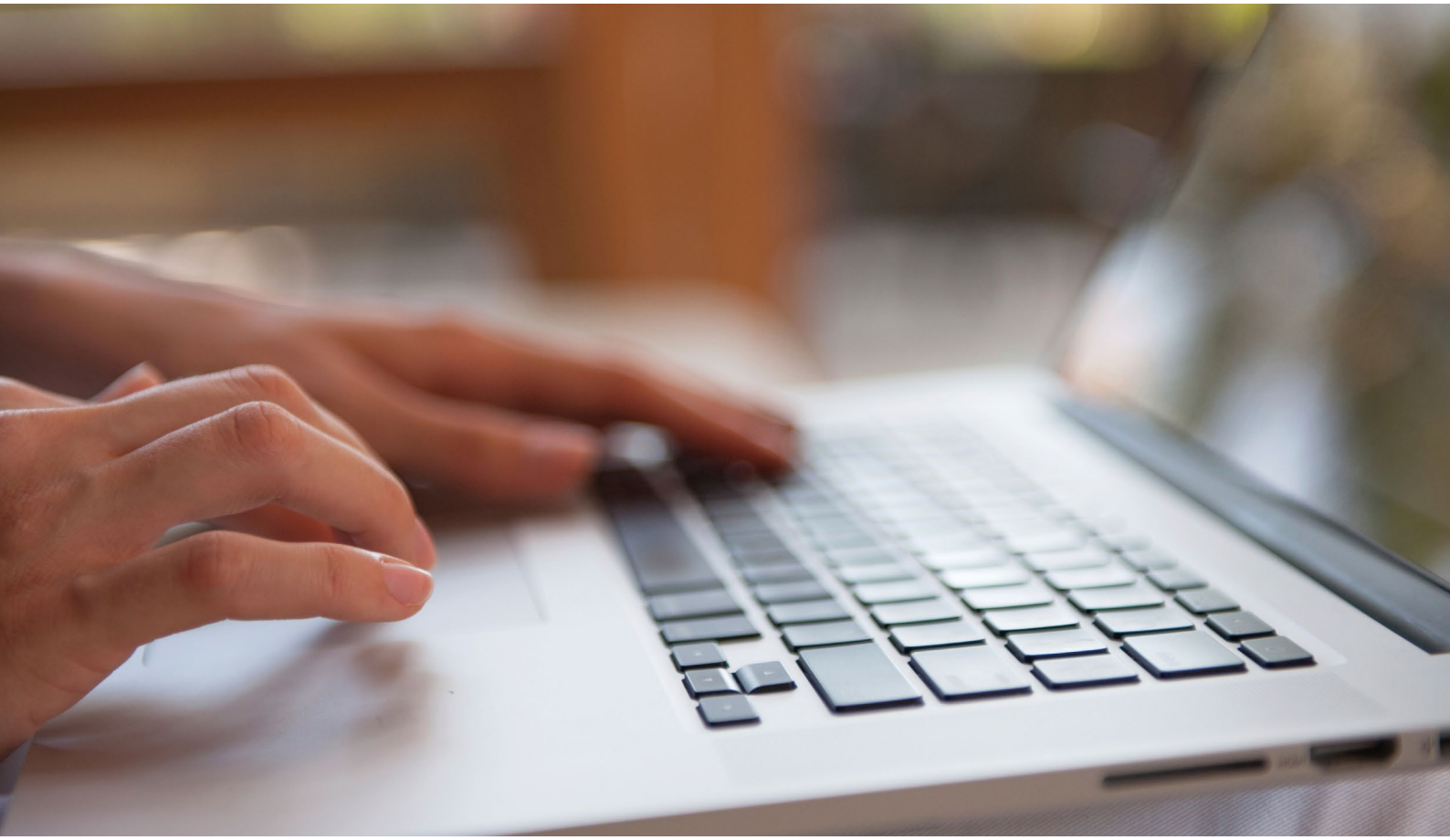
1. being prepared to challenge justifications for sidestepping the public's interests (such as 'everyone else is doing it'),

2. bringing out that public voice at the time of key decisions (such as 'how would this look when discussed with friends').

The changes to insurance that big data will bring about may well challenge public confidence in the sector. Yet for those very changes to deliver successful business outcomes (such as more people buying more insurance), public confidence is vital, for it is what brings customers to the market. The public have to experience outcomes, both individually and collectively, that they accept or at least recognise as necessary.

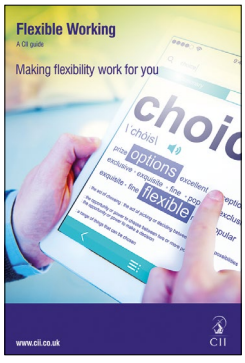
Insurance firms need to individually and collectively address those concerns before the big data changes become hard-wired into how the sector works.

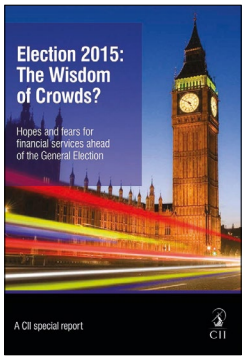
20 Useful links

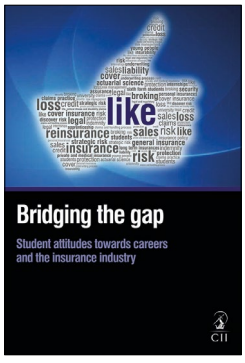


Other CII publications

The CII is committed to enhancing the reputation and standing of the insurance and financial services sector. To support this, the CII produces material covering a wide range of subjects including UK and European regulation, industry developments, legislation and regular public affairs updates.







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