Institute and Faculty of Actuaries

think

Revolutionising fairness to enable digital insurance

By **Duncan Minty**

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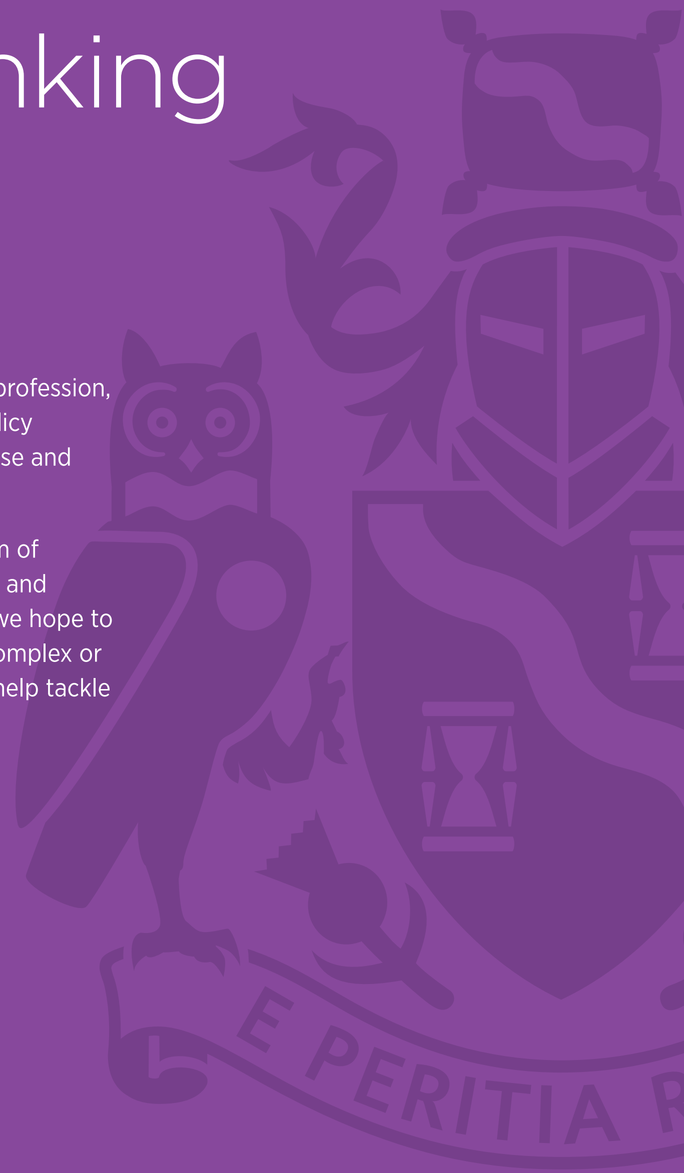
Independent thinking from the IFoA



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Our 'think' series seeks to promote debate on topics across the spectrum of actuarial work, providing a platform for members and stakeholders alike and sharing views that may differ from the IFoA's house view. In doing this, we hope to challenge the status quo, question the orthodoxy, and shine a light on complex or under-examined issues, thereby stimulating discussion and dialogue to help tackle issues in a different way.

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About this paper

Fairness has been called the dominant theme of 21st century financial services. Recent events in the pricing of personal insurance support that view. Yet how well is fairness really understood? The digital transformation happening in insurance is raising all sorts of questions about it.

With actuaries at the helm of much of this data-fuelled transformation, understanding those questions and how they link together is essential. The questions could well be as disruptive as the transformation itself. In particular, actuaries must prepare for fairness becoming recognised as a multi-dimensional issue weighed up by a multi-stakeholder audience.

Insurance has become embedded into key social and economic life stages. This success means that insurance has evolved, like auditing and accounting, into a form of common good. Both the market and the public have interests that need to be considered. As a result, the role of actuaries could well evolve from that of a helmsman to something like a coach.

Fairness needs to not just be understood, but organised as well, so as to achieve an equality of fairness that delivers digital insurance in a sustainable market that is trusted by the public.

There's a clear public interest then in how the digital transformation of insurance happens. Without fairness being fully factored into it, the sector risks public challenge and political interference. So fairness needs to not just be understood, but organised as well, so as to achieve an equality of fairness that delivers digital insurance in a sustainable market that is trusted by the public.

Common-pool resources offer a form of organisation and governance that could facilitate the realisation of this equality of fairness. Most importantly, they offer a framework within which multi-stakeholders can come together to explore and negotiate the best balance for these multi-dimensions of fairness. It sounds challenging, but it would not be the first time that the sector has organised itself to transform in a sustainable and trusted way.

Introduction

We are living in an age of data. The digital transformations that this data is powering are creating new forms of working and socialising, and informing how we travel, exercise and communicate. The public supports this digital trend, drawing all sorts of value from the technologies it adopts.

The insight and energy to build such digital technologies does not happen against a blank canvas though. It starts with that social activity called science and ends, ultimately, with what consumers embrace. So while the data and the analytics that underpin this digital trend come from technological developments, the impetus to those technologies being created and adopted comes largely from social developments that give them shape and purpose.

As those digital developments evolve, many of us enthusiastically adopt them. The smartphone is an example par excellence of this. So while the exact type of digital development may be difficult to predict, that we want digital developments is pretty easily predicted. We know that our lives can be better off in many ways as a result. And we expect our data to be used, in some way or other, to deliver value to us as we work, socialise, travel, and so on.

Delivering value through digital products and services has clearly been a hugely significant development over the last few decades. And this is a trend that will inevitably continue into coming decades. Of course, insurance is just one of many business sectors evolving in this way, but it is also one of the sectors being most profoundly affected by these changes.

There's no shortage of papers and reports on how insurance is being affected by these digital developments. So what's different about this one? It looks at digital insurance in relation to what has been described as the most complex question facing present-day financial services. And it proposes a means by which that question could be addressed, in order for that digital transformation to build engagement and trust with the public.

Delivering value through digital products and services has clearly been a hugely significant development over the last few decades.

Part one

The big 21st century question

Let's stick with that earlier point about digital being something shaped by social developments but at the same time powered by technological developments. There's always a great deal of interaction between social and technological developments, but again, without those social developments, nothing technological would survive and prosper.

In the first part of this paper, I want to explore a social issue that is taking shape around insurance and which I believe will profoundly influence the sector's digital future. It is what could be called a tectonic issue, in that it is capable, like one of the Earth's geological plates, of forcing everything in insurance into new alignments. That issue is fairness.

Actuaries working in insurance will feel they are familiar with fairness and understand how to reflect it in their work. And indeed, they do have great expertise in fairness, but still, I believe, a less than complete one. Fairness is more complex, more nuanced than most people in the insurance market realise. Consider this comment by Martin Wheatley, the then CEO of the Financial Services Authority, at a Mansion House speech in 2013:

"...for leaders today – both in business and regulation – the dominant theme of 21st century financial services is fast turning out to be a complicated question of fairness." [1]

Ten years on, that 'complicated question of fairness' remains largely unanswered. It has never really been shaped and weighed up to the extent that a dominant theme of 21st century financial services deserves. Until recently, that is. The last few years have seen the question of fairness in insurance pushed onto the sector's agenda. It feels like the time to address that question is upon us.

This leads me to the second part of this paper. In shaping and weighing up such a big and complex thing as fairness, the danger is that what comes out of that is then left unaddressed. The 'talk' is not followed by the 'walk'. This is often the case with complex social things – there's understanding, but 'business as usual' becomes a convenient fall back.

In relation to fairness, I believe the sector cannot afford to keep leaning back on business as usual. In addressing the questions emerging around fairness, it needs to equip itself with the means to achieve a consensus and deliver upon it. And in particular, it really does need this if it wants to avoid the path of more regulation or political interference.

What the second part of this paper outlines is a framework for how the shaping and weighing up of that complex thing called fairness might be incorporated into how the insurance market works. This is needed in order for all of us – actuaries, insurance people and consumers – to get the insurance market that we want.

Fairness is more complex, more nuanced than most people in the insurance market realise.

A change in asymmetry

We must first stand back from fairness for a minute and consider one of the profound changes that data is bringing about in insurance. We know that large and ever-growing amounts of data about us are being collected by insurers. This data is about the object at risk and about ourselves as the person with an insurable interest in it.

Actuaries have traditionally used various 'proxy data points' for their assessments, such as age and occupation. Now, ever more granular data is telling actuaries not just what you are, but what you do, why you did it and how you felt about it. This is bringing together, like never before, both the object to be insured and the character of the person insuring it.

As a result, the informational asymmetry between insurer and insured is changing. In the past, it was the insured who knew more about the risk than the insurer. Now it's increasingly the case that the insurer knows more about the risk than the insured. And this is not just in terms of the present. The analytics for handling all that data can now model with growing predictability what is likely to happen in the future with regard to that risk or the person insuring it.

Such predictive power can bring enormous benefits. Losses could be avoided or mitigated before they are realised. Homes could avoid being flooded; our health could be improved; driving could become safer. Yet other consequences of that predictive power are less palatable. Our homes, our health and our driving could become in some way uninsurable, for reasons we may not understand.

This change in informational asymmetry has implications for how the sector handles adverse selection. This has traditionally been a risk managed by the insurer. Might it now become more of an exposure for the insured?[2]

A central tenet of adverse selection is of course fairness. It is only fair, the argument goes, that higher risks pay higher premiums, and lower risks pay lower premiums. Any use of informational asymmetry (traditionally by the insured) to get round that is unfair and should be resisted.

So what about that swing in informational asymmetry from the insured to the insurer? Armed with increasingly powerful predictive analytics, the insurer could predict loss and damage, and adapt their premiums and cover for maximum returns. What questions does this raise about fairness? And how should they be addressed?

Forms of fairness

These are the types of questions that the digital transformation of insurance is raising. So how well equipped are actuaries and others in the insurance industry to weigh up that question? I said earlier that 'they do have great expertise in fairness, but still a less than complete one'. Let's explore that a little more.

Insurers' attention to adverse selection has provided perhaps their key narrative on fairness, especially in more analogue times. In these digitally transforming times, other aspects of fairness are being raised alongside it.

Selection and adverse selection are premised upon what is called the fairness of merit. Merit can be summed up as 'to attribute to each his or her due'. In a risk-orientated environment, in more analogue times, this focus on merit was perhaps understandable. Yet scholars of fairness have always seen merit as part of a wider picture of fairness. The philosopher Angie Hobbs put it this way:

"...each person is of equal worth and should have the opportunity – ideally, an equal opportunity – to access goods, but most of the goods themselves will be proportionally distributed, according to need in some cases and merit in others."[3]

In our context then, this says that insurance should be distributed so that everyone has the opportunity to access it. Indeed, outside of insurers (who favour merit), many people see it as the most important dimension of fairness. Some insurers are beginning to recognise the importance of access fairness and have joined with civil society groups to explore the issue and trial solutions. Yet such work is often positioned outside of mainstream operations, when in fact it should be positioned entirely within that mainstream, like any other aspect of fairness (such as merit).

What we're talking about here is equality of fairness

People need insurance

Mention has also been made of insurance being distributed according to need. This reflects the important role that insurance has built up in society in relation to key life events, such as getting a job (for which a car may be needed) and buying a home (for which life insurance is invariably needed).

If you're engaged in one of these events, you need insurance. Flip this around and the issue is whether insurance is always available. If it isn't, then people will struggle, either through detaching from, or failing to attach to, key societal endeavours. Some insurers are exploring this through initiatives around vulnerability, but again, this is often positioned outside of mainstream operations.

What we have then are three dimensions to fairness: access, merit and need. Some groups may prioritise one over the other, but the reality is that all three need to be accommodated in some way within the same decision system. They do not exist in isolation to each other.

Time matters

There are two further dimensions to fairness that need to be considered. The first is time. Clearly, the time period over which you consider a risk influences how you see that risk. When my house was hit by lightning in 2016, a timespan of hours or days presented a different view of that risk compared with a timespan of several years. It was exceptional in the former, less so in the latter.

As data narrows down timeframes into days, hours and minutes, real-time underwriting then faces the question of time fairness. 'Sure, that wasn't great driving yesterday, but nothing came of it and I've never done anything like that before' goes the argument. And it's hardly a new argument. It's a situation we have all faced and learnt to deal with as part of the life skills we learn from childhood onwards. We can't expect fairness every day or hour, but do expect fairness in the long run, over weeks or months, for example.

The time fairness of decisions can create tensions. Consumers tend to judge fairness across a wide timespan, while insurers increasingly judge fairness across an ever-narrowing timespan. So who is right? Perhaps that's not the correct question. Is it not more a question of how these seemingly competing interests can be accommodated?

Why think about fairness?

Clearly, how you see the question about who is right will reflect why you're thinking about fairness in the first place. Are you thinking about fairness because you're interested in understanding and upholding the dignity and rights of individuals? Or are you thinking about fairness in terms of an effective way of meeting some other end, such as reputation and returns?

If the end you are seeking is the assembly of a sustainable and profitable book of business, then you'll see the view that best fulfils that goal as right. If the end you are seeking is the fair estimation and distribution of insurance, then you'll recognise that some way of accommodating those fairness dimensions – access, merit, need and time – is needed.

What we're talking about here is equality of fairness. In other words, the process of arriving at an equitable balancing of the different dimensions to fairness. This will not be determined by market forces, but by a host of related parties. Academics refer to such parties as actors, as in this 2015 quote from the economic sociologist José Ossandón that insurance pricing is:

"...not only a matter of supply and demand, but rather the product of a wider range of actors, including regulators, lawyers, policymakers, members of parliament, consumer associations and representatives of the industry." [4]

Addressing that complicated question

We've moved then from actuaries and other insurance professionals using fairness of merit to help address selection and adverse selection to a multi-dimensional, multi-stakeholder negotiation. Yet should we really be that surprised about this? The renowned insurance philosopher Francois Ewald described insurance as both a moral and political technology.[5] If so, then perhaps those simpler times when it was just insurers who decided about fairness were the aberration. It's taken the digital transformation of insurance, and the questions it has provoked, to bring forward these different dimensions and stakeholder interests. As I suggested earlier, is that complicated question of fairness (as per Martin Wheatley in 2013) now ready to be addressed?

You will recall that I mentioned a fifth and final dimension to fairness. I'm going to explain it through one of the most important debates emerging in insurance at the moment. That is the debate about personalisation and pooling. Pooling is seen as the historic basis of insurance, with collections of risks brought together so that claims can be spread over insureds and time. Personalisation is different, being about tailoring the premium and cover towards the individual insured. These are both high-level descriptions but sufficient for our purpose here.

There are two interesting points about this debate. Firstly, advocates of both personalisation and pooling claim their approach is fair. Secondly, current volumes of data (so called big data) are enabling ever-more granular levels of risk differentiation.

The first of these two points tells us that this debate about the evolving shape of insurance isn't a binary one, with one side right and the other side wrong. There's a middle ground here that is, in my opinion, both significant in extent and full of opportunities for achieving that equality of fairness. The second of these two points tells us that this is a debate that needs to be attended to sooner rather than later, given the way in which underwriting, claims and counter-fraud decisions systems are evolving.

Hold on, some of you will say. Is everything really so interpretable, so malleable? My professional training seemed so full of certainties. Where has that gone? Well, in my opinion, insurance never really was full of certainties. It is, as Francois Ewald says, both a moral and political technology. It is, as José Ossandón put it, influenced by a wide range of stakeholders.

Merit is not fixed

Consider these words from the renowned British actuary Charles Ansell to a Parliamentary committee in 1844:

"My own opinion, for a long series of years, has been that female life, as it exists on the books of insurance offices, was very much worse indeed than male lives, amounting almost to a motive for refusing the insurance of them at all; and I believe the experience of others has been the same." [6]

What this tells us is that merit is not something that is fixed and resolute, but a moral and political interpretation, shaped by what you see in what you look at. It is one that evolves over time, influenced by wider societal views, and it will continue to do so. We need to be open then to the rethinking of interpretations, especially when the sector is undergoing significant change, as it did in Victorian times, and as it is doing now in these digital times.

Consider as well the case of flood insurance in the UK. As data allowed the market to move rapidly towards ever more granular underwriting of homes, those in areas seen as high flood risk experienced rapid rises in premiums and excesses. The consequences of this development worried politicians and, as a result, a big risk pool – Flood Re – was created.

What this tells us is that, on occasions, politicians are prepared to exercise their authority to influence the shape and direction of insurance. In recent years, we have seen how consumer groups have also been willing to be similarly assertive. As insurers have found, this can be more than a little disruptive, especially for the delivery of that digital transformation and all the time and resources that it demands. Wouldn't it be better to address this complicated question of fairness in a proactive way?

A fifth dimension to fairness

One of the ways in which I believe insurers will be encouraged to rethink fairness is around the individuality of merit. It's all too often written in relation to the interests of individual consumers: for example, 'Why should you pay for the claims of your accident-prone neighbour?'. It can sometimes feel like too much of an appeal to self-interest.

Research has found that people often make decisions that go beyond their own self-interest, instead reflecting wider community and social interests. This can happen even in situations where those involved are not known to each other. It's not altruism, but a sense of what researchers call 'strong reciprocity', namely:

"a predisposition to cooperate in a collective enterprise, and a predisposition to punish those who violate cooperative norms, both of which are individually costly but conducive to strong social capital." [7]

Why is this so? Part of this predisposition to cooperate may come from 'a shadow of the future' – the sense that eventually we too could be at the receiving end of others' self-interested behaviour. We tend then to respond with a sense of cooperation instead. Another reason may come from trust – we give in order to engage and be trusted. This is not unconditional – we're brought up to read all sorts of cues and signals on trust, but also to recognise that we have more in common than we often think, that we can often be better off by acting together.

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Some people may be thinking this all feels rather old fashioned. Surely, they say, data and analytics can replace those judgements with lots of real actionable insight. Well, the opposite might actually be the case – the deluge of information can often exceed our capacity to process it and we fall back on our intuition and judgement in relation to how we engage with others.

Experiments by behavioural economists have found clear evidence for strong reciprocity. Studies show that those who act purely in self-interest are often in the minority – most people seek some level of cooperation, even at a cost to themselves.

I call this the fairness of crowds and I think of it as perhaps one side of a coin that has fairness of merit on the other side. If you think of the two working in parallel, in the context of the personalisation and pooling debate that I mentioned above, I believe that people support some personalisation (it's the way society is moving), but only to the extent that it doesn't erode some sense of the solidarity, the 'working together benefit' that is inherent in pooling. Francois Ewald again:

"Insurance provides a form of association which combines a maximum of socialisation with a maximum of individualisation. It allows people to enjoy the advantages of association while still leaving them free to exist as individualisation." [8]

Balancing all this

We've gone then from a single and dominant dimension of fairness (merit) to five dimensions: access, merit, need, time and crowds. This raises an obvious question: how do we balance them? How can equality of fairness be achieved?

There will not just be one equality of fairness that applies across all markets. It will vary, in the same way that the culture and norms of each market can differ. Consider the very different outcomes from the introduction of telematics-based motor underwriting in Italy and France. The former took to it with enthusiasm; the latter did not.

We need a framework then to guide the debate as to how a market can bring together the different dimensions of fairness, so as to arrive at an accord with politicians and consumer groups that delivers the most for everyone from this digital transformation of insurance.

Note that I talk about a framework for guiding the debate. This will not be a framework that gives us the answer, but a framework that organises us (actuaries and others in the market) for finding that answer (or as is more likely, the answers).

Hold on though, some people will say – 'Doesn't this sound like a lot of conceptualisation and talking? Why not just get on with business as usual and let the market find the best answer?' That's putting more faith in the market than the public seems prepared to give. Take these two examples.

Firstly, independent research published in 2020 by the Association of British Insurers found a great deal of public mistrust in how insurers handle their data. The market is not trusted enough to do digital fairly.[9] Secondly, questions about fairness have been at the centre of three significant challenges to the market since 2018 – the loyalty penalty,[10] the poverty premium[11] and the ethnicity penalty.[12]

> Better then to engage with the debate, rather than avoid it and have it come back and bite you later.

Engage with the debate

In my opinion, the days of insurance being left to look after its own arrangements are over. There are all sorts of groups outside the market that want to understand and influence the impacts that are emerging from its digital transformation. 'Leave it to us; we're the only ones who really understand it' holds little water now.

Better then to engage with the debate, rather than avoid it and have it come back and bite you later. That's what happened with personal lines pricing and the loyalty penalty, the outcome of which was a ban on what had been the market's main approach to pricing. I don't think the market wants to go through that again.

As I said at the beginning, fairness is a tectonic issue for insurance. How it is handled (or not handled) has all sorts of ramifications for the market. The debate I am encouraging needs to deliver some level of common understanding of those ramifications, from which steps towards a solution can then be taken. The problem though is that all too often the market handles these sorts of situations in a top-down way, along the lines of: 'Here's how we need to do fairness – please support it'. There's insufficient engagement with others.

That doesn't work anymore. Fairness is not something owned by the market, decided by the market, shaped by the market. It is owned by everyone with a stake in what insurance does, such as consumers, society, regulators, trade bodies, professional bodies, politicians and, of course, market firms. In their different ways, each of these wants to see its input respected.

The price for embeddedness

The reason for this wider ownership is down to the success with which insurance has embedded itself into everyday life. Our jobs, homes, holidays, interests, communities and much more are intricately linked with the availability and affordability of insurance.

This embeddedness is happening not just at a personal level but at a corporate and governmental level too. This makes the fairness of insurance an issue of increasing interest for the political establishment. That hasn't always been the case, of course. Five years ago there was little realisation of this. Events have changed that. Flood Re signalled to politicians the possibility that the insurance everyone had been taking for granted may not always be available. The loyalty penalty compounded this, signalling to them that insurance pricing can raise questions about fairness.

If the embeddedness of insurance has been a driver for personal and economic development, then there has, I believe, been a growing question about what will be the impact on development if that embeddedness can no longer be taken for granted. Francois Ewald again:

"...the stability of insurance institutions is of political interest, because they provide a security to people that the state would otherwise have to provide." [13]

In my opinion, this creates a growing imperative to address what happens at the intersection of the digital transformation of insurance and the fairness of insurance. At the moment, there's some realisation of this. What is lacking is a framework within which people can come together and engage with the linkages between the digital transformation and fairness narratives. This is what we will consider in **Part two**.

What is lacking is a framework within which people can come together and engage with the linkages between the digital transformation and fairness narratives.

Part two

Let's start with a look at the implications of insurance's success at embedding itself into everyday life. It's not the only business-related function to have enjoyed such success.

Consider the audit system. It's part of the corporate governance arrangements at the firms many of us work for. It's also important for producing reliable information on corporate performance for the stock market and pensions sector. Without it, the extent to which we could rely on the reports and accounts of firms would be severely diminished. So while auditing is largely undertaken by private firms, the audit system itself has become something upon which the public relies.

Then there's the accounting system. We rely on it for the quality and consistency of reports on financial performance. Again, it's largely undertaken by private firms, but the accounting system itself is, in a way, owned by society.

What I'm suggesting is that while insurance consists of private firms competing for business, the market itself has evolved to be less of a private asset and more of a public asset. One way to think of this is by using a theatrical analogy: the actors are private but the scripts and the stage have become public.

While insurance consists of private firms competing for business, the market itself has evolved to be less of a private asset and more of a public asset.

The market as a public asset

For sure, the scripts and the stage are hugely influenced by those private actors. Indeed, this is self-evidently the case in how the digital transformation is evolving, in terms of the innovation and entrepreneurship that those private actors bring. Yet at the same time, the public want to have their say about how fair those scripts are and how accessible that stage is.

Hold on, some of you may be thinking. It's the private firms who wrote the scripts and who built the stage (to continue the theatrical analogy). Surely it's for them to decide how both evolve. And there's some truth in that, but not enough. The embeddedness of insurance in everyday life, and its importance to economic development, have resulted in its market becoming more of a public asset than a private one.

The extent to which it is now regulated is testimony to that development. It has been many years since private firms in the insurance market were free to do whatever they wanted. The public expected better from them. Yet it also seems self-evident that the fact that so much regulation is still needed points to all not being well in that regard. More on that in a second though.

What can we draw then from this consideration of how accounting, audit and insurance are conducted? How can we represent these complex mixes of the private and the public? Where can we look for a framework within which people can come together and engage with the two narratives of digital transformation and fairness?

Looking beyond the regulator

Before we address those questions directly, I want to consider a few points.

Firstly, the role for regulation. It's 25 years since the launch of the Financial Services Authority. In that period, the rules that insurers must abide by have become broader and deeper. Yet, despite that, regulators have only gone so far with regard to fairness. Until a few years ago, the regulator left it to the market to decide what a fair price was. It took a challenge from a consumer group to cause them to rethink that boundary. Since then, that pressure has continued through reports on the poverty premium and the ethnicity penalty.

It is my understanding that the regulator was pushed into considering the fairness of insurance pricing and has little appetite to look wider than the issues raised by the 'loyalty penalty'. I believe this is largely because it sees such issues as essentially about social policy, something that it says its remit doesn't cover. This is despite it having had for many years a key principle that expects insurers to treat their customers fairly. The problem has been that insurers have been interpreting this more around how to treat individual customers and less as customers in the round.

What we have then is a regulator who is unwilling to give attention to the wider implications of fairness that we discussed earlier. This is not to discount the regulator altogether – it plays an important role, but one that it has kept fairness out of. Instead, for a narrative framework with which to consider fairness, we need to look elsewhere.

Secondly, the framework we are looking for can't be top-down. It can't be something imposed on the sector by a well-meaning authority, even if it may have consulted with interested parties. That's because, firstly, there are too many interests wanting to have their point of view respected, and secondly, trust in the sector is not strong enough. What is needed instead is a framework within which a narrative for collective negotiation and action can be developed. The framework needs to be one within which those interests can come together to create a new narrative for how fairness can be fully incorporated into the digital transformation of the sector.

Thirdly, fairness is a limited resource. If for example, I want more consideration for merit, then other aspects (such as access, need, etc) may have to forego something. That's why I referred to collective negotiation and action above. There needs to be some form of balance created around the different types of fairness that enables the private actors on this public stage called insurance to deliver a transformation that is digital, sustainable and trustworthy.

Common-pool resources

The framework that I believe could provide a narrative structure for how digital insurance approaches equality of fairness is that of common-pool resources (CPRs). Common-pool resources are self-organising and self-governing forms of collective action. They are designed to deal with an open-access problem, in which people obtain more benefit from acting together, but in which there are temptations to act independently.

Let's convert that into the context we've been talking about here, namely fairness and the digital transformation of insurance. Fairness is a resource to which everyone should have access, but it is also one for which there needs to be some 'give and take'. This is our open-access problem.

Recent years have seen the insurance industry's handling of fairness being challenged in a number of ways. This has given rise to those questions we looked at earlier, namely whether fairness of merit needs to accommodate in some way issues around access to insurance and vulnerability. In other words, insurers have been acting independently to-date, but are being challenged to work with others who believe that additional dimensions of fairness need to be factored in.

There is no 'common-pool resource' model that can be plugged into insurance and which, when switched on, will solve the equality of fairness question. That's because every CPR is different and so needs to be approached in relation to the context in which it is being considered. Each CPR comes to be organised and governed in relation to that context.

Our context is that of fairness in insurance and how the different dimensions of fairness can be accommodated equitably within an insurance policy (the fair policy). Note that I'm not talking here about insurance per se, or pricing per se, but the fairness of the policies that come out of them. This is not about 'how to replace regulation', but how to go beyond a regulator with little interest in addressing such a question. It is about filling a vacuum that the digital transformation of insurance is in danger of running aground.

The vacuum to be avoided

At the moment, the reality of that vacuum is becoming more and more real every year. It is a vacuum being created by the pulling, in differing directions, of two world views. One is of the individual rationalist who sees fairness in terms of our responsibility for our individual behaviours. So for example, 'Why should I pay for the claims of my accident-prone neighbour?' The other world view is that of the pool of solidarity, in which insurance is available to all and everyone on similar terms.

Neither of these two world views are sustainable, even in a society being digitalised, and especially in an insurance market being digitalised. That's because the costs to sustain each world view, and the benefits we would each derive from them, are either too volatile for, or too unresponsive to, the way we live our lives.

Another way to see this is through two social phenomena: one that has emerged in recent years and another that is enduring. Personalisation is the new social phenomenon that seems unlikely to go away. And strong reciprocity (our predisposition to cooperate) is an enduring social phenomenon that shows no signs of diminishing.

To put it another way: we seem to want some level of personalisation, but not so much that it removes pooling. We want insurers to deal with our 'accident-prone neighbour', but in a way that we would find acceptable if we ourselves, for whatever reason, happened to become that person.

Collective action

Thinking of fairness in insurance as a common-pool resource opens up a narrative framework that resonates with much of what I've been talking about here. I'm going to look at elements of that framework through the work of Elinor Ostrom and in particular, her book *Governing the Commons: The Evolution of Institutions for Collective Action*.[14] Ostrom was a political economist who won the Nobel Prize for Economics in 2009 for her work on governing the commons.

It's worth noting early on that Ostrom's work concentrates on natural resources in environmental systems, for example fisheries and groundwater basins. Here we're going to talk about fairness as a form of natural resource of a financial system. So we'll be doing some extrapolation by considering fairness in insurance as a common-pool resource, requiring some form of organisation and governance to support the digital transformation of the market.

So what type of resource is fairness? How we answer this is important if we're to use the idea of common-pool resources to explore fairness further. We've said that it is a natural resource of a financial system and also that it is limited. How else can we describe it? The *Oxford English Dictionary* describes fairness as 'impartial and just treatment or behaviour without favouritism or discrimination'. Can we use 'treatment or behaviour' to shape fairness into a form of resource?

That doesn't seem feasible: treatment and behaviour are not terms usually associated with resources. Instead, we can think of insurance as a resource system that produces fair policies as its resource units. And by fair policies, I mean policies that are priced and available within a resource system that respects those different dimensions of fairness. What we are aiming for is the production of as many fair policies as possible from a sustainable and trusted insurance system.

Our challenge then is to find the balance that delivers:

- As many fair policies as possible – the pricing, cover and availability of which respect notions of fairness in terms of merit, access and need
- An insurance system that is financially sustainable as a market
- An insurance system in which the public can put their trust over the lifetime of their insurance needs
- An insurance system that respects consumers' predisposition for solidarity.

> Thinking of fairness in insurance as a common-pool resource opens up a narrative framework.

So how do we do this? It's not easy, as commons scholars working in other fields have shown. Some CPRs work and others fail. Ostrom identifies three issues at the heart of the 'how do we do this' question:

- The problem of arranging the organisation and governance needed to obtain the long-term collective benefits that the CPR offers
- The problem of making credible commitments to sustain the CPR, when a temptation will always exist to break that commitment and gain some short-term advantage
- The problem of how such commitments can be monitored from within the CPR so that everyone participating in it has sufficient confidence to continue with their own commitment.

Meeting the challenge

Insurance has what, in CPR terms, is referred to as a collective action problem. Trust in insurance is low. Two world views (personalisation and pooling) offer differing directions for a market that is fundamental to society, both today and into an increasingly digital future. Competing interests are exerting their power to wrestle the market in their direction.

Remember what José Ossandón said: that insurance pricing is *"not only a matter of supply and demand, but rather the product of a wider range of actors, including regulators, lawyers, policymakers, members of parliament, consumer associations and representatives of the industry."* If you turn this around and apply it to fairness, then these 'actors' need to collectively work together so as to arrive at an insurance system that is trusted to deliver, and can sustainably deliver, fair policies.

They need to come together to agree the appropriate organisation and governance, to make credible commitments and to mutually monitor them. The organisation gives shape to the commitments, which in turn give shape to the monitoring. Turn this perspective around and it's clear that without monitoring there would be no commitment, and without commitment there would be no organisation.

By now, some of you may be thinking that the insurance sector as we know it just isn't capable of organising itself in this way, isn't capable of making commitments to sustain it, and isn't capable of mutually monitoring itself. Let's address such concerns on two levels.

Firstly, the level of common-pool resources in general. Sometimes CPRs turn out to be unsustainable and so fail. Yet at the same time, others have succeeded, even in the face of considerable challenges. Understanding why both scenarios happen is at the heart of Ostrom's work.

The second level is that of insurance itself. Historians of the growth of institutions, such as friendly societies, have found that similar challenges around organisation, commitment and monitoring were faced and overcome.[15] The rapid expansion of insurance in the Victorian period revolutionised the insurance market, reaching people who previously had little to no access to insurance products. Sounds a bit like the transformation that digital insurance is hoping to achieve, doesn't it!

My point is that collective-action problems have been solved before, and will continue to be so. And the insurance market has shown in the past that it is just as capable of doing so as others. So what are the conditions under which collective-action problems have been solved?

> Insurance has what, in CPR terms, is referred to as a collective action problem.

Understanding the status quo

This is not the place to go into great detail, but it is worthwhile taking a quick look at two of the more fundamental conditions.

All insurers currently operate in what could be termed the status quo situation. A change away from the status quo will involve various benefits and costs. This means that an early condition for addressing the collective-action problem relates to the availability of information about those costs and benefits, both of maintaining the status quo situation and of choosing some level and shape of alternative. Without such information, no organisation can take place, no commitments made or monitoring done.

I believe we are currently seeing a lot more attention being given to the benefits and costs relating to the insurance system's provision of fair policies, both as it is and how it could be. There's definitely more work needed, but the information assembled so far is pointing towards there being a strong case for commissioning that 'more work'. When commissioning 'more work', the key factor is that what is produced has to be trusted by all parties involved. That's certainly something that needs to be negotiated early on.

Transforming with fairness

Another fundamental point to consider is the cost of transforming the insurance system so as to deliver a sustainable and trusted level of fair policies. Such change doesn't come free. Yet at the same time, not changing has costs as well.

Clearly the insurance sector is undergoing a digital transformation and so is incurring transformational costs like never before. My point is not whether further transformation costs should be added on in relation to fairness, but that the sector is showing a willingness to transform and to bear the costs of that transformation.

What the sector has not done so far is to understand just how much the success of that digital transformation could be tied in some way to the question of fairness. I believe the two are tied, and in more ways than the sector currently understands. The effect of this is that insurers could well incur future costs (or put predicted benefits at risk) relating to this digital transformation due to an insufficient understanding of how it is tied in with issues around fairness.

> What is needed is collective action, based upon shared commitments.

Incremental transformation

In overall terms, the digital transformation of insurance started off as a series of diverse initiatives to benefit from data and analytics. Since those small beginnings, the pace of change has picked up and developments have become more widespread. Something similar can help build the transformation in how the insurance system delivers fair policies in a sustainable and trusted way.

It can start by just one player signalling to others like it that it intends to organise a commitment and to encourage those others to consider doing something similar. If those signals work then a series of mutually beneficial steps follow and a sense of collective action 'problem solving' develops. Once those initiatives become sustainable and part of how those firms work, they are extended within those firms, as well as being replicated by other firms. The process therefore is incremental, sequential and self-transforming. This is not a transformation that will happen through large symbolic investments. In Elinor Ostrom's experience:

"Individuals frequently are willing to forego immediate returns in order to gain larger joint benefits when they observe many others following the same strategy." [16]

The longer-term sustainability of the insurance system's delivery of fair policies should still not be taken for granted. Ostrom goes into some detail about the factors that help organisations develop a sustainable common-pool resource. Those are, however, outwith the scope of this paper.

External involvement

Some of you may be thinking that this is simply an extension of the sector's regulations on fairness, dressed up in 'sheep's clothing'. That is not the case at all. In the main, the organisation and governance of a common-pool resource succeeds when external authorities stand back, rather than become engaged. What is needed is collective action, based upon shared commitments, to protect fairness as a natural resource that the digital transformation of the financial system relies on for long-term trust and sustainability. It is very much a 'done by you' thing, rather than a 'done to you' or 'done for you' thing.

A role that external authorities can sometimes play in the organisation of common-pool resources is as a provider of forums in which difficulties or blockages can be addressed. In some CPRs, these are courts of law, in which trial cases are heard in order to clarify existing rights and test governance rules. In other CPRs, these may simply be regular forums at which the extent of compliance is weighed up and exceptions reviewed.

Having said that external authorities should stand back, it is important to add that for a common-pool resource to succeed, external political or regulatory authorities should not promulgate policies or behave in ways that undermine the development of a CPR, either by swaying its costs or affecting the ability to participate in it. They need to be supportive, but at a distance.

How likely is success?

The successful organisation of an insurance system to yield up fair policies is not guaranteed. As I said earlier, some CPRs fail, despite the best efforts of those involved, while others are successful, despite a variety of challenges.

Designing and adopting new organisational arrangements for solving collective-action problems are difficult tasks. This is the case no matter how much those involved pull together and no matter how well informed they are. Ostrom sums up the problem in this way:

"The benefits and costs have to be discovered and weighed up by individuals using human judgement in highly uncertain and complex situations that are made even more complex to the extent that others behave strategically." [17]

By strategically, Ostrom is referring to cases in which parties try to act on their own, rather than collectively. She goes on to set out six characteristics that increase the likelihood of participants adopting the incremental changes needed to sustain a CPR. I'll phrase them in relation to what we're discussing here: an insurance system that delivers fair policies in a sustainable and trusted way.

1. Most insurers in the system need to share a common judgement that they will be harmed if they do not work together to deliver a fair insurance system
2. Most insurers in the system expect to be affected in similar ways if they do not work together to deliver a fair insurance system
3. Most insurers value being part of a fair insurance system
4. Insurers in the system face manageable information, transformation and enforcement costs
5. Most insurers share generalised norms of reciprocity that can be used to build the initial 'social capital'
6. Those participating in a fair insurance system are relatively small and stable.

Does the UK insurance market meet these conditions? To be honest, I don't think so, at least not yet. Is the market nearer to meeting them compared to, say, five years ago? Absolutely.

> The tipping point for the need for this framework is probably nearer than most think.

Making success more likely

The next question then is around what might bring these conditions nearer to being met. The loyalty penalty report has brought the market closer than it was five years ago to meeting these conditions. Should the poverty premium and the ethnicity penalty reports result in impacts on roughly the same scale as the loyalty penalty, I believe we'll see the market move much nearer to meeting those conditions. This will be down to a mix of external political pressure and the realisation within the market of the need for change.

Added to this are a small number of UK insurers who may well be doing some work on the influence of fairness on their relationship with customers. Next to them are some insurers who are sympathetic and, to an extent, have similar attitudes to reciprocity within the insurance system. They are not, however, fully aware of those benefits and costs I mentioned earlier. Together these form a bank of 'social capital' upon which the wider sector might need to draw at some point.

If the outcomes of the loyalty penalty, poverty premium and ethnicity penalty reports result in the insurance market being judged to be systemically unfair in relation to the pricing, cover and availability of its products, then conditions one, two and three will come much closer to being met. With so much information at the sector's fingertips, political pressure to share it in order to address that systemic unfairness will cause condition four to be met.

Will the market then meet condition five – sufficient reciprocity to agree some form of common-pool resource in relation to fairness? I do not think this is beyond the sector's grasp. It has two professional bodies with wide membership across the sector. There is a culture across the sector that is capable of adaptation if the 'writing on the wall' points to that being a good idea. And there are a lot of good people working in the sector. So the tipping point for the need for this framework is probably nearer than most think.

Part three

What does this add up to?

The way in which insurers have handled fairness is being challenged. Reports on the loyalty penalty, the poverty premium and the ethnicity penalty have been the public face of that challenge. And rather than being simply assertions, those challenges are being supported with evidence of the outcomes that are occurring.

Alongside this is a growing number of questions about the implications of the sector's move towards personalisation. Will it turn out to be as fair as proponents suggest? It's a significant trend, but if it is taking place against a backdrop of low trust in the sector, will the public support it?

This is the 'harm situation' that seems to be emerging. Insurers are in danger of being labelled as unfair, and of this being picked up in political circles. Most insurers will be affected by this. And as that harm situation extends from personal lines into life and health, the more likely it is that political interference occurs. The stakes around this 'harm situation' are only going to increase.

At risk will be the success of digital transformation programmes and the various benefits that insurers want them to deliver. If consumer groups continue to highlight poor consumer outcomes because of this sector's overall digital transformation, then it is likely that consumer and investor confidence in those benefits could collapse.

The danger is that the sparring starting to emerge around these issues will, for want of better options, move into the trenches. Discussion will be overtaken by the trading of accusations, with political lobbying seen as the only way to come out top. In the end, the result for either side will turn out to be too much of a pyrrhic victory.

What I am proposing is a means by which the core issue here – fairness – could be explored and discussed without recourse to the trenches. In **Part one**, I outlined the multi-dimensional and multi-stakeholder nature of fairness. I set it against the context of insurance's embeddedness in society – a success which has consequences in terms of social and political expectations.

In **Part two**, I outlined a framework within which those multiple stakeholders could discuss and negotiate those multiple dimensions. In other words, a way to facilitate the discussions from which a path towards a solution can be agreed, tested and progressively built. Ostrom's work on common-pool resources seems to offer such a framework. There are rough edges around its suitability, but there is also a lot that fits.

Some may think it impossible that a large and sophisticated insurance market would come together to address something like fairness through the resetting of dials and levers in relation to their core ways of doing business. Yet this would not be the first time. The preceding centuries have all seen the insurance sector do just that.

The will for doing so in the past came from a mix of opportunity and risk. With regard to the present day and fairness, the opportunity is a digital transformation that becomes more financially and reputationally sustainable. The risk is that the financial and reputational gains will be lost because the sector becomes overshadowed with accusations of unfairness, and is unable to manage the political pressure to reform.

Actuaries will have an essential role to play in addressing both that opportunity and that risk. This starts with what I referred to earlier under the section 'Understanding the status quo'. Actuaries need to give shape to the benefits and costs of sticking with the sector's status quo position on fairness. And they need to understand more about how the sector's digital transformation depends on the public seeing it as fair, for themselves as individuals and for society overall.

> The opportunity is a digital transformation that becomes more financially and reputationally sustainable.

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