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THE CAPCO INSTITUTE
JOURNAL
OF FINANCIAL TRANSFORMATION

TECHNOLOGY

Lloyd's Blueprint Two – the building blocks for industrializing AI in insurance

ALVIN TAN



INSURANCE

#54 NOVEMBER 2021

THE CAPCO INSTITUTE

JOURNAL OF FINANCIAL TRANSFORMATION

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DEAR READER,

Welcome to edition 54 of the Capco Institute Journal of Financial Transformation.

In this edition we explore recent transformative developments in the insurance industry, through Capco's Global Insurance Survey of consumers in 13 key markets, which highlights that the future of insurance will be personalized, digitalized, and connected. Other important papers cover topics high on global corporate and political agendas, from ESG and climate change to artificial intelligence and regulation.

The insurance industry has been undergoing transformation in recent years, with insurers responding to the needs and expectation of tomorrow's customers, for products that were tailored, flexible, and available anytime, anyplace, and at a competitive price.

COVID-19 has accelerated such change, forcing insurers to immediately implement programs to ensure they can continue selling their products and services in digital environments without face-to-face interaction. New entrants have also spurred innovation, and are reshaping the competitive landscape, through digital transformation.

The contributions in this edition come from a range of world-class experts across industry and academia in our continued effort to curate the very best expertise, independent thinking and strategic insight for a future-focused financial services sector.

As ever, I hope you find the latest edition of the Capco Journal to be engaging and informative.

Thank you to all our contributors and thank you for reading.

A handwritten signature in black ink, appearing to read 'Lance Levy', with a stylized, flowing script.

Lance Levy, Capco CEO

LLOYD'S BLUEPRINT TWO – THE BUILDING BLOCKS FOR INDUSTRIALIZING AI IN INSURANCE

ALVIN TAN | Principal Consultant, Capco

ABSTRACT

This paper examines industry conditions within the context of Blueprint Two (BP2), sets out the details and plan to deliver the second phase of the Future at Lloyd's, and considers the wider challenges of industrializing artificial intelligence (AI). It sets out why conditions are ripe for insurers to engage in enterprise AI, and provides an overview of the key challenges that insurers face in doing so.

1. INTRODUCTION

Artificial intelligence is the application of non-biological computational processes to mimic the outcomes of human cognition, learning, and problem solving. It has existed as a concept since the dawn of the computing age and today, AI has come of age due to a confluence of use cases, supporting technologies and the vision to bring to life the opportunities presented by AI.

The field of AI encompasses a fast-evolving collection of tools and techniques that fulfill a range of operations from process workflow to decision-making analysis. Some of the key concepts include:

- **Machine learning (ML):** a field of algorithmic computation where the algorithms themselves automatically improve through iteration. ML models are said to “learn” by training through repeated exposure to different sets of data. ML enables the automation of complex, multivariate decision making and non-deterministic processing of large volumes of data that human beings cannot handle. By doing so, ML enables significant additional capacity for leveraging the value hidden in the data that an organization has access to.

- **Deep learning:** a subset of machine learning that focuses on building large neural networks that can be used to solve problems in vision, language, and more. Neural networks have the advantage over classical decision trees and regression algorithms by being able to better represent what is really happening. Deep learning algorithms are especially useful for facial recognition and speech analytics.
- **Natural language processing (NLP):** a machine learning technique that provides the ability for human speech and text to be interpreted by computers/ AI. It enables unstructured data sources such as telephone calls, free text fields, etc. to be structured for efficient computerized processing, enabling significant opportunities for data mining and operational efficiency.

These techniques are now having a deeply disruptive impact on traditional business models, not least in the global insurance industry. From data quality to governance, strategically harnessing AI poses challenges for insurers not only across product lines and propositions, but also across operating models and decision-making processes.

2. THE IMPACT OF AI ON INSURANCE

The implications of AI on insurance are already being felt in some areas and insurers are having to learn quickly how to deal with them. Some examples of how AI is changing the game in the insurance industry include:

- Integration of AI into underwriting decisions:** AI unlocks value by enabling transformation across the entire underwriting process from broker engagement to settlement. Using algorithms to evaluate and price risk enables the real-time decision making needed to support process digitalization. To leverage pricing automation, insurers need to use AI to automate the broker experience and deliver real-time customer interactions to refine price and coverage. AI-driven customer processes result in significantly reduced transaction times, at the same time as delivering easily accessible decision-making transparency for both management and regulators. A high-profile example of such an approach in the London insurance market (LM) is Ki Insurance: an AI-enabled “follow only” syndicate created in collaboration between Brit Insurance and Google Cloud. Using algorithmic principles that have been successfully exploited in other sectors of the financial markets for some time, AI enables Ki to be a data-led syndicate.
- Building intelligent claims management processes:** the ability of AI to solve complex problems at speed, using machine and deep learning models, is a key enabler of intelligent claims management. AI automates the handling of multiple data sources that inform complex claims management processes, such as the analysis of unstructured data (images, voice, etc.) or the integration of external data sources (market metrics, weather data, ad hoc policyholder data, etc.) into the claims assessment process. The AI-driven system means that the process continually learns from every new claim processed. This insight can be immediately leveraged in the risk model as well as driving ongoing process efficiency and delivering further automation and cost reduction.
- Accelerating digital transformation:** building the most advanced insurance marketplace is founded on achieving seamless end-to-end processes. This is underpinned by digital transformation to enable processing of the vast amounts of structured and unstructured data needed across placement, endorsements, renewals, claims, accounting, and reporting. By embedding AI into digital processes, insurers can accelerate the removal of manual and time-consuming processes that can otherwise hold up or stall digital transformation.

“

Lloyd's Blueprint Two (BP2) reflects the wider market recognition that data foundations are critical not only to AI, but to digitalization in general. ”

3. WHY THE TIME IS RIGHT FOR THE LLOYD'S MARKET TO EMBRACE AI

An AI Forum survey identified that two-thirds of respondents reported the use or active testing of AI solutions for a wide range of commercial use cases, with a similar proportion expecting their AI budgets to increase by at least 25% by 2022 [AI Forum (2020)].

Technology firms such as Amazon, Facebook, and Google have led the way for many years in the use of AI across many areas of their businesses. The usage of AI in recommendation engines by firms such as Netflix and Amazon to enable personalized marketing, improved customer retention, and increased sales, is well documented. These companies have long been mature in their ability to harness AI at scale to reduce customer churn, understand their preferences, and innovate in their product offerings.

While the financial services industry continues to play catch up, regulations, such as BCBS 239, have forced banks to mature the ways in which their data is captured, stored, provisioned, consumed, and managed. This is providing a strong foundation from which banks are increasingly leveraging AI, for example, to find patterns and identify risks in KYC processes.

As these and other sectors have shown, advanced analytics and AI is at the core of any digitalization road map – it is a significant enabler to offering new services to customers and embedding digital workflows at scale. For the Lloyd's Market (LM) there are certainly lessons to be learned from other industries to ensure that AI strategies, roadmaps, and deployment models are best placed to address the challenges of AI adoption at scale.

One such challenge is in building robust data foundations upon which successful AI implementations depend. Lloyd's Blueprint Two (BP2) reflects the wider market recognition that data foundations are critical not only to AI, but to digitalization in general. BP2 signifies a significant opportunity for the

market to create the building blocks necessary to deploy AI at scale, by:

- Embedding data-driven workflows
- Leveraging the standardized data driven by the Core Data Record (CDR)
- Reducing the risk and control cost of managing data on legacy infrastructure
- Enabling data to flow frictionlessly from transaction through to reporting.

Through BP2, Lloyd's effectively articulates a data-driven vision of how the LM will operate in the digital era. It sets out a strategy to accelerate digital transformation and innovation across the market, enabling growth and operational efficiency: "The transformation envisaged by this blueprint is only possible if complete, accurate and timely data is available to support and connect digital processes. It is the quality of this data that makes the difference between an automated process that happens immediately and a manual process that routinely takes days today" [Lloyds (2020), Chap 9].

BP2 is about going back to basics on the mechanics of capturing good quality data from the market. The CDR facilitates collaboration with brokers and managing agents, standardizing the way data is submitted into the Lloyd's ecosystem. This is the start of addressing the inconsistencies, incompleteness, and inaccuracies that plague data currently shared across the market.

Being able to leverage this transformation depends on the LM participants having a good degree of data maturity to facilitate the timely provision of good quality and conformed data. With the strong competition incentive that BP2 offers, this is a significant shift in the sense that participants will have to improve their data architectures and data management processes to adhere to the standards.

In conjunction with BP2 adoption, however, there are several additional factors that are converging to place the LM in a good position for accelerating and scaling AI adoption:

- **Specialty insurance is a business of advanced analytics**

Insurers have long had a deep familiarity and natural affinity for advanced analytics involving prediction and modeling, particularly within actuarial and underwriting capabilities. For the sector, with clearly stated digital and data driven objectives, AI is a logical next step, not a leap into the unknown.

- **Data platform and technology advances**

The timing of BP2 is ideally aligned to modern data architectures that are being enabled by innovative technologies, real-time data, and virtually unlimited cloud processing power. Movement to cloud and digitalization of business processes provides the opportunity to integrate data and processes to leverage AI across the value chain. For the first time, insurers have the opportunity to deploy AI at scale and not just deploy limited value single use cases.

- **Process transformation**

Innovation applies not only to products, but also to the ways in which organizations remove costs. As insurers seek to improve their operating ratios in a commoditized market, applying AI to streamline and automate processes can help insurers gain a comparative advantage over their competitors. For example, the application and improvement of NLP and chatbot technology to handle increasingly complex questions and call handling decisions, is helping insurers progressively reduce operating expenditures in their call centers.

- **Modernization in the middle and back office**

AI offers a critical opportunity for insurers looking to overcome operational limitations and inefficiencies imposed by legacy data and architectures. While AI will not fix data issues at source, AI-enabled real-time data validation, data reconciliation, matching and exception reporting, enables downstream processing to operate efficiently without the need to fix upstream data issues. This enables the replacement of legacy architectures to be further decoupled from the business-as-usual operation of the insurer.

In summary, with BP2 as a cornerstone, insurers can use internal and market forces as a springboard from which higher quality business outcomes can be achieved by the strategic application of enterprise AI.

However, the strong data foundations being pushed by BP2 will not be all that is required to deploy AI at scale. While by its nature AI depends on data, it is more than just a tool or system. AI is an enterprise capability founded on a combination of technology, data, and (human) competences. Furthermore, new risks brought about by increasingly ubiquitous and automated decision making will only heighten concern with the regulator and in the court of public opinion.

DATA STRATEGY



AI DELIVERY



ETHICS & GOVERNANCE



CULTURE & CHANGE



4. FOUNDATIONS FOR SUCCESS

As insurers increasingly move beyond isolated AI use cases towards scaling AI deployments, it has become clear that significant challenges exist in leveraging AI appropriately and successfully. Indeed, it is estimated that half of all AI projects currently fail [McCormick (2020)] because of the complex interplay of a multitude of issues from inadequate data foundations to failure to address the challenges of integration with existing operating models.

To mitigate the risk of failure and realize returns on investment, it is necessary to understand how AI projects need to be integrated into the operational environment of a modern organization. In contrast with traditional analytics, AI projects have specific challenges that require changes not only in delivery mindset and governance, but also in the way in which business users consume and utilize AI outcomes.

Strategically harnessing AI correctly and appropriately involves more than just hiring people with the right skills and increasing the number of CPUs available. From data quality to AI governance, the disruptive impact of AI means that the decision-making culture and data management habits of the organization will need to be shifted, and operating models and processes will need to adapt. The key strategic pillars that require consideration for industrializing AI include:

- **Data strategy: Providing trusted data at scale**

Many insurers are operating with evolved legacy architectures that have had historically weak focus on good data management and governance practice. This causes pervasive data quality issues and highly manual data processes, hampering efforts to digitalize. However, AI applications can only ever be as effective as the quality,

representativeness, and appropriateness of the data upon which they are built. Adopting a scalable approach to storing, provisioning, and managing data is, therefore, key. Insurers need to minimize the marginal costs of both data consumption, and data management and governance. Getting on top of bad data is not simply about remediating data quality issues as they appear – it is also about systematically detecting, making known, and managing the presence of bad data in the first instance, and being able to do so at scale.

- **AI delivery: Applying the right approach to deliver the best outcomes**

Unlike traditional IT projects where executable code is developed and deployed to a production environment, an AI application is data and code. AI deliveries, therefore, have additional considerations in relation to the way in which these must be considered in the development lifecycle. The knowledge and experience required to understand and deliver value from AI is still relatively rare and true expertise is at a premium.

- **Ethics and governance: Ensuring AI outcomes have ownership and are transparent and ethical**

AI outcomes are unpredictable by nature and have additional governance considerations to standard IT governance. Not only is governance required to manage model drift and retain traceability, explainability, and repeatability of outcomes, but there are significant ethical risks in AI adoption. The most significant concerns in this regard lie in the unintended consequences of AI feature design. Data required for these features may not be ethically risky on the surface, but may have hidden proxies to risky data, e.g., life expectancy as a proxy of gender. Pending E.U. regulations, that in a similar manner to GDPR could result in significant fines, highlight the need

for AI applications to be adequately risk assessed and emphasizes the need for adequate governance and risk management to mitigate the dangers of AI being utilized in ethically inappropriate, biased, or non-transparent ways.

- **Culture and change: Adopting and integrating AI into the business**

Augmenting and automating decision-making processes requires a wholesale mindset change and culture shift in the business community. One of the biggest challenges, and where many organizations get it wrong, is in delivering the “last mile”. Even if benefits can be identified, many organizations are just not setup to integrate AI into their processes in efficient and effective ways to realize them. They become insight-rich but outcome-poor as a result, leading to loss of confidence (and investment) in the ability of AI to deliver meaningful change.

5. CONCLUSION

Data and AI are important to the evolution of the London insurance market. The scope of opportunity open to insurers is broad and deep, and critical to their continued success. Successfully integrating and implementing data and AI strategies will enable insurers to benefit from enhanced customer and risk insight, increased revenues, operational efficiencies, and meet head-on the challenges from the insurtech sector. To realize these benefits, insurers' AI strategies will need to consider not only the data foundations upon which AI is built, but also the way in which AI is delivered, governed, trained, and integrated.

The key lesson already learned by other industries is that to optimize the value of AI, firms must focus on economies of scale. Not doing so embeds high cost into meeting any AI objective; and delivery, governance, data, and adoption roadblocks are not strategically resolved for wider implementation. Firms that have focused on reducing the marginal cost of AI implementations have had the most success realizing the wider value from AI.

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Capco, a Wipro company, is a global technology and management consultancy specializing in driving digital transformation in the financial services industry. With a growing client portfolio comprising of over 100 global organizations, Capco operates at the intersection of business and technology by combining innovative thinking with unrivalled industry knowledge to deliver end-to-end data-driven solutions and fast-track digital initiatives for banking and payments, capital markets, wealth and asset management, insurance, and the energy sector. Capco's cutting-edge ingenuity is brought to life through its Innovation Labs and award-winning Be Yourself At Work culture and diverse talent.

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