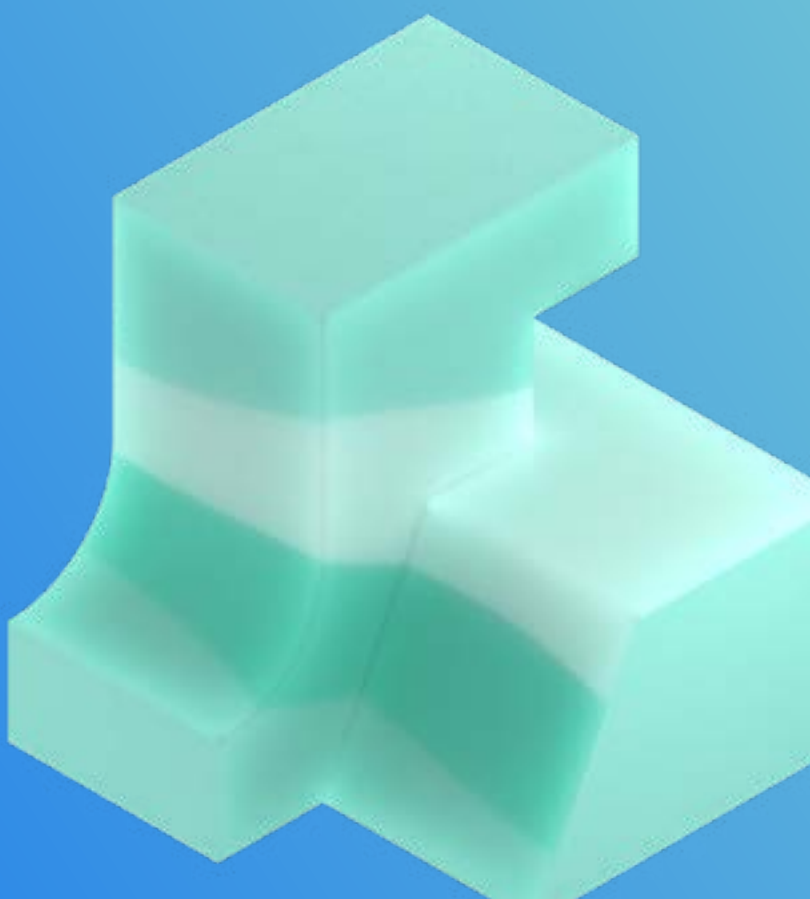
Cytora

Removing inefficiency in commercial insurance

Using technology to improve performance by automating risk flows within the insurance business



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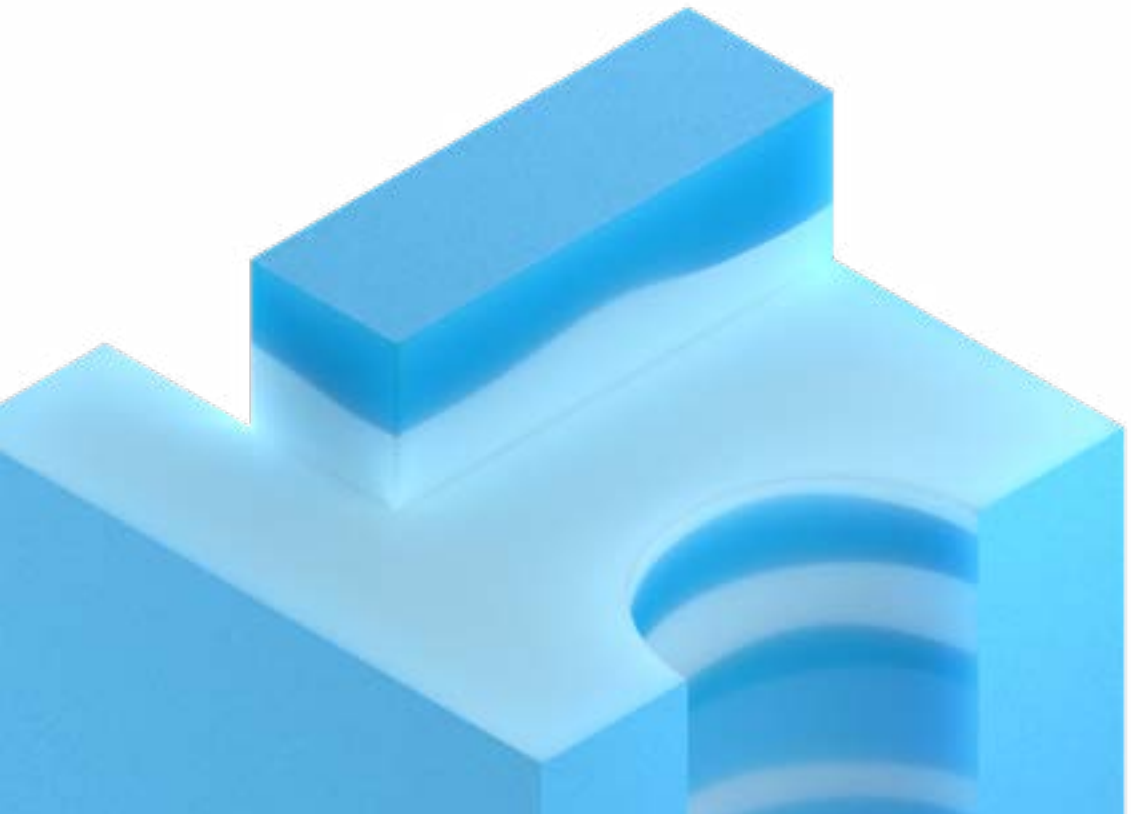
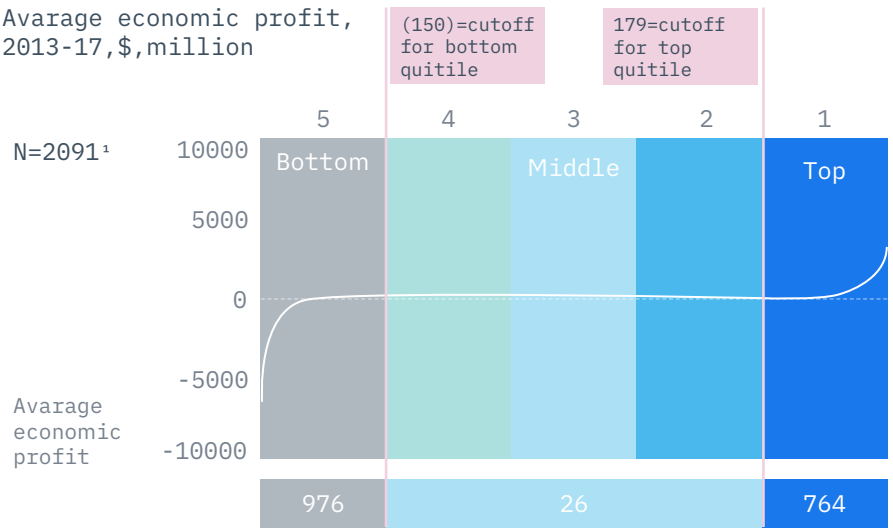


INTRODUCTION

The challenges facing the insurance industry are piling up. 2020 saw a record number of catastrophic events that each caused at least $1 billion in damages, while the economic contraction caused by the pandemic response affected insurance particularly severely.

However, even before these obvious manifestations of the changing risk landscape, insurance firms were often seen to be under-performing. The industry as a whole accounted for 2.1 percent of global GDP in 2018, the same share as it had in 2008.

Between 2013 and 2017, insurance businesses generated on average $37 million in profit, which compares unfavourably with the $500 million-$2 billion generated by automobiles, pharmaceuticals, technology, and biotech. Incurred losses for commercial insurance went from just under $124 billion in 2016 to more than $172 billion in 2020.



¹Sample includes all insurance companies with insurance revenues grater than $1 billion in 2017. Source: Corporate Performance Analytics by McKinsey

These challenges are indicative of a loss of productivity and a high rate of inefficiency within working practices. However, they are neither universal nor inevitable. In its analysis of 209 insurers worldwide, McKinsey showed that profits at the top 20 percent of insurers were, on average, $764 million – compared to only $26 million produced by the middle 60 percent. The bottom quintile, however, burnt through a staggering $976 million in value per company per year.

There is a consensus across commercial insurance that the solution to these problems lies in dramatically increasing underwriting margins while dramatically reducing costs and improving operational productivity. This is, after all, what the top quintile have managed to do.

However, there is little consensus about how that is best achieved. Technology and digitisation have an essential role to play and have attracted significant attention and investment to date. However, the value from this investment has yet to bear significant fruit.

As we outline in this paper, the next steps to take the insurance industry forward are to:

- Support underwriting excellence, by turning risks into a decision-ready format, putting them in the context of the portfolio strategy and improving the flow of risks through the business.
- Ensure data quality, by eliminating manual and repetitive data entry and administration and enriching incoming risk with relevant data sets.
- Deliver operational efficiency and scale without adding cost with technology and improve on both data origination and bottlenecks – their broking partners.

For that to happen, insurers need to look beyond their own four walls when considering technology and extend their efficiency and productivity improvements to a key point of both data origination and bottlenecks – their broking partners.

PART I. BROKERS AND UNDERWRITERS: THE CRUCIAL POINT OF ENGAGEMENT

In the ongoing discussion about how best to improve efficiency within the insurance industry, the relationship between brokers and underwriters deserves scrutiny. This is a pivotal point where two key processes take place. The first is that the extensive, but general industry knowledge of the broker, is translated into highly-nuanced, market-specific, product-specific expertise of the underwriter. The second is that data necessary for writing risk comfortably and securely enters the underwriters' workflow.

However, this key point of engagement is often characterised by misunderstanding and a mutual lack of respect. In a telling report from 2018, Lloyds noted significant differences between the top 20 value-creating syndicates, who had an average combined ratio of 93%, and the bottom 20 whose average combined ratio was 133%. To explain these differences, the report identified certain common characteristics of individuals working in the lowest quintile.

Among other things, lower performers tended to be suspicious of and disdainful towards brokers, they spent time predominately declining 'bad' risks presented by brokers, and believed technology to be disempowering and a roadblock to successful and efficient underwriting.

Furthermore, poorly performing underwriters tended to see brokers not as customers or representatives of policyholders, but as an outpost of the underwriting firm itself. These views can be a source of problems for insurers and are overdue a rethink.

After all, the broker walks a fine line. On one hand, they need to provide the underwriter with material information about risk to ensure their client is protected in the event of a claim. They must also present the risk as favourably as possible to convince insurers that the potential policyholder could become a valuable customer.

Sitting between multiple insurers and even more multiples of potential clients requires dexterity, efficiency and wide market knowledge. It also means that brokers and underwriters often have misaligned incentives, which are easily overlooked or mischaracterised as inefficiency or laziness.

These mischaracterisations are holding back the sector. There is value to be gained in better understanding brokers' positions, addressing the problems that have developed within this crucial relationship, and introducing structures to improve them for mutual advantage.

A NECESSARY RELATIONSHIP

Good brokers will have strong and often mature relationships with the various underwriters they work with and will be considering the development and requirements of a sustainable relationship in addition to the immediate needs of the current transaction. They are a valuable conduit to multiple potential policyholders and are usually intimately involved in the policyholder's decision-making when buying an insurance product.

The broker is also an expert in risk and insurance. Unlike the policyholders that they represent, a broker is able to talk the language of the underwriter, use the appropriate terminology, and understand which key facts are going to be critical from an underwriter's perspective. Articulating the value proposition to brokers is much easier and more efficient than attempting to articulate and re-articulate it directly to policyholders.

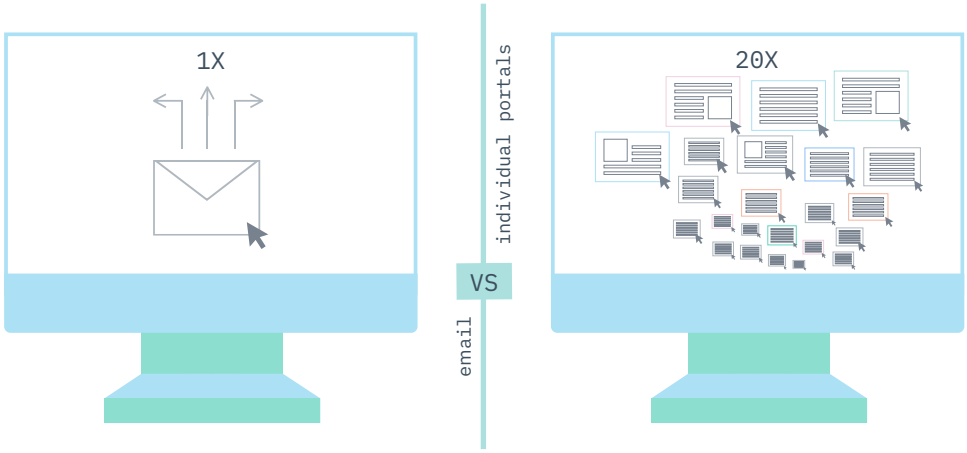
With good brokers in place, insurance companies do not have to direct resources to direct interactions with policyholders. They do not have to go out and actively find clients, visit clients, or engage with clients every time there is a phone call or a change in risk. More significantly, underwriters do not need to worry about the regulatory responsibilities that brokers take on with regard to advising customers.

However, by definition, the broker will not have the same level of deep expertise and nuanced understanding of a specific market as the underwriter. The broker's product knowledge will never be as detailed, and it is all but impossible for brokers to have all the data points demanded by each of the insurers they approach, as each insurer has a different submission process and those data points change over time.

These are significant constraints. The inevitable consequence is that the amount of information brokers can practically include in a presentation that goes to multiple insurers is limited. From the underwriter perspective, this translates into data gaps that need to be filled if they are to understand the risk and underwrite it to the highest degree of comfort and security. In the subsequent back-and-forth to fill those gaps, efficiency is lost, and valuable underwriting resources are directed towards data gathering rather than data analysis.

REDIRECTING INEFFICIENCY

The solution to this tension has, to date, focused on the automation of some aspects of existing processes. This is particularly notable in regional or SME markets, where insurers have built traded products, and extranet portals to gather specified data sets and offer an automated quote. The portal puts the responsibility for data gathering firmly back in the hands of the broker, and with it the inefficiencies inherent in the process.



Instead of sending a single presentation to 20 insurers in a single email, a broker takes on the administrative task of the underwriter and repeatedly keys data into 20 individual portals. It is already difficult for brokers to do all the necessary work for their policyholder customers for the money they earn, especially in these small-to-medium sized cases. This often frustrates brokers: having done their work, the outcome is either a 'referral', which requires further engagement with an underwriter, or a decline to quote by the insurer. Eventually, this affects insurers as brokers will inevitably reduce either the volume or quality of submissions, undermining relationships still further.

What can help is to think of brokers as customers of the insurer: and it is never good company policy to demand that customers change their ingrained behaviour patterns without strong individual incentives to do so. Yet, this is what the most common technology set-ups require brokers to do.

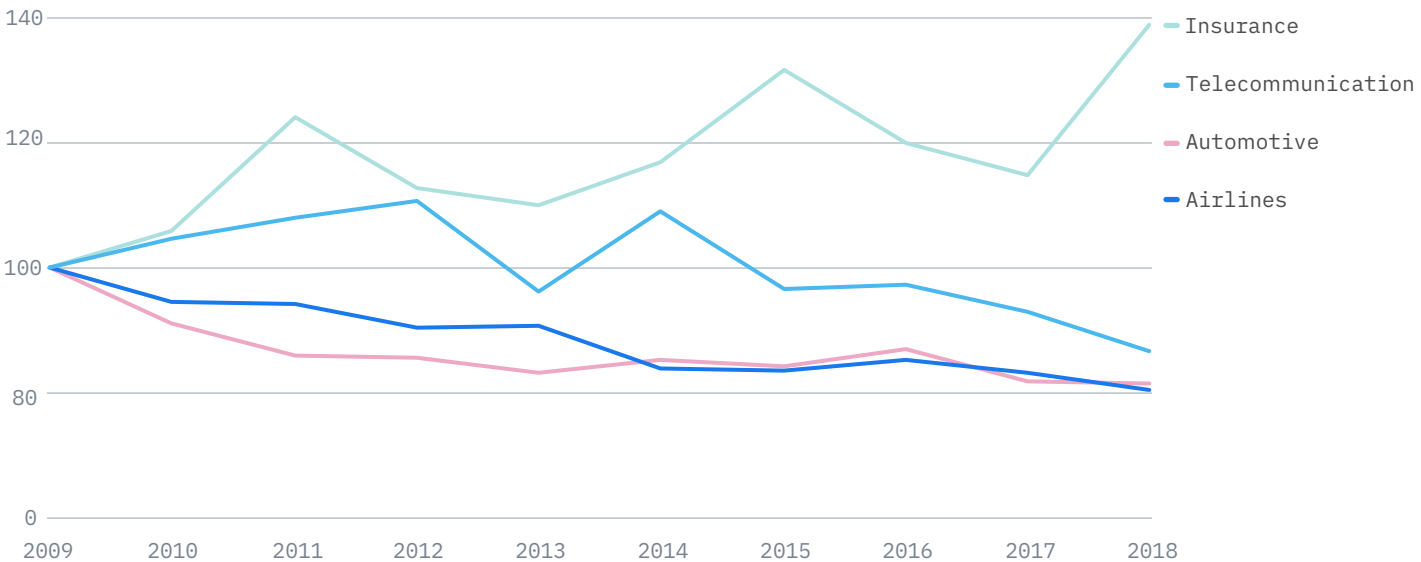
The solution lies in helping brokers work in an efficient, effective and customer-focused way while also ensuring underwriters have the data they need and the ability to use it at the appropriate time in the workflow – all while reducing the administrative burdens and duplicated manual effort that afflicts both parties today.

This is no small undertaking, but to understand where technology can help deliver a more efficient, streamlined and mutually productive relationship between broker and underwriter, it is necessary to look at what technology has promised in the past and what it has delivered.

PART 2. TECHNOLOGY EVOLUTION: THE UNFINISHED JOURNEY

The flow of information about risk has not, at heart, changed much in the 250 years since the first brokers walked into Lloyds coffee shop with the details of various hand-written risks. Today's meeting is rarely face-to-face, and email is the preferred method of transmitting information, but the fundamentals remain the same. Electronification has automated existing processes but has not fundamentally altered those processes.

Cost effciency evolution per industry[1], %, normalized at 100% in 2009



[1]Expressed as selling, general, and administrative expenses as % of revenue. Based on large global players for which continuous reporting is available:insurance players with composite offering,telecom players (incl AT&T, China Telecom, Vodafone), automotive players (incl Ford, Toyota, Volkswagen) and airlines (incl Air France-KLM, American Airlines, Emirates).

Source: S&P Capital IQ, McKinsey analysis

Consequently, the insurance industry often finds itself compared unfavourably to other sectors when it comes to technology adoption, particularly straight-through processing.

As one example, according to research from McKinsey, banks have reduced expenses around granting small business loans by up to 40 percent. Both telecoms and automotive have reduced expense ratios by 20 percent in the past ten years, while insurance has increased by 40 percent.

However, these comparisons hide a more subtle reality where the insurance industry has invested in technology, refined its processes over decades, and worked on ways to add efficiency to the pricing of risk, one of the most intangible products in financial services. It would be a mistake to suggest that the insurance industry has ignored the benefits of technology, automation and digitisation. Investments have been substantial, and fall into three broad areas.

1: ELECTRONIC TRADING

Electronic trading has grown over the last five or 10 years and most industry players are adept at dealing at a distance. But as is widely acknowledged, the industry has not yet achieved the level of online trading or straight-through processing seen in other industries, including other sectors in financial services. Fully automated trading is still a much smaller part of the overall business than many insurers would like it to be, and there are opportunities to increase the level of electronic trading, but they involve important payoffs.

For widely commoditised risks, like individual car insurance, it is possible to develop a question set, supported by third-party data enrichment, such that the carrier can assess their appetite to quote on the given risk, offer terms, and then provide the documents as a follow up, without human intervention.

However, the nature of commercial insurance means that many of these risks do not fit such a neat pattern and cannot move seamlessly through the process pipe. Consider car insurance again, but this time for a commercial fleet of around ten vehicles. That fleet contains three vans, and a range of cars. There's also a driver who is under 25, a middle manager with a drink-driving conviction, and a board director with a Ferrari.

Each of these factors could be enough to push the risk out of the vanilla traded-product envelope, and up the chain to the underwriter. The alternative is that it is flat-out rejected because the insurance company policy is not to manually handle risks of this size.

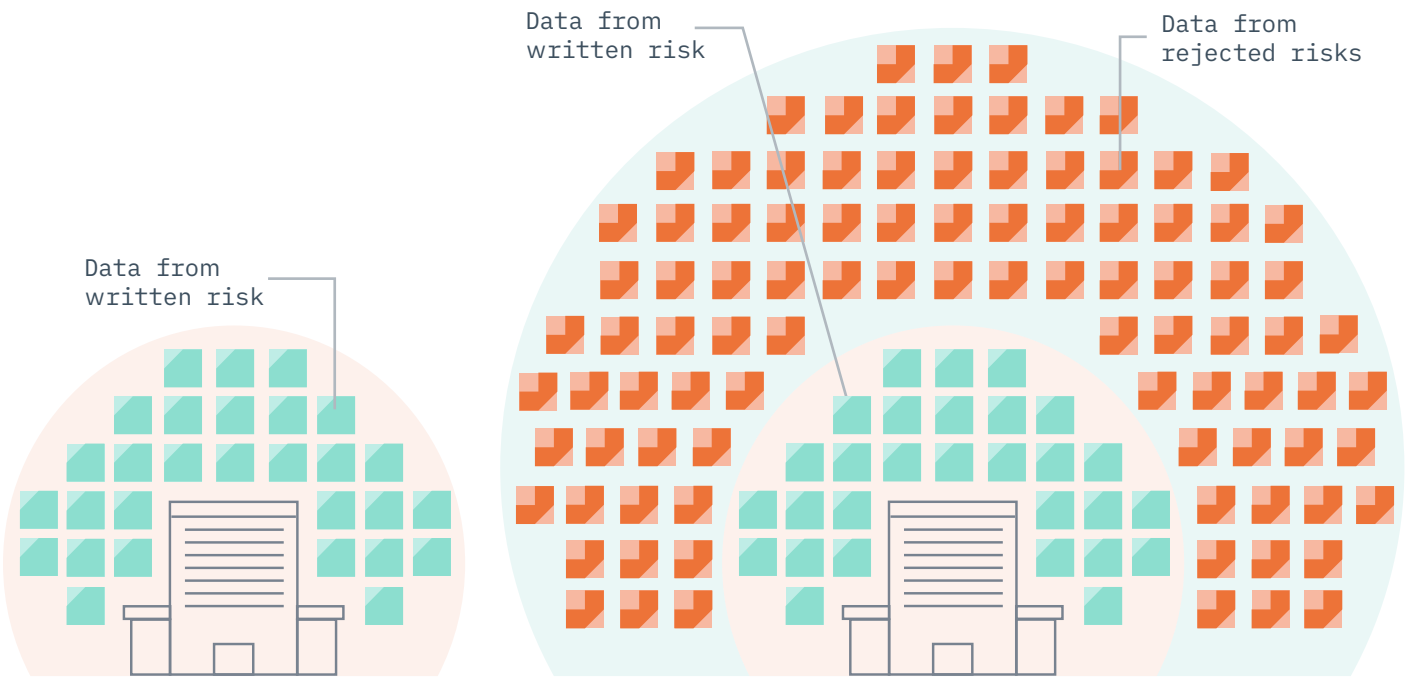
If that is the preferred approach, insurers would also need the analytic capability to assess all risks that flow into the business and the potential outcomes of relaxing one or more controls around what is quoted on, including any potential increase in the number of risks that could be quoted. This essential information would then inform product development, underwriting and pricing changes needed to successfully support the changing business model.

2: DATA ANALYTICS

Insurance has always been a data-driven business, to the point that many insurance companies now have more data than they know what to do with. Data availability, access and storage are rarely a problem. Instead, the problem is understanding what data to analyse and how best to conduct that analysis. Above all, the availability of data should not necessitate additional administrative staff to handle it, or distract valuable underwriting resource.

Advanced data analytics capabilities have helped address some of these problems by extracting actionable insights from the years' worth of data sloshing around in data lakes. Developments in machine learning (ML) and artificial intelligence (AI) are taking that capability forward by identifying more patterns within the data and creating insights from it.

However, applying AI to bad-quality data only produces bad-quality outputs and compounds existing errors. Insurance firms need solutions that can identify and capture good-quality data at greater depth, identify which data can be usefully analysed and which discarded, and enrich incoming data with existing internal and external data sets to create an extremely robust profile of risks, to which AI can far more usefully be applied.



In addition, where insurance companies have always needed to capture data about the risks they take on, and which represents their existing customers, it is now recognised that value can also reside in the data on all the cases that were not written. Once again, applying AI and ML algorithms solely to data on the existing client book comes with limitations.

Insurers learn more about how to underwrite similar cases, and add depth to their understanding to the existing client book, but do not learn anything about the far bigger set of cases that were rejected or the potential residing within them.

A number of insurers are developing teams of data scientists to turn the data lake into something far more valuable. But even this misses the point. A team of 100 data scientists can highlight trends within the data, but they cannot translate that into an emerging revenue opportunity as a result of those trends or whether taking on risks that have traditionally fallen outside the risk book would be a smart move.

It doesn't help, of course, that the average management team's understanding and availability to think about data trends is limited, as they focus on running a business in a highly regulated area, while facing pressure to write more business in a rapidly changing market. What is needed is a technology that can identify trends and spot opportunities.

3: POLICY SYSTEMS

The third technology pillar is the back-end policy system. The past 5-10 years has seen many insurance companies update or replace these legacy systems, many of which were first installed in the 1970s or 1980s. Rather than opt for a total rip-and-replace programme, most firms have opted to add an extra 'layer' to make it easier for their people to key in information.

Updating these systems has certainly been necessary. However, the investments made to date haven't completely addressed the underlying problems, particularly as relates to data quality and data entry. Individuals who were plugging data into the old system are still typing the same data into the new system. Because the quality of data inevitably deteriorates over time, this becomes an almost Sisyphean task without effective automation of data flows. The job is no easier, not much more efficient, and has no end in sight.

Taking a step back and looking at the transformational technology in the round, it is clear that the building blocks for improved performance are there. Data is providing more value, policy systems are faster and smarter, electronic trading has caught some low-hanging fruit, despite the limitations discussed above, and freed up some underwriting time.

However, the final piece of the jigsaw, the one that will really unlock value from these investments, has yet to be slotted into place. For that, we return to the broker-underwriter inflection point: the point where risk and data flows into the business.

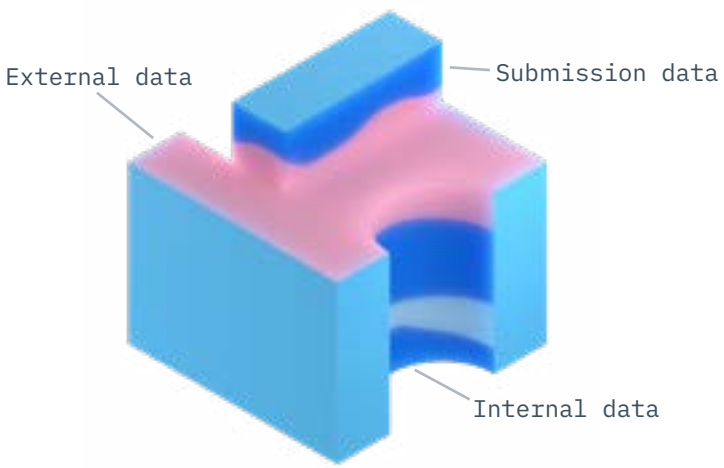
SECTION 3. THE TECHNOLOGY OPPORTUNITY: IMPROVING FLOW AND ELIMINATING WASTE

Having absorbed significant amounts of transformation budget, the systems broadly outlined above have delivered improvements in productivity and performance. However, this has not been enough to lift individual firms out of the financial doldrums or the wider industry out of stagnation.

They have not changed that critical point of engagement, where underwriters interact with brokers, and where risks and data flow into the organisation. Nor do they fundamentally change how the data embedded in those risks is assessed and then processed. Investments have been made in internally facing technology that stop at the corporate border and has not yet covered ways to bring brokers and their policyholder data into the process.

The goal now has to be maximising returns on those investments by looking again at where data analysis and utilisation sit within the workflow and considering how it can best support the most efficient processing of risks between policyholder, broker and underwriter.

DIGITAL RISK PROFILES



The goal now is to build an accurate digital risk profile, that incorporates the right combination of data at the right stage of the workflow from three data sources: broker submissions, internal databases, and external sources.

For the first pillar – broker submissions – brokers can deliver these to insurers in the format that best suits their business model and distribution strategy.

Insurers can then digitise and standardise those submissions, regardless of format, and extract data from them using OCR or AI technologies.

Because these digitised submissions typically do not contain enough data to evaluate or underwrite a risk, they must be combined with internal data, which is critical for contextualising the risk within the insurer's portfolio. For example, internal data can be used to identify whether the insurer has existing exposure to a client as part of the clearance process or to prioritise submissions according to the historical success ratio with the producing broker.

The third layer of data, for example peril scores for wind, fire or subsidence from third-party sources, is needed to accurately analyse the risk. It also allows insurers to identify more nuanced correlations between risk data and loss behaviour, enabling them to build a more granular risk appetite and achieve superior risk selection.

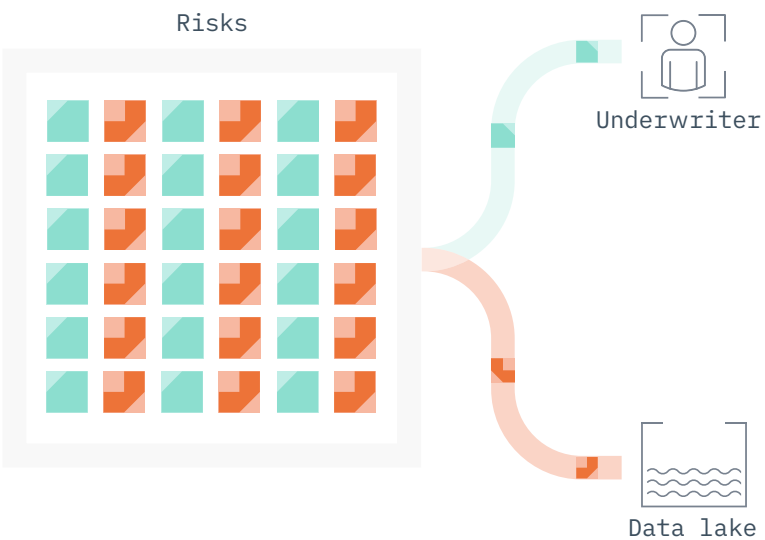
Finally, these three sources of risk information can only be integrated if the client is accurately identified. If the name given is incomplete, a trading name, or a simple misspelling, these sources cannot be combined. In the worst case, they will combine information from separate clients. Therefore, clients must have a unique identifier.

Once insurers have this unique identifier, they can be sure the clearance or accumulation checks are correct, and the external data is applied correctly.

AUTOMATED RISK PROCESSING

Having enriched and analysed the submission, the system should intelligently triage the risk and send it down one of four possible routes: automatic rejection, automatic approval and quotation, return to broker with a request for specific data points, or transfer to the desk of an experienced and skilled underwriter.

In other words, all of the advanced data analysis and the application of AI and ML algorithms happen *before* any human intervention.



Out-of-appetite risks are rejected before underwriters spend any time on them. There is no re-keying, no hunting down of missing information, no chasing brokers for extra data. The risks that need to be underwritten are then routed to the most relevant underwriter for the specific risk instead of bouncing around the business as they often do now.

Underwriters apply their skills only to the most complex or nuanced of risks, the point at which they add real value to the process. Furthermore, the data on which they base their decisions is more accurate, more appropriate and more insightful, adding to competitive differentiation.

The most immediate impacts are:

1. The broker and the policyholder get accurate quotes much faster, which improves the customer experience.

2. Talented underwriters are no longer obliged to act as part-time administrators, which improves job satisfaction and, over time, improves portfolio value as they are able to quote and bind more target risks.

3. Insurance businesses significantly improve their expense ratio, which enables them to scale the business without growing the payroll.

THE CASCADE EFFECT

Beyond these headline benefits, the impact of effective data analysis and triage continues to ripple through the organisation, improving operations over time.

First of all, the data in rejected submissions is automatically captured so that it can be analysed as part of the data enrichment process for future risks. It also is available for future reviews of performance, risk appetite, portfolio opportunities or product development. By viewing both what they have refused and what they have accepted, insurers remove powerful blinkers that have obscured their view of the wider market. As new risks emerge and present new opportunities, this is a necessary bedrock for informed, evidence-based business decisions.

Connected systems can ensure that data retained in enterprise systems, like CRM or policy administration databases, remains current and do not deteriorate over time.

For example, any change in policyholder address or other circumstances can be automatically captured when policy renewal is submitted, rather than lingering unchecked in an administrative to-do pile. As well as cutting out extra administrative effort, this ensures that back-end systems continue to deliver value over their lifetime and give insurers the confidence of knowing that their business decisions are informed by accurate data.

Over time, explainable machine learning algorithms will continue to improve the triage process, selecting and utilising data in accordance with the business channel to which it is being sent. For example, submissions that are routed to the electronic trading system may rely on 500 separate data points, because the system can process that volume of data with barely discernible change in latency. In contrast, submissions that are routed to the underwriting desk will focus on a smaller number of the most salient data points that make a real difference to human decision-making.

CONCLUSION

For decades, the global commercial insurance industry has dreamed of greater efficiency, improved expense ratios, and an underwriting team working on business-expanding risks rather than data entry. However, the technology that could provide this transformation simply wasn't available.

That is no longer the case. Recent technology developments have centred around data analytics, data management and data utilisation, and as a highly data-dependent sector, insurance has an opportunity to advance rapidly towards a more efficient future.

Nonetheless, the common view is that underwriters must change and adapt to the new circumstances that technology creates around them. There is some truth in this, just as there is truth in Lloyds' recommendation that underwriters become more entrepreneurial, "hunt for profitable niche risks," and stay abreast of industry trends as well as client exposures, or McKinsey's that underwriters will need to "operate like hedge fund managers with increased leverage, scale, and insight."

However, expecting both brokers and underwriters to change behaviours refined over centuries to meet the demands of technology is looking through the wrong end of the telescope. The results are incredibly distorted. The more immediately viable approach is to implement technology that works with existing systems and extends the benefits they create for the business.

The result could be truly transformative for the insurance industry. It means a more efficient process for transferring data, more accurate data being made available, better use of in-house underwriting talent and experience, a business pipeline with real growth potential, and the ability to spot viable market opportunities to the benefit of all participants.

Cytora

About Cytora

Cytora is the configurable platform that enables commercial insurers to process risks at greater efficiency and accuracy. Cytora digitises every incoming risk, augments them with additional data sources, evaluates them against multiple rules, including appetite and priority rules, and routes them to downstream systems for automated or manual underwriting.

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