



Loughborough
University

TECHNGI

Project Conference Thematic Summary and Overview

Technology and Next Generation Insurance Services (TECHNGI)

Held at the Willis Towers Watson auditorium in Lime Street, London EC3, on Nov 26th, 2019. We are grateful for the support of Willis Towers Watson for this event.

This summary and report has been prepared by Alistair Milne and Alex Zarifis. Thanks to Ian Herbert for his detailed proof reading and comments. This version April 20th, 2020.

We have also prepared a separate transcript of the proceedings of the day including key slides and the tabulation of responses to four Q&A audience response sessions.

Our research project Technology and Next Generation Insurance Services TECHNGI (www.techngi.uk) investigates the opportunities and challenges for the UK insurance industry arising from new AI and data technologies. TECHNGI is funded by Innovate UK and the Economic and Social Science Research Council (grant reference ES/S010416/1) as part of the £20mn Next Generation Services Research Challenge www.ukri.org/innovation/industrial-strategy-challenge-fund/next-generation-services/ This conference was a key part of phase-A of this research project, investigating the landscape for adoption of AI in the UK insurance industry. It is being followed by Phase-B empirical investigation of the barriers and enablers of adoption and Phase-C development of practical frameworks and solutions to realise the benefits of AI and related data technologies.





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Thematic summary

This introductory section summarises the key takeaways from this one-day event, drawing out themes from the discussion that took place over the day enhanced by our own understanding of the current technology trends in the industry. This summary is an *interpretation* of the lessons of the day by the two authors. Those who want to fully engage with the outputs of the day are encouraged to read also what then follows: an overview of the event together with a transcript of the presentations and links to the videos of the event. Together these will enable them to reach their own judgements about the different themes.

Theme 1: Data is central.

A major theme, perhaps the most important of the day and expressed by a number of contributors, is the key role of data in supporting automation and the application of AI to what would previously have been considered human tasks and responsibilities. There are several dimensions to this.

- AI technologies are data hungry, requiring access to large volumes of documents, images, audio recordings or operational data for training of the software. It is the explosion in availability and accessibility of such data that creates the potential for an “AI” revolution in business and public services.
- At the same time there is (to use an IBM strapline quoted in the morning of the conference) no AI without IA i.e. without information architecture. In all large organisations data is typically siloed, trapped within particular business lines and supporting operational systems (very often legacy systems with limited and inflexible channels for data input and output). This is a prominent challenge in the many large insurance companies, where many different departments are responsible for operational delivery, and where business acquisitions have resulted in incompatible legacy systems doing the same tasks for different customer and product segments. A prerequisite for implementing AI at an organisational level is strong and effective data strategy and data governance.
- Automated access to data is a substantial challenge. Some earlier adopters have naively thought that AI can offer a solution to the messy work involved in integrating different sources of operational data (“a robot that reads”) but this is a misapprehension or at least an oversimplification. While AI tools such as natural language processing may help make sense of unstructured data, held in pdfs, recordings or images; much of the most relevant data held within a firm and required for automation of operational tasks is structured but trapped. Painstaking work is required to unlock data, by labelling or standardising it so it can then be machine processed and support automated processing and intelligence. Not doing, means putting “garbage in”, thus creating “garbage out”.
- These challenges are even greater for sharing of data between firms, because each firm has its own individual processes and definition, incompatibilities abound.



- There may be scale barriers, where only the largest firms are adequately placed to manage their data and take advantage of the opportunities (though fragmented legacy systems may be a countervailing frustration for large firms).
- Further challenges in the automation of data access apply to accessing reliable, actionable customer data. AS illustrated by contributions to our conference, this is an area where insurtech start-ups are making a major contribution. One example from these presentations, DigitalFinePrint supports an integrated 360-view of available open source, public and private data on small- and medium- sized companies, something which is proving very valuable to the marketing of insurance products and support for risk assessment. Another CyberSentinel is providing ‘light footprint software’ for corporates to assess their exposure to cyber risks and for insurers to manage and price cyber risk policies. OneZeroMe is building a ‘consumer centric’ risk bureau that ensures individuals retain control over their personal data, whilst also allowing it be shared selectively with their permission to vendors of credit and insurance products, including auto and health insurance. Facilitating access to new insurance relevant data is a key selling point of many other insurtech start-ups (including from the cohorts that have passed through the Lloyd’s Lab).
- In addition to the challenge of making data machine readable, is the further challenge of maintaining appropriate control and permissions for access to and use of data. This is an obvious issue for personal data, for compliance with GDPR and also for building trust in automated processing. Financial Regulators are responsible for protection of customers and concerned about potentially discriminatory pricing in the form for example of ‘red lining’ with higher costs for residents of some locations. They are therefore also concerned with the use made of personal data. Controls and permissions are not just an issue for sharing of personal data. While there are some obvious commercial opportunities for sharing data between firms, operational data is a critical commercial asset on which competitive advantage is based. While there is an obvious case for the sharing of some forms of data, e.g. to build automated systems for reducing fraud, the business case for other forms of data sharing is less clear, do the commercial benefits outweigh the potential loss of control over proprietary data?
- There are technological solutions to problems of data access and control. Application programming interfaces (APIs) are being developed to support more flexible and standardised channels of data communication. Cryptographic controls of the kind embodied in distributed ledgers can support precise controls over access to data.

Theme 2: Many and varying technologies, but the focus must always be on application.

AI is not one thing. There are a wide range of technologies that can be included under this umbrella term – including forms of rules based software automation claimed as AI, even though they are not really “intelligent” (i.e. are not trained on and do not learn from data). Such loose

interpretation is used simply as a means of allying efforts at innovation with what is a current hot technology trend.

- The range of technologies associated with the AI is a potential source of confusion. On first considering the business use of AI, practitioners may ask “what exactly is the technology should I be using, it is so varied”, but this is the wrong question to be asking. The starting point must always be the business problem: “where is the market opportunity, or the operational efficiency gain from the automation of data processing and/ or utilisation of new data?”
- With the focus on application, the next questions to ask are about: 1) the nature and shortcomings of the task which could be enhanced by use of technology: and 2) the new opportunities created by access to previously unavailable sources of data. These applications are often specific or narrow, a familiar part of current insurance operations. Well established, older less data hungry ‘static’ software solutions may have already been employed, at least for some applications. But the greater availability of data is now opening up opportunities for new solutions, such as image and voice recognition and chatbots, that use data to learn and improve, in customer interfaces; or for natural language processing (NLP) in operations such as first notification of loss, claims processing, fraud detection or regulatory compliance.
- Within this broad theme of enhancing the efficiency of existing insurance operations or customer experience, there are then two distinct broad areas of AI application:
 1. In retail insurance, delivering a range of products – vehicle, property, travel, health, pet and other product lines in large volume and with frequent but small claims (B2C insurance, but it also includes the small business market). Here the volume of data, both in transactions and customer engagement, creates a wide range of potential AI applications based on underlying machine learning algorithms, offering for example quantitative data analysis or pattern recognition
 2. In higher value but less standardized global commercial and specialised insurance markets (B2B insurance). Here automation and use of new data sources also offer major opportunities, but the lower volumes of data mean that different technology solutions are appropriate. Without the myriad of data points required for standard machine learning algorithms, other approaches have to be used, for example opportunities of “transfer learning” where the software adapts and learns as it shifts from one context to another, or “curated” or “guided learning” where structure is imposed with the help of human domain experts to allow meaningful modelling with limited numbers of observations.

As well as these opportunities for improving operations and services offered by incumbents, a large number of insurtech start-ups and disruptors are pioneering new commercial opportunities. Again these are more often (but not always) in the large volume, low policy value space, including new products that depart from the conventional annual policy structure, such as liability insurance on short, defined periods in the case of occasional employment, or immediate real-time data based loss assessment, for example for flight delays. They may interact directly with



customers or they may provide data inputs that allow incumbents to improve the products they offer.

Many of the current operational opportunities for UK insurers are in employment of natural language processing NLP, to support more rapid execution of standard previously human operated processing. This is exemplified by another conference presentation from Expert system. They are not a start-up but a long-established public firm (listed on the Milan stock market) specialised in NLP with several UK insurers adopting their Cogito NLP platform for automation or semi-automation of operational processes. In their conference presentation they mentioned a variety of applications including contract administration, claims management and adjudication, fraud detection, broker agent interaction, and distribution including customer journey and submission automation.

A related question is about the impact of AI and other data technologies on strategy, organisational structure and business models in insurance. There is the possibility for dramatic change. One illustration is the emergence of comparison websites. These have transformed the distribution of retail insurance in the UK (but this is not a universal, in other jurisdictions for example Germany, retail brokerage has retained its hold on distribution). There are further examples of dramatic insurance business model innovations in China, notably by Ping An who leverage their dominant web position and digital distribution to achieve huge scale in Chinese automotive, health, buildings and other insurance segments. New players may seek to disrupt by taking substantial market share from incumbents (the efforts by Tesla to provide motor insurance based on the data they capture from their vehicles is an example).

Less dramatic but equally important may be the required changes in strategy and organisation in response to new technologies. It is a real challenge to align an entire organisation on digital innovation. Some parts or the organisation may run ahead of others. The traditional division between operations and IT can act as a major block on innovation. Digital may be a separate playground, with the digital children given little opportunity to move beyond proof of concept and develop commercial applications.

It is difficult to foresee all the structural and organisational consequences of the new technological opportunities. It is likely that larger and more immediate impacts will be in the retail/B2C space; but B2B is a competitive global market. Without adaption even major established providers could lose market share to other competing jurisdictions. A number of contributions highlighted the "The Future at Lloyds" program and its central role in promoting digitally enabled interactions between customers, brokers and underwriting syndicates in order to maintain the position of London as the leading global market for specialised and commercial insurance.



Theme 3: The emergence of a richly populated insurance ‘ecosystem’.

The explosion of Internet, mobile and e-commerce of the course of past quarter century has been based on sharing of data in standardised formats supporting delivery of a variety of product and services – such as mobile telephony, search, consumer information, sales and auction platforms and payments – all linked together through multiple focused providers. The interdependence of these products and services has led them often being described as an e-commerce ecosystem.

Many of the conference contributions spoke about the ongoing shift in this direction within insurance, away from encompassing insurance delivery by large firms, internalising all their operations from customer acquisition to claims settlement, towards cooperation between service providers supporting different elements of the value chain.

This in part is a consequence of underlying changes in data availability and data management. Taking full advantage of the new available data and opportunities for automated processing, means increasing reliance on external data providers and data infrastructure services. It has also meant, in retail distribution, a shift to platformization through price comparison sites and to ‘white labelling’; that is providing products tailored to specific customer affinity groups through third party branding. A consequence has been a technology enabled shift in market power from providers to customers.

The review of the start-up space by Tzamaret Rubin and Michiel Van Meeteren at the conference similarly highlights the emergence of such “ecosystems”. This is evidenced by the interconnectedness of insurtech start-ups, as indicated by the clusters of and commonalities between firms that emerge from examining the technologies they employ. Similarly, the work of the Lloyd’s Lab illustrates the potential for synergies both amongst start-ups and between start-ups and incumbent brokers and insurance carriers.

While these shifts are most evident in the retail/ B2C space it may also be the direction of travel in B2B insurance, with data standardisation leading to changes in the commercial relationship between brokers and underwriters. Here data standardisation and automation are increasingly can support more efficient execution of the more standardised elements of the insurance contract and insurance operations, allowing London market participants to focus on the more tailored and bespoke elements such as the analysis and pricing of risk where their professional judgements add most value.

Theme 4: Regulation is key.

The conference discussions highlighted what could be described as an ambivalent attitude of regulators towards AI and other data technology innovations. While broadly supportive of innovation, the UK FCA ‘sandbox’ is a leading example now followed by regulators in other jurisdictions, regulators are also alert to potential problems with new technologies, including potential bias or discrimination and the lack of transparency about what underlies the outcome



of AI driven decisions, especially when applied to customer facing processes or for assessment of risks.

The application of technology to regulation and supervision – RegTech and SupTech – is an opportunity, both for regulators to learn about technology and also for thinking about what changes in the process of framing and applying regulation will be needed in a more digitally and technology enabled business environment. There is a large agenda for discussion, covering both existing regulatory compliance but also the role of regulation of the new technologies especially in consumer facing applications.

Theme 5: Many moving parts.

The discussion in the final conference session, reprised earlier insights about organisational barriers to implementation of AI and other data technologies. Technological change within organisations has often been problematic with a litany of project failure, for many reasons, most notably failure to accurately state the systems requirements. An effective approach requires both a longer term vision (what one speaker described as the futures funnel vision, precise in the near term, broad in outline in the more distant future), ensuring cross-organisational understanding of where the changes in technology and data are leading. Careful steps along the road, making sure all involved are engaged, educating and informing, overcoming concerns (potentially a win-win, not replacement of humans by robots, but removing the dull repetitive tasks, making jobs more interesting and fulfilling).

One useful framework for addressing these challenges may be a “systems of systems” approach, distinguishing the different levels of operation. At the lowest or most discrete level sub- or operational- systems that provide well defined contributions to business process, and can be most directly supported by automation; the organisational functions where these systems are linked together at the highest level the organisation or insurance market as a whole. While this framework is only schematic, not precise, it does point towards substantial benefits from adopting good practice towards digitalisation and automation. Such good practice can include: (i) modularisation of different sub-systems, through e.g., APIs and data standards, making it easier to introduce innovations without unintended consequences at a higher level; (ii) keeping an eye on the operation of the whole, recognising that changing parts may lead to new and unpredictable emergent outcomes, so evolving carefully; (iii) avoiding “command and control”, recognising that with so many partially independent component systems and sub-systems, no one has complete understanding of the whole and that effective innovation must rest on persuasion and bring everyone (or at least almost everyone) to buy into the program of change.



Theme 6: Successful implementation requires trust and effective communication

A further theme that emerged across the conference is the necessity for successful implementation to take into account broader softer issues. Two of these seem especially important:

- Concern about the transparency and trustworthiness of these new technologies. Is it clear what drives outcomes? Are there concerns about potential bias or discrimination and how will these be dealt with?
- Communicating a realistic view of the capabilities and limitations of the new AI and data technologies can. There is much misunderstanding and potential for suspicion or disillusion.

Addressing these implementation risks requires development of the appropriate language and understanding for realistic and informed discussion. Technical communication of the supporting computer science to a broader audience is only one element. There must also be effective communication of covering both operational application and broader ethical and trust perspectives. Within an organisation, individuals in a variety of different roles must develop a shared understanding of any data technology innovation project, its requirements and implications.

Associated with this is the need for leadership and governance at the organisational level. Senior management must have enough understanding to be able to deal with conflicts and resolve misunderstandings, including over the governance and control of data and data technologies.

These implementation challenges are an opportunity for independent researchers. The requirements are for a holistic approach to the adoption of these new technologies, taking account of data challenges and business opportunities but also sensitivities about the impact on the organisation, staff and customers. This in turn means there is a widespread need for analysis and insights drawn from cross-industry case studies, failures as well as successes, and independent assessment of how to make progress in data technology innovation, dealing with the broader organisational, ethical and regulatory challenges. Much remains to be done.

Overview of event with video links

The TECHNGI project held its first major event, a conference at the Willis Towers Watson auditorium in the City of London on Nov 26th, 2019.¹ The presenters were academics and professionals engaged in the insurance sector, particularly in relation to new technologies. The presentations, panels and posters were divided across the four following themes:

Session 1: Perspectives on Artificial Intelligence

Session 2: Business Models and Innovation

Session 3: New technologies and new providers

Session 4: Regulatory and organisational challenges

The audience also participated and offered some insightful comments. Here we provide an overview of what was discussed.

Welcome and opening remarks

Stephen Browning (UK Research and Innovation (UKRI) / Innovate UK)

Stephen works for UK Research and Innovation (UKRI) and is the Director of the Next Generation Services programme that supports the accountancy legal and insurance sector. He gave some background on the motivation to fund this research and how it should help the UK insurance sector moving forward. He also elaborated on the importance of AI and data technologies to these areas. He sees these technologies as having strategic importance. The research in this project along with its two sister projects is intended to better understand the barriers and enablers to utilizing AI and data technologies.

Andrew Harley (Willis Towers Watson)

The director of Willis Towers Watson gave an overview of the activities of his organization focusing in particular on the Willis Research Network and how collaboration on research projects like

¹ The Technology and Next Generation Insurance Services research project at Loughborough University (www.techngi.uk) investigates the opportunities and challenges for the UK insurance industry arising from new AI and data technologies. TECHNGI is funded by Innovate UK and the Economic and Social Science Research Council (grant reference ES/S010416/1) as part of the £20mn Next Generation Services Research Challenge www.ukri.org/innovation/industrial-strategy-challenge-fund/next-generation-services/.



TECHNGI is very important to the organization. The main research collaborations WTW had in the past were related to the climate and he is very pleased to now also be part of this research on AI. From his organization's perspective, firstly they want to gain a better understanding of how AI can be used in insurance and secondly, what the role of start-ups is in this. He emphasises how important it is for WTW to be a leader on using these technologies.

Video: <https://vimeo.com/377348423>

Session 1: Perspectives on Artificial Intelligence

Chair: Michael Mainelli (Z/Yen)

1.1 Michael Mainelli (Z/Yen).

The chair of this session spoke about his experience with machine learning. He noted that the algorithms had not developed drastically since the 70s and it was the accessibility to data, processing power and ubiquity of computing that had the most significant change. The data volumes and accessibility to them has changed dramatically.

1.2 The journey to AI: Mike Hope (IBM)

The CTO for IBM for insurance spoke about the AI journey. He elaborated on what AI is and its different forms. He added some granularity to the term AI by distinguishing between augmented intelligence, cognitive systems, expert systems and robotic automation. He then emphasised that it is the progress in machine learning that is the most significant. He identified that the fundamental challenge is firstly the data. Another fundamental challenge is that machine learning in its nature is not deterministic. He then went through some examples of current implementations. One example was RBS using chatbots for their call centres. He concluded by asking whether we were at an inflection point in the industry.

Video: <https://vimeo.com/377349107>

1.3 A view from the research frontier: Dr David Lopez (Exeter University)

This researcher focused on a specific AI technique referred to as Transfer Learning. He started by making the point that there is potential for AI but we need to work towards realising it for insurance.

He considers that AI 2.0 should be able to learn from less data and be able to generalize to unforeseen circumstances. AI systems need to become more flexible. He considers that until AI can be more flexible and learn with smaller data sets Google, Amazon, Facebook, IBM and Microsoft will be leading.

Video: <https://vimeo.com/377348702>

1.4 Panel: Practical application of AI and Data Technologies

Dave Ovenden (Willis Towers Watson); David Lopez (Exeter University), Mike Hope (IBM); Prof. John Armour (Oxford University)

Michael Mainelli went through several questions from the audience and chaired the discussion. In addition to the three previous speakers John Armour and Dave Ovenden came to the stage for the panel. John Armour works on a sister project to TECHNGI that focuses on AI in legal services. Dave Ovenden leads WTW consulting in related to insurance pricing, claims and underwriting. John Armour explained how this sector has different challenges to those David Lopez outlined as they usually have extensive data, for example in relation to contracts, that needs to be labelled by human lawyers before it can be analysed. These large fixed costs mean that only large law firms can fully utilize AI. He put forward the solution of a cross sectoral platform. Dave Ovenden distinguished between structured and unstructured data on the one hand and being able to give an answer or inform a decision on the other. He discussed how being able to inform decisions based on unstructured data was particularly interesting now. He agreed on the challenge of unstructured data and elaborated on how they augment unstructured data, so it is more useful.

The rest of the discussion span across technical, economic and ethical aspects. David discussed how monitoring social media might be necessary to avoid dangers like bullying. The benefits of AI for unstructured data were further discussed. Provability and replicability were also covered. Mike Hope emphasised the importance of an organization and a professional not only using one tool but having many options. The discussion followed on to how training AI required data and whether organizations should do this internally or externally.

Video: <https://vimeo.com/377349489>

Session 2: Business Models and Innovation

Chair: Professor Roger Maul (Exeter University)

2.1 AI and insurance business models: Prof. Chris Holland (Loughborough University)

Professor Chris Holland distinguished between specific and general tasks and adaptive and static algorithms. He gave some examples of how most AI systems are currently specific while in the future they can be more general. He then made the point that in the future AI can improve in two ways, firstly by improving the specific AI algorithms and the general AI algorithms. He went to discuss how in the future there will be more standardisation. Some of this research was carried out with Dr Alex Zarifis.

Video: <https://vimeo.com/377350614>

2.2 Panel discussion: Insights on artificial intelligence and business models in insurance

Alaister Moull (PWC); Jayne Lansdell (BGL); Prof. Gianvito Lanzolla (Cass Business School); Prof. Chris Holland (Loughborough University) Andrew Harley (WTW)

Roger Maul then chaired the panel session. In addition to the previous speaker Alaister Moull, Jayne Landell and Gianvito Lanzolla joined. Alaister Moull is the AI lead in financial services for PWC. He emphasised that the data technologies have changed recently giving the example of natural language processing. Gianvito Lanzolla discussed a study he did on the adoption of AI since 2006. He explored how banks and insurers change by this adoption. Andrew Harley is interested mostly on how AI is implemented currently and how to improve managing machine learning. Jayne Lansdell expanded on the previous points and added the importance of the right talent and the right regulation. She also discussed how they made the transition from their legacy system to be able to utilize AI more fully. The panel elaborated on the challenges but emphasised the breadth of opportunities for AI in insurance and that it is an exciting period.

Video: <https://vimeo.com/377350905>



Session 3: New technologies and new providers

Chair: Rachel Gore, Intelligent Insurer

3.1 New Insurance Technologies: Ed Gaze (Lloyd's Lab)

Ed Gaze explained how Lloyds Labs operates and how it supports Insurtech companies with new ideas to develop the Lloyds market. He elaborated on how they start by identifying the challenges the Lloyds market has. Once they identified the challenge, they then scout to identify the right insurtech's to work on it. Once they identify the most promising ones, they work with them to find solutions. Last year they went from 250 applicants to 24 teams that were invited to pitch. Those that were voted in by 80 people then worked for ten weeks with sixty mentors. The quality and diversity of the mentors is a huge benefit to these Insurtechs and it helps them develop over this period. At the end of this period, they demonstrate their work and they may then gain further investments.

Video: <https://vimeo.com/377353343>

3.2 The Insurtech startup landscape: Dr Michiel Van-Meeteren

Michiel Van-Meeteren discussed his work on the TECHNGI project. This work was carried out with Dr Tzameret Rubin. He started by asking the question how start-ups are changing insurance. He then introduced some basic categories in evolutionary economic geography. The third thing he covered was his analysis of the AI industry space. He then focused on the London ecosystem of start-ups. He used some diagrams to show the connections between the start-ups in insurance.

Video: <https://vimeo.com/377352855>

3.3 Presentation of four Insurtech case studies

There were short presentations by three insurtech startups and one more established technology provider. These were Digital Fineprint, OneZero-me, INSURETECHNIX and Expert System. The founder and CEO of Digital Fineprint Eric Abrahamsson gave the presentation. Digital Fineprint offer a data asset on UK SMEs that is already used by AXA, RSA, QBE and HISCOX. OneZero-me builds a global, consumer centric risk bureau that leverages data mobility to provide consumers with a safe encrypted financial passport. The presentation was given by Dr Yossi Borenstein. INSURETECHNIX transforms the cyber-insurance market with their solutions. The presentation was given by John Clarke. The more established insurance provider was Expert System and the presentation was given by Ian McLoughlin. Expert System are at the forefront of implementing AI for insurance providers in the UK.

AI Next Gen Session 3 - Case studies - v1

<https://vimeo.com/377352039>

Session 4: Regulatory and organisational challenges

Chair: Matt Cullen (Head of strategy data and analytics at the Association of British Insurers)

4.1 Digital Technology and AI - regulation and regulatory compliance in banking and insurance: Prof. Alistair Milne (Loughborough University)

Prof. Alistair spoke about automated regulatory compliance, in particular lessons from RegTech in banking and applications to insurance. Some detail was given on automated regulatory compliance. This was work done with Andrea Miglionico and Joseph Watson. He introduced some preliminary ideas based on ongoing work. He said that regulation would influence the adoption of AI and data technologies. The goal was to explore the potential for AI and data technologies for reducing regulatory compliance costs in insurance. He then covered six points: Firstly, how the volume and cost of regulation make this particularly important for RegTech. Secondly, he gave more detail on RegTech. Thirdly, the application areas in insurance were covered. Fourthly, some lessons from banking that can be useful in insurance were discussed. Fifth the barriers were elaborated on. Barriers were a common thread through the event and it was beneficial how several people added to this. Finally, the sixth thing covered was how this research will move forward.

Video: <https://vimeo.com/377353916>

4.2 Regulatory compliance and Regtech: Tim Shakesby (EIOPA)

Tim works for the European Insurance and Occupational Pensions Authority. He spoke about the regulatory and organizational challenges caused by new technologies. He gave an overview of what the organization does and the European perspective they have. Their efforts are on the coordination within the EU and getting supervisory alignment. They encourage convergence on regulatory terms and supervisory practices. He explained the importance of consistent outcomes for policy holders and other stakeholders. He believed that with fast technological progress it is necessary to take a step back and discuss the issues with people from different countries.

Video: <https://vimeo.com/377355329>

4.3 A systems perspective on the adoption of AI: Dr Melanie King (Loughborough University) Melanie spoke about applying a systems perspective on developing enterprise AI capabilities. She explained how her background in engineering, software engineering, systems architecture and digital innovation are useful for looking at these issues. She spoke about what works and what does not work at the core systems level. She spoke about systems of systems and the typical reasons for them failing or succeeding.

Video: <https://vimeo.com/377354263>

4.4 Panel discussion on the enterprise view of AI and data technologies in insurance Initial presentation by Dr Melanie King (Loughborough University). Panel Craig Civil (Lloyd's Data Lab); George Zarkadakis, (Willis Towers Watson), Tim Shakesby (EIOPA); Melanie King.

The two previous speakers were joined by Craig Civil from Lloyd's Data Lab and George Zarkadakis from WTW for the final panel discussion. Matt Cullan moderated the discussion, relayed some questions from the audience and also made some of his own questions. The broader issue being discussed was what capabilities does an enterprise need to successfully adopt new AI technologies. Craig Civil spoke about two AI projects he implemented. These two projects are now beyond the proof of concept stage. He spoke about several challenges starting from identifying which aspects of AI could be used for Lloyds, who is both a regulator of the market and regulated. They first chose to implement natural language processing and identified which business owners would be interested. They then built teams including suppliers to work on the project. Finally, after around three months they presented their progress to illustrate the improvements they made. They found it equally important to have a good technological solution and to convince everyone at Lloyds of the benefits of the AI. George Zarkadakis added his thoughts and experiences to the theme of change management. He spoke about how many organizations, not just in insurance are trying to utilize AI more extensively. He considers it critical to put a lot of thought into bringing the right team of people together. He wants to make organizations that are responsive to change but also resilient. He sees organizations using a combination of robot tasks, tasks augmented by robots and human tasks. Melanie king emphasised the importance of being agile as an organization. Tim Shakesby spoke about how regulators need to strike the right balance and not react too quickly or too late.

Video: <https://vimeo.com/377354735>



4.5 Summarizing the key questions that came up today: Dr Ian Herbert (Loughborough University)

Dr Ian Herbert attempted to summarise the key points from this event. He separated them into perspectives on AI, regulatory and organizational challenges, business models and innovation and lastly new technologies and new providers. He spoke about how in some cases industry is leading technology and in other cases technology is leading industry. He put some questions to the audience around AI adoption and encouraged them to submit their thoughts through their phones and the Sli.do software. For around ten minutes he encouraged the guests to participate and discussed some of the input as it came up on the screen. This was a nice way for everyone involved to share their thoughts based on what was said.

4.6 Event Wrap up and concluding remarks: Prof. Alistair Milne (Loughborough University)

Professor Alistair Milne wrapped up the event up by thanking everyone involved in making it possible. He gave the metaphor that AI is like the shining banner to rally around in a battle, but it is more like a symbol for changing business and people to become more digital. He then spoke about how the TECHNGI is moving forward, that they have completed the first stage of the studies and they are now focusing on more empirical research to test the initial ideas.

Video: <https://vimeo.com/377353678>

Two posters presented by the TECHNGI project at the event

First poster: 'Insurance loss data – a useful common metric to allow insights into multi-hazard environments: Have you tried sharing this, succeeded or failed?' By Dr John Hillier

Insurance is one important aspect of providing resilience to various natural hazards (e.g. flooding, extra-tropical storms, hurricanes). Providing natural hazard insurance reliably, accurately and fairly is underpinned by robust, peer-reviewed environmental science. Collaborations between practitioners and university-based scientists try to enhance risk assessment models, however, they could be more frequent and effective. In theory, sharing data (e.g., claims or losses) is a common metric that may allow multi-hazards environments to be better assessed. In practice, difficulties exist, might be overcome by a range of options. The poster covers some initial thoughts on both difficulties and potential solutions for establishing collaborations between scientists and insurers. More importantly. Feedback on the issues raised in the poster was encouraged.



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Second poster: 'The four business insurance models that are optimised for AI' By Dr Alex Zarifis

The poster showed four business models that captured four different dynamics towards using AI in insurance. In business, and insurance in particular, it is necessary to adopt a business model that is proven. The research presented explored the business models used today in insurance that utilized AI and big data. Four categories were identified: (1) Focus and disaggregation (2) Absorb AI into business model (3) Incumbent expanding beyond current model to fully utilize AI (4) Disruptor with strong AI capabilities entering insurance.

