AI – The Potential for Automated Advisory in the Insurance Industry

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Executive summary

Insurance is often regarded as a face-to-face business, built on personal relationships, be it personal lines where the client relies on the advice and assistance from an agent, or commercial lines where the client works with a broker to get the right coverage at the right price. Insurance is also often regarded as conservative and a technology laggard, but technological advancement cannot be held back forever, and with consumption behaviour evolving at speed, disruptive change is coming to our industry, by push or pull.

A "perfect storm" of evolving technologies, consumer expectations and an industry drive to add value and growth (through filling the advice gap created by dis-intermediation) is leading the market to consider *robo advice* – automated advisory driven by **Artificial Intelligence** (or "AI").

AI has the potential to address consumer needs and grow the insurance business. If done right, *robo advice* can help to address some of the pervasive consumer distrust in insurance. Certain knowledge-based roles in our industry may well be at risk from AI, throughout the value chain, but the opportunity exists finally to offer a consumer-centric solution to the marketplace, allowing the industry to move **from price to advice**, adding value to the customer engagement.

This discussion paper examines the potential for AI in the sales process, outlining some ideas about what is possible. We explore in particular what this means to consumers, because they hold the key to what happens, and we provide some examples of what is available in the marketplace today. There are certainly also applications for post-sale activities, too – claims in particular.

Undoubtedly, AI can significantly disrupt business as usual for insurers; those who do not have a strategy to deal with AI (be it to adopt AI, or sufficiently differentiate from AI-based services) may find their business at risk.

We invite your own thoughts on this intriguing subject; do join the discussion at the ACORD LinkedIn group (https://www.linkedin.com/groups/3210754).

Table of contents

Table of figures

Introduction

Artificial Intelligence (or "AI") is the study of how to create computer systems capable of intelligent behaviour. The field was founded on the hypothesis that a central property of humans, human intelligence, can be so precisely understood and described that a machine can be made to simulate it. This raises various philosophical issues about the nature of the mind and the ethics of creating artificial beings, and AI has been the subject of both tremendous optimism and vivid fear-mongering. On a practical level, though, computer scientists have been making steady progress and AI is today an essential part of the technology industry, finding its way into many products already in everyday use (e.g. Apple's Siri), and shouldering the weight of expectations for many as-yet unsolved problems. A recent announcement by Deep Mind, now part of Google, saw an AI system defeat the European champion of the board game Go, almost a decade before experts in the field expected this[1].

One key area where AI is making serious in-roads is the automation of tasks hitherto done by humans. While this has the potential to relieve people of monotonous, repetitive activities, AI is capable of much more than this, tackling "white collar" knowledge workers' routine cognitive tasks. This naturally leads to worries about the impact on employment, in ways not seen since the industrial revolution, with industry and scientific leaders expressing concerns about the long-term impacts (e.g. Elon Musk[2], Stephen Hawking[3], Bill Gates[4]).

A recent study by researchers at Oxford University[5] examined how susceptible jobs are to computerisation. The study computed the probability of computerisation of 702 detailed occupations in the US labour market, and the analysis concluded that 47% of total US employment is at risk from automation over the next two decades. Interestingly, in their ranking of occupations by propensity to be computerised, a number of insurance-related roles featured, as shown in Table 1 overleaf.

[1] "Google achieves AI 'breakthrough' by beating Go champion", BBC News, 27 Jan 2016

[2] "I think we should be very careful about artificial intelligence. If I had to guess at what our biggest existential threat is, it's probably that. So we need to be very careful, I'm increasingly inclined to think that there should be some regulatory oversight, maybe at the national and international level, just to make sure that we don't do something very foolish" – Elon Musk, Oct 2014

[3] "The development of full artificial intelligence could spell the end of the human race" – Prof Stephen Hawking, Dec 2014

[4] "I am in the camp that is concerned about super intelligence. First the machines will do a lot of jobs for us and not be super intelligent. That should be positive if we manage it well. A few decades after that though the intelligence is strong enough to be a concern. I agree with Elon Musk and some others on this and don't understand why some people are not concerned", Bill Gates, Reddit, Jan 2015

[5] The Future of Employment, Frey and Osborne, Sep 2013

JOBS MOST AT RISK OF BEING REPLACED BY ROBOTS		
Occupation	Ranking	Propensity to be computerised
Insurance Underwriters	5	99%
Insurance Claims and Policy Processing Clerks	14	98%
Insurance Appraisers / Auto Damage	18	98%
Insurance Sales Agent	38	92%

Table 1: Ranking of insurance-related roles by likelihood of computerisation (ranked out of 702 professions).

In this paper, we set out our view that Insurance-focused AI in the form of the *Automated Adviser* is on the near horizon, building on the developments in computing power, AI capability, data availability, consumer needs and evolving regulatory frameworks. While the natural reaction of an industry under threat of disruption is to deny or decry it, we feel it worthwhile to stimulate and provoke debate on these matters, and we welcome feedback and comment on the many issues that will inevitably arise from this.

Disrupting insurance

No industry is exempt from disruption. Even industries which seemed to be doing perfectly well have had their status quo shaken up – destroyed, even. The oft-repeated examples are Movie Rentals and Mobile Telephony. Blockbuster was a multinational behemoth – the Starbucks of VHS and DVD rentals, if you will. While Blockbuster started to lose some ground to the mail-based services like Lovefilm, it was finally done for by streaming services like Netflix delivering video content on-demand. Consumers preferred the newer experience - no more late fees, no more trips to the store, no chance of the movie you want to see being “out of stock” - and voted with their feet (or fingers, as the case may be). Since then, numerous new players have entered the streaming space and a whole market has sprung up to serve that content – from smart TVs to streaming boxes (like Apple TV, Google Chromecast and Roku) to tablets and smartphones.

On the topic of phones, not so long ago, Nokia too was the runaway leader of the cellular handset market, with its main competitors being Ericsson and Motorola. Although we all know that smartphones, and Apple’s iPhone in particular, changed the landscape for mobile telephony, what we sometimes forget is that mobile telephony was hardly stale when it was disrupted; consumers were not tired of their Nokia (or Ericsson or Motorola) handsets; innovations were still taking place on a regular basis and a sizeable proportion of the market was initially unconvinced of any need for a smartphone or its apps. Yet, again, consumers preferred the newer experience and now the Nokia, Ericsson and Motorola brands are all but gone.

What's particularly interesting about the smartphone revolution is that its impact has been far further-reaching than the mobile handset market alone. Of course, apps have created a whole new industry in themselves, ranging from productive time-savers to less productive time-passers. Apps aside, though, smartphones have also made a significant dent in the market for other standalone products. Who would now buy a Dictaphone? Or a disposable camera? Or a small flashlight? Pocket calculator? Travel clock? Filofax? Address book? Walkman? Satnav? Portable games console? A whole host of industries have been significantly disrupted by the smartphone – some would argue even the personal computer is no longer needed. So spare a thought for all those other device makers, as well as Nokia and its peers.

The smartphone has changed consumption behaviour, at least as significantly as PC browser-based internet access did. Smartphone users are increasingly accustomed to immediate access, purchase and consumption. Just as we no longer visit our local record store to purchase music, we are no more likely to purchase a physical CD from Amazon. Instead, we download or stream our music instantaneously. Equally, we compare and change our utilities suppliers and control our home heating and security from anywhere in the world through a few taps and swipes on our phones.

With the insurance industry really just starting the conversation about the likely impacts of technology disruption, it begs the questions: Are we really so different that we cannot be disrupted? Are we really immune from extinction?

"But insurance is different!"

There are many reasons to be proud of the insurance industry. The authors submit that insurance is a noble industry – there to help when bad things happen. It frees up capital and allows people, companies and nations to invest for a better future, without fear of losing what they already have. Insurance allows people to take chances, by transferring risk.

Insurance is a promise, a service sector industry of *good faith,* which runs between the customer and the insurer, in many markets via brokers or agents. These intermediaries rely on trust and personal relationships to understand and serve their clients. Trust is the currency of modern business[6] and of societies[7]. Complete strangers increasingly trust eachother to share their living spaces (e.g. Airbnb) and journeys (e.g. Uber) amongst other things. Yet despite insurance's headstart on building trust, customer satisfaction levels in the insurance market have hit worryingly low levels. According to a 2014 Capgemini survey, less than a third (29%) of customers are satisfied with their insurance providers' services, globally[8]. Further, customer satisfaction levels declined, almost without exception, across all stages of the insurance lifecycle – from researching quotes to filing claims. Couple rapid technological advancements with this general sense of customer dissatisfaction, and the opportunity for disruption (and upside for the customers and *disrupters*) becomes substantial.

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[6] Rachel Botsman, TED talk The Currency of New Economy is Trust
[7] Francis Fukuyama, Trust: The Social Virtues and the Creation of Prosperity, 1996
[8] Capgemini Consulting, Fixing the Insurance Industry

While much of the "fintech" disruption since the crash of 2008 has been in banking, lending, payments, foreign exchange, investment management and virtual currencies (such as Bitcoin and the blockchain infrastructure that underpins it), insurance has remained relatively immune to these waves of innovation crashing on its shores – often largely attributed to its strong annuity revenue streams and high barriers to entry (including capital requirements and regulation). But the insurance industry cannot remain immune forever, and there is growing evidence that startups and investors alike are increasingly focusing their attention on the insurance sector (e.g. recent articles by Rob Moffat[9] and Toby Coppel[10]).

While disruption may be increasingly accepted as part of modern business[11], it is painful for the companies who live through it. Brokers and insurers may believe they can rely on long-term client relationships, but many policies have an annual expiry (certainly in the General/Property & Casualty Insurance segment), meaning that change can actually come quite rapidly if consumers are sufficiently convinced by the alternatives[12]. Consider the UK consumers' speed of adoption of Price Comparison Websites sites such as Money Supermarket, Compare the Market and Confused – partly because consumers prefer the experience to alternative quote shopping methods, and partly because insurance is bought primarily on price[13].

The consumer perspective

"You've got to start with the customer experience and work back toward the technology - not the other way around"

- Steve Jobs, Apple CEO, May 1997, World Wide Developers Conference

Attend any insurance conference and you'll hear the attendees discussing the needs of the regulators, the insurers, the brokers, the retail distribution channels and the reinsurers. If you are lucky, you may also chance upon a discussion about the needs of the consumers.

However, as is clear from other industries, those who put the **consumers' needs first** take the prize in a massive way. A case in point is Amazon, whose "one click" approach reduces the friction of buying, and whose relentless focus on competitive pricing, speedy delivery, and excellent customer service have made it the world's biggest retailer. Apple has long focused on elegance of design and effortless operation, hiding complexity wherever possible – enabling it to disrupt the computing, music, phone and watch industries, and making it one of the world's most valuable companies.

[9] City AM, Fintech is booming – but where are the insurance tech startups?
[10] Mosaic Ventures Blog, Where is all the innovation in insurance? Let the capital flow
[11] The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail, Clayton Christensen, 1997
[12] Harvard Business Review, The Pace of Technology Adoption is Speeding Up, Rita McGrath, Nov 2013
[13] FCA's Price Comparison Website: Consumer Market Research report by Atticus, 2014

Once consumers experience superior purchasing and servicing journeys in other areas of their lives, they will expect and demand this similarly from the insurance sector. Note also that while the term "consumer" implies an individual, this equally well applies to a small business, whose needs are often closer to a retail customer than a large corporate; the insurance products would simply be different, e.g. Office Insurance, Directors & Officers liability, or Professional Indemnity cover.

Consumers are seeking solutions that offer convenience, transparency and trust – and confidence that they are getting value for their money (Figure 1). Moreover, they want a solution to manage *all their insurance* in a simple and coherent way. From within, the insurance industry tends to think of itself in "siloes", be it life insurance, health insurance, General Insurance, or even narrower insurance classes, e.g. liability cover, car insurance, or concert cancellation insurance. From a consumer perspective, these distinctions are unimportant – an average consumer has numerous policies from multiple providers, covering their car(s), house, pet(s), travel, gadgets, mortgage, health, life, income, and various other items (e.g. horse, caravan, boat, art, boiler, etc.), and they need tools to look at their cover "in the round".

Figure 1: Meeting consumers' desires – across all their insurance needs

It is received wisdom that insurance is often a "grudge purchase", and that where it isn't compelled by law, it is "sold not bought". The insurance sales process *has* gone through gradual evolution (Figure 2**Error! Reference source not found.**), but still feels of an earlier age, with fragmented experiences often imposed on consumers who, at best, feel inconvenienced and at worst, feel resentful and distrustful. Having started out largely via brokers (typically face-to-face or by phone), the sales journey progressed to direct selling (pioneered by companies like Direct Line, whose initial model was purely by telephone), then to Price Comparison Websites (for limited classes of insurance, like car, home and simple life insurance), and finally to online purchasing journeys (for a range of general and niche products), some of which now support mobile purchasing too.

Figure 2: Evolution of the insurance purchasing journey

Moving from price to advice

The trend for disintermediation has further distanced the consumer from advice, creating a widening ***advice gap***. While high net worth individuals have found value in the paid advice they receive from their brokers, the mass market has been left behind. This market (which can be further segmented, with the *mass affluent* at the upper end in terms of disposable income and insurable assets) has engaged in a race to the bottom with insurers, focusing mostly on price alone, with service naturally suffering. Few insurers address the mass affluent niche successfully, a notable exception being Hiscox in the UK, but even established brands are forced to engage in price-cutting promotions to appear in the top Price Comparison Website results.

The net result of this race is often:

- Substandard terms of cover such as high deductibles, low limits and a swathe of exclusions – all of which become apparent when the insured makes a claim, further eroding trust in the industry's interest in serving its customers
- Annoying the customer with follow-ups under the pretence of "confirming details of the quote", to then hard-sell, up-sell, or (worst of all) "bait and switch"
- Unsustainable pricing for the insurers focusing on attracting new customers at the expense of existing ones, i.e. renewal prices are very unattractive, leading to customer churn and new customer premiums are artificially low to attract new customers. This means that existing customers, whom the insurer understands better, are dis-incentivised to stay with their insurer, and the insurer is taking on greater uncertainty with its new customers. All businesses prefer repeat custom, but insurance is almost designed to churn.

Regulatory pressures have also contributed to these changes. The Retail Distribution Review (RDR), which came into force at the end of 2012, led to far-ranging changes in the adviser channel, creating advice gaps for the mass market who were not prepared to pay IFA fees for independent advice. The current Financial Advice Market Review

(FAMR)[14] is reviewing the area of advice in light of these and other developments … including technology advancements, of which more later.

In short then, all signs indicate that the insurance market is likely ripe for a new **consumer-centric solution**, moving beyond the classic price comparison website – allowing users to manage all their insurance needs in a coherent way, to enable the smarter use of their own data (combined with external market and product data), and to select relevant products that are suitable for them. This next generation solution needs to operate at scale, providing full personalisation for each consumer, at low cost, and in such a way as to engender trust and provide value for money.

Such a solution also offers the chance for the insurance industry to address some of the fractures in the consumers' trust in insurance and to start to build stronger relationships, affinity, understanding and brand loyalty with their customers, based on trust, quality, value and service rather than simply the lowest premium.

The computer as adviser

The requirements outlined above need to be viewed against the general backdrop of ongoing technology developments. Amara's Law[15] states that "we tend to overestimate the effect of a technology in the short run and underestimate the effect in the long run". For example, while the incremental changes in smartphones now seem small from year to year (bigger screens, faster processors, more apps, richer graphics, better touch gestures, etc.), it is astonishing to realise that the first iPhone was only released 8 years ago (29 Jun 2007) – its impact in less than a decade has been astonishing.

There are three core technologies, central to AI, which are now reaching levels of maturity, cost-effectiveness and ease of implementation so as to bring AI within the reach of companies interested in exploiting it:

- Service Oriented Architectures (SOA) and Web Services
- Techniques for managing large scale data sets
- Machine Learning techniques

SOA, Web Services, enterprise-hardened datasets and architectures (as provided by ACORD insurance data standards) support the first two core technologies above. Coupled with ongoing developments in computing speed (Moore's Law), expanding external unstructured big datasets and NoSQL technologies (such as Hadoop) along with smartphone capability, we contend that the key elements are now in place to enable a completely different approach to insurance broking – which we term the Automated Adviser (an example of which is Surely's Robo Broker platform). Automated Adviser technologies hold the promise of not only assisting a consumer to manage all their

[14] https://www.fca.org.uk/firms/firm-types/financial-adviser/financial-advice-market-review
[15] http://www.pcmag.com/encyclopedia/term/37701/amara-s-law

insurance competently, but also helping that consumer to keep their insurance affairs *optimised* going forward, with the minimum amount of effort, delivered through a virtual experience that consumers are comfortable with.

A key element of the solution is the collation and intelligent processing of data. To give an analogy, consider going to your doctor with a medical complaint. Your doctor will draw upon four major sources of data in order to help arrive at a suitable diagnosis and recommended course of action:

- Your past medical history (including any family / genetic factors)
- Your current medical status (e.g. symptoms, drugs you are taking)
- The results of any tests / investigations currently being carried out on you
- The current state of knowledge in the field (including treatment options and likely outcomes) – a body of knowledge which is changing by the hour across the world

IBM, via its AI platform "Watson" (which in 2011 defeated the top US players in the TV game show *Jeopardy*[16]) is already building such a medical diagnostic platform to aid oncologists, using its cognitive computing systems (or "cogs"). This is a substantially more mature version of the classic "expert system" approach first championed by computer scientists in the 1970s. Watson automatically analyses the patient's medical record, identifies potential treatment options, ranks these options and provides links to supporting evidence for each option to help oncologists consider the best treatment for the patient. This solution recognises explicitly that oncologists (like all clinicians) are struggling to keep up with the large volume of research, medical records, and clinical trials available – and thus need tools to assist them. A doctor commenting on the system noted that it's like "having a capable and knowledgeable 'colleague' who can review the current information that relates to my patient … It is fast, thorough, and has the uncanny ability to understand how the available evidence applies to the unique individual I am treating".

The notion of using computers to provide financial advice is not a new one either. Termed "robo advice", the field has been advancing recently in the US, particularly in relation to investment management – where again, there is a natural advice gap, with high net worth individuals being well catered for (by human advisers), but the mass affluent and emerging affluent sectors of the market cannot generate sufficient fees for wealth managers to service them viably face-to-face. Firms like Betterment, Wealthfront and Future Advisors (acquired by Blackrock in Sep 2015) emerged to serve this market, providing discretionary managed services via "black box" algorithms.

This approach does pose a challenge to regulators, and indeed regulation is a key inhibitory factor. However, moves are afoot to address this, with the UK's FCA revealing that nearly 40 companies asked the regulator for help about setting up robo-advice between Oct 2014 and Aug 2015[17]. In response, the FCA set up Project Innovate[18] to

[16] IBM Watson: The Jeopardy-winning supercomputer
[17] New Model Adviser, citywire.co.uk, Nearly 40 firms turn to FCA for robo-advice help
[18] https://innovate.fca.org.uk/

assist companies in introducing novel financial products and new business models, and its ongoing Financial Advice Market Review[19] is looking specifically at where the lines will get drawn between self-service, guidance and full-blown financial advice. Indeed, one of the objectives of the review is to examine "the opportunities and challenges presented by new and emerging technologies to provide cost effective, efficient and user friendly advice services".

Anatomy of the Automated Adviser

So, if one sets out to build such an Automated Adviser for the insurance market, what would it look like?

The high-level tasks it would need to perform are listed in Figure 3 below, shown in an increasing progression of sophistication:

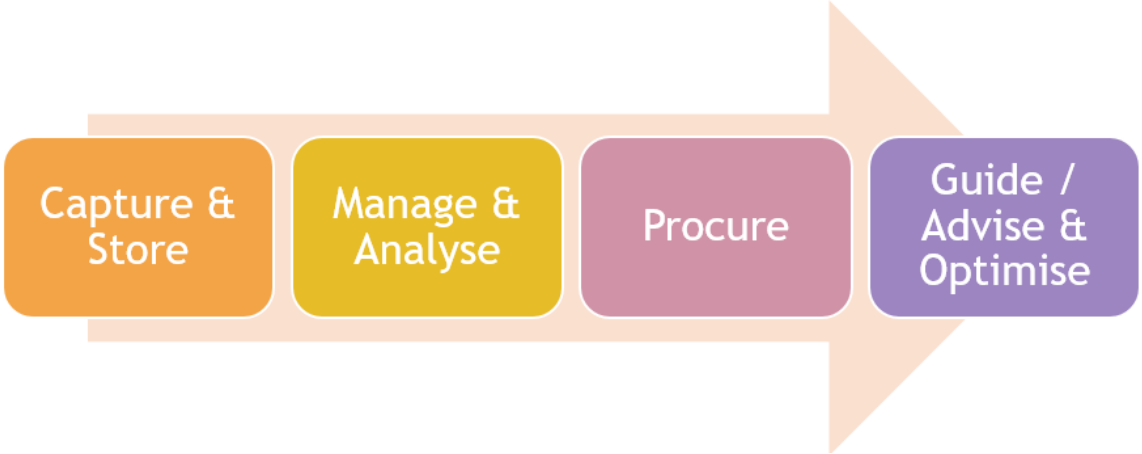

Figure 3: Progression of capabilities

These include:

- **Capture & Store**: This involves capturing the key information about the customer and all his / her existing policy details, and providing secure storage of the relevant data. ACORD data removes much of the manual burden that this task can impose.
- **Manage & Analyse**: This entails assistance to manage the various policies (and underlying assets), e.g. reminders when policies come up for renewal or when a car requires an MOT, as well as analysis of the policies & coverage one has (for sufficiency / missing items, value for money, overlap and duplication, etc.)
- **Procure & Renew**: This involves assisting the consumer to procure new policies that he / she is interested in by scouring the best deals in the market, and managing the renewals process for existing lines of insurance
- **Guide / Advise & Optimise**: This covers advice (or "guidance") for the consumer, to the extent this is permitted by AI in the relevant regulatory framework, and also assisting the consumer to maintain his / her insurance portfolio in an optimal state moving forward (where "optimisation" can be defined across a number of measures)

[19] https://www.the-fca.org.uk/financial-advice-market-review-famr

These areas are further broken down into functional elements in Figure 4.

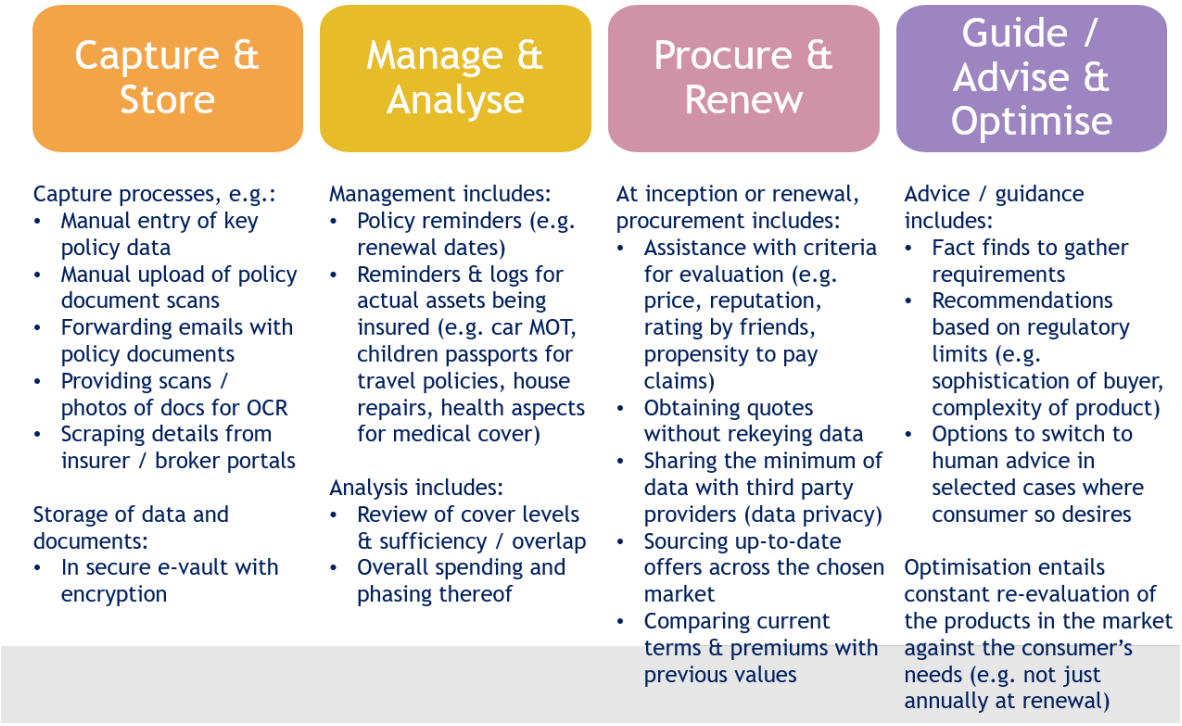

Figure 4: Further breakdown of key areas

All four stages of this process are natural candidates for the use of AI technologies. The *Capture* process, for instance, can use intelligent extraction of key policy information (such as policyholder names, start date, end date, annual premium and key exclusions) from emails and documents (whether electronically generated or scanned). The *Analysis* process can use advanced legal contract analysis technologies to understand the Terms & Conditions more deeply, and highlight areas of overlap and duplication – or insufficiency. The *Procurement* process involves collation of large troves of data scoured from the Internet and intelligent comparison of quotes, much like shopping and price comparison sites. Finally, the *Advice and Optimisation* processes inherently need to apply advanced logic to the problems of selecting suitable products – akin to a stock and fund selection strategy once a balanced portfolio and asset allocation has been arrived at.

The criteria for selecting suitable policies (or ranking the providers) can also be defined in a number of different ways, at the consumer's preference, and could include:

- Cheapest price
- Best rank amongst your peers / group of friends / people living in your area / people in your age group
- Propensity to pay claims
- Size of insurance company / brand value

These elements can then be combined into a technical architecture for the Automated Adviser, as in Figure 5 (which shows the architecture of the "Robo Broker" platform developed by Surely):

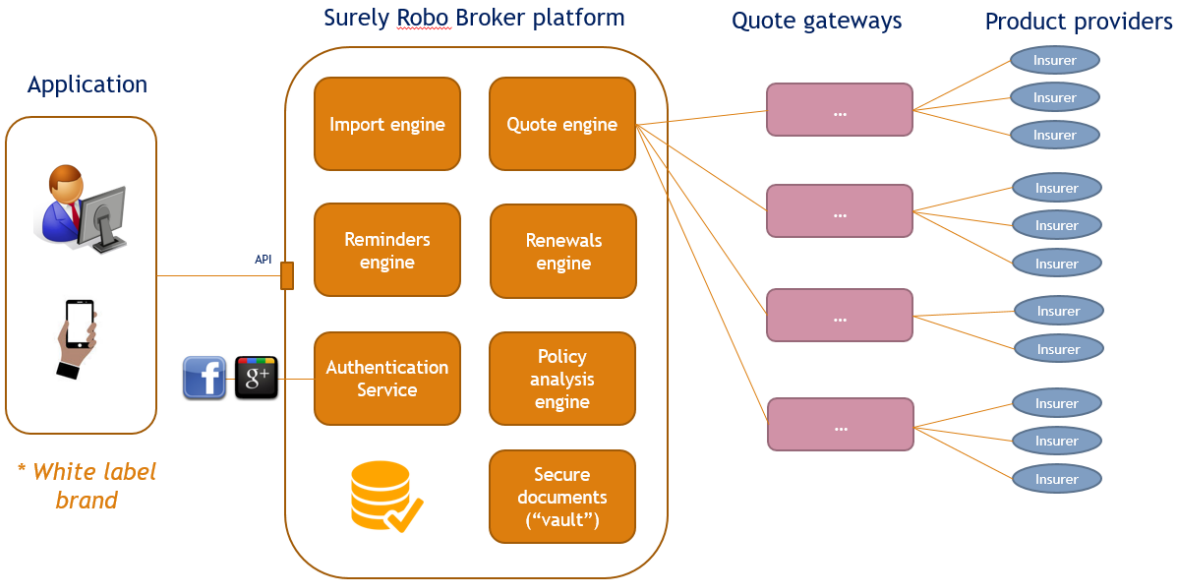

Figure 5: Surely's Robo Broker architecture (www.robobroker.co.uk)

In the above architecture, the front-end can be built by whoever is integrating such a robo adviser into their solution (e.g. a Direct-to-Customer wealth platform), since the robo adviser platform is exposed as a set of web services or Application Programming Interfaces (APIs). In this way, the robo adviser solution can be built into an existing web application (e.g. online banking), or incorporated into a native mobile app (such as iOS / Android / Windows Phone).

The *Import Engine* captures the key consumer and policy information (and extracts all suitable metadata to assist with analysis). The *Authentication Service* allows third party credential systems (such as social media logins) to be associated with the account, and provides profile management. The *Secure Document Vault* stores the key documents and contacts, and an *Analysis Engine* analyses policy coverage and monthly / annual expenditure. A *Reminders Engine* assists with the management of policies and underlying assets being insured, e.g. for a car, one may need reminders for an MOT or renewal of vehicle tax; for a child, one could record dates for vaccinations; for travel policies, one could record passport renewal dates, visa expiration dates etc.

The *Quote Engine* connects to a number of Quote gateways and product providers, to source new policies in the market, and the *Renewals Engine* kicks in specifically to obtain appropriate policies and deals in the run up to renewal – in a process designed to be more proactive, simple and consumer friendly than the current Price Comparison Website (PCW) approach. Finally, there are also algorithms for constant re-evaluation of the portfolio in light of changing market conditions, new product propositions and changing pricing. Such a mix of techniques and technologies can know the customer, know the market and advise on the best courses of action without costly overheads,

reaching a mass market long since disintermediated and operating without expert advice.

The choice of product providers and quote gateways to connect to such a system – or indeed to expose to the consumer – will depend on the specific application and how it is being used (e.g. by an independent party providing a "whole of market" approach). This is also an opportunity to build an eco-system where product providers can themselves publish their product details into the system (a bit like an "app store" for insurance products, in a platform that affords distribution to the consumer market).

Finally, while this paper is focused on sales advice, AI is also capable of transforming the consumer experience in other areas relating to insurance too – most importantly, claims. Claims are insurers' moment of truth – where the promise of insurance is tested, and where the consumer has a right to expect excellence. AI is increasingly being deployed to quickly sift through claims to pay legitimate claims without delay and tag suspect or complex for further human assessment. Automatic detection that a flight has been cancelled, for instance, could trigger an automatic payment under a travel insurance policy.

Data and analytics

The data obtained from such an Automated Adviser solution described above can also offer a number of valuable opportunities for stakeholders, including and especially the consumer. Intelligent use of the data gathered from the platform, along with big datasets, can help insurers and service providers to:

- Extend and potentially bundle services
    - across insurance lines (e.g. offering a complete portfolio of insurance under a single umbrella, with one annual renewal and premiums spread over instalments)
    - into further financial services (e.g. offering car leasing with motor insurance)
    - with loyalty schemes linked to other consumer brands
- Offer smart comparisons to the consumer, against criteria other than just price. e.g. claims service
- Intelligent validation, e.g. informing users if their sums insureds are considerably higher or lower than their peers, recommending a reassessment of their needs
- Proactive event-based advisory, e.g. informing users of best practice in preparation for forecast extreme weather in their area, such as recommending cars are parked away from trees
- Track claims activity and proactively advise authorities of clusters of illegal and fraudulent events, such as vandalism or *cash-for*-crash induced or staged accidents

amongst countless other applications that the intelligent insurer can conceive of.

Forrester's Best Practice for the Analytics Process (Figure 6) shows the steps involved for Business Analytics. Where non-standard data is employed, it is estimated that as much as 80% of available time and workload is spent on the first two steps – "Understand data" and "Prepare data".

As the insurance industry's data standards body, ACORD provides implementers with consistent, reliable datasets to work from, which can provide seamless processing and the raw materials for numerous value-adding analyses, including robo-advice. The use of ACORD standard data can thus greatly reduce this workload, provide far more reliable data and subsequent analysis (following the *garbage in, garbage out* principle) and enhance speed to market. Companies planning to develop robo-advisory solutions should consider the use of standard data formats wherever possible to ensure that effort and workload is focused on value-adding activities (rather than *data cleansing)* so that the resulting analyses and advisory are based on sound datasets.

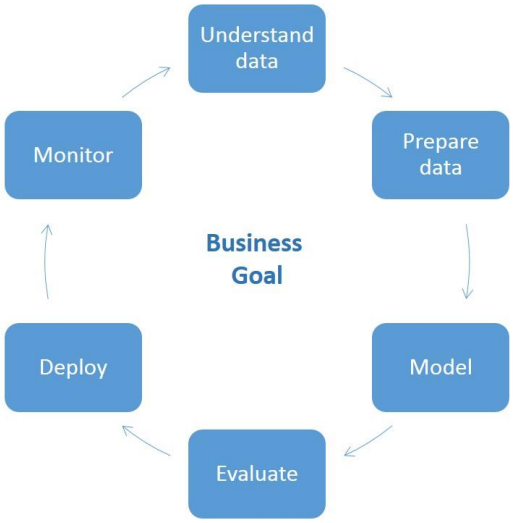

Figure 6: Forrester's Best Practice for Analytics

The increasing sophistication of analytics, powered by cloud services, large datasets and processing capability, is shown in Figure 7, from basic information towards optimisation, with prescriptive analytics able to provide recommended actions, or advice.

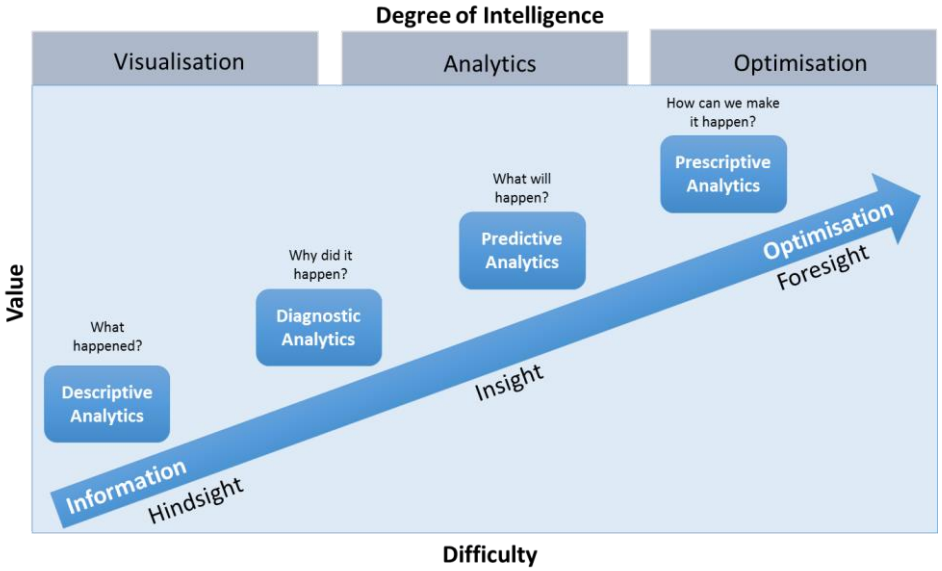

Figure 7: Computing's Intelligence Journey

Security and privacy concerns

Consumers' perspectives on privacy are still evolving, but many are comfortable with sharing data in return for valuable services if their privacy is respected, e.g. they do not receive unsolicited sales calls and they trust that their data is stored securely.

Legislation on data privacy is also evolving and must be complied with, along with the need to protect against cybercrime with appropriate security arrangements. Such concerns must be addressed by companies interested in offering online services, and the authors cannot overstress the importance of encouraging readers to obtain the best possible advice on these issues.

Conclusion

This paper has outlined the consumer and technical landscape that makes AI a viable and attractive proposition to consumers and the insurance industry, helping to bridge the advice gap that exists for the mass market and improving the sales and post-sales journey.

We believe that the Automated Adviser solution (of which Surely's Robo Broker platform is one implementation) has the potential to be used in a wide number of scenarios, offering consumers a highly personalised and customer-centric tool for managing their insurance.

These include:

- Wealth management platforms, handling the customer's insurance needs alongside their wealth management needs
- Pure consumer plays, of which several are now emerging, e.g. Sherpa in the UK and Knip in Switzerland
- IFA and Broker networks, who want to offer a wider service offering to their consumers (following a "hybrid" technology & human adviser model)
- Banks, via their online banking platforms or banc assurance operations
- Affinity platforms / large retail brands, who already service a customer in one area, and wish to provide additional insurance servicing to create additional revenue streams or develop a broader customer relationship.

In reality, the "pure technology" solution for customers is likely only to suffice in certain circumstances (e.g. simple products, or more complex products for more sophisticated consumers). In a world with ever-changing products and rules about insurance, consumers are likely to still want the "human touch" for certain aspects of their insurance affairs. As with the Watson / Oncologist example described earlier, where the AI works alongside the doctor, a similar model could well emerge in the insurance advisory space, with AI complementing the adviser to give consumers excellent tools and personalised advice – at mass market scale.

The solution could therefore be a **Hybrid Model**, using Automated Adviser technology for those aspects of a portfolio that are straightforward and purely transactional, where profit margin is small and customers are happy (or indeed prefer) to buy and manage a product digitally by themselves, and returning to the essence of what a human broker offers for other parts of the portfolio, namely personalised value-added advice and education.

Whether the advice is offered by Artificial Intelligence or a trusted professional or a combination of the two, it will need to be based on a solid understanding of the market and customer. This understanding comes from the use of reliable datasets, such as those defined by ACORD data standards. We invite your opinions and feedback on this topic – join our LinkedIn discussion at https://www.linkedin.com/groups/3210754 or contact us via any of the channels we list in the *About the authors* section below.

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About the authors

ACORD

ACORD (Association for Cooperative Operations Research and Development), founded in 1970, is a global, not-for-profit standards development organization serving the global insurance industry.

ACORD facilitates fast, accurate data exchange and more efficient workflows through the development of electronic standards, standardized forms, and tools to support their use.

Puneet Bharal is Director, Global Development with ACORD, responsible for promoting the awareness and use of standards-based e-business around the world. Prior to joining ACORD, Puneet was the Product Director at RI3K (now part of Ebix), helping to take them from start-up idea to the world's first reinsurance e-placing hub and the first implementer of ACORD's Placing XML message. Before that, Puneet held market and market and business analysis roles with Gartner, Datamonitor and SITA.

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Surely Group

The Surely Group was founded in the UK in 2013 by a team of experienced technologists, insurance experts and entrepreneurs. We provide innovative Direct-to-Customer (D2C) technology for the insurance industry. Our products include a cloud-based "Quote & Buy" system and a Personal Insurance Agent platform ("Robo Broker"). Based in Shoreditch (London UK), our clients include AIG Life, AmTrust Europe, Best Doctors, Boring Money and RGA.

Dr Larry Shapiro, the CEO and Co-founder of Surely, is a serial entrepreneur, now on his third start-up. A technologist by nature, he has a Master's Degree in Artificial Intelligence and a Doctorate in Robotics from Oxford University. He has worked in UK high tech for 20 years and is passionate about Artificial Intelligence and its application to real-life problems. Prior to co-founding Surely, he built and ran a financial services software house which was successfully acquired in 2012.

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