Banc Ceannais na hÉireann
Central Bank of Ireland
Eurosystem

Data Ethics Within Insurance

August 2023

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Introduction

The "Future Focused" theme of the Central Bank of Ireland (the Central Bank) strategy states that we seek to adopt a forward-looking approach, anticipating and responding proactively to changes in the economy and the financial system. Forward-looking risk assessments undertaken by the Central Bank identified increasing digitalisation across the insurance value chain as an emerging risk within the insurance sector. For this reason, the Central Bank has undertaken research in relation to this area, with a particular focus on ethics as part of digitalisation.

The insurance industry has long been data-centric, with data-led decision making at the heart of insurance risk assessment, underwriting, and claims management. The rapid and ongoing advancements in digitalisation (referred to later in this document, and in the research project which this report is about, as the use of Big Data and Related Technologies (BD&RT)) presents increased opportunities for, amongst other things, the collection and processing of more granular and personalised data to inform firms' decision making and for more efficient business processes, which can result in benefits for consumers and firms.

However, with these benefits comes the potential for new or increased risks, including:

- The inappropriate use of data and technology, which could give rise to unfair treatment of, and ultimately negative outcomes for, consumers e.g. bias, inappropriate use of personal data, and data privacy concerns
- The inappropriate integration, oversight and management of digitalisation within the operational and organisational structure of firms.

In this context, the Central Bank undertook a research project, the Data Ethics Within Insurance Project (the DE project), which aimed to further develop the Central Bank understanding of the nature and

"The benefits arising from AI in terms of prediction accuracy, automation, new products and services or cost reduction are remarkable.

However, there are also growing concerns amongst stakeholders about the impact that the increasing adoption of AI could have on the financial inclusion of groups of protected classes or vulnerable consumers or on our society as a whole."

EIOPA: Artificial Intelligence Governing Principles: Towards ethical and trustworthy artificial intelligence in the European insurance sector.

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extent of the use of BD&RT generally and across the insurance value chain and the consideration of ethics as part of that.

DE was a technical support project implemented by European Commission – DG REFORM and supported by KPMG as delivery partner under the Technical Support Instrument (TSI) of the European Union. The project was conducted over 2021 and 2022.

This report seeks to share some of the key insights gained from the project and set out, at a high level, some of the Central Bank's initial observations on those insights.

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Research Conducted

Background

As mentioned, the DE project involved an in-depth study into the use of BD&RT across the insurance value chain, with a particular focus on ethical aspects. This work forms part of the Central Bank's broader work on the themes of digitalisation and innovation in the financial sector. Other related work includes:

- The *Digitalisation in Insurance Survey*[1], which sought to develop a high-level understanding of the broader adoption and impact of, including governance around, digitalisation across the insurance value chain. The report on this survey was published in May 2023.
- Active contribution to the work of EIOPA and IAIS in the areas of digitalisation, innovation and Artificial Intelligence (AI) (more details on relevant initiatives are provided later in this paper).
- The Review of the Consumer Protection Code[2].

These initiatives have already helped to inform and influence the Central Bank's thinking in this area and will, together with the learnings from the DE project, continue to inform our approach to supervision and policy development.

Approach Taken

As part of the DE project, desktop research and workshops were used to identify the uses, benefits and risks of BD&RT generally for insurance firms. This analysis then informed questions to be included in a data collection exercise which was conducted to explore, more specifically, how firms supervised by the Central Bank are currently using BD&RT across the insurance value chain, and how they plan to use it over the next three years. The data collection exercise involved:

[1] Digitalisation in Insurance Digitalisation Survey
[2] Consumer Protection Code Review

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- Selecting a range of firms supervised by the Central Bank, covering life, non-life, health and reinsurance[3].
- Then collecting the data using both a survey and complementary interviews based on the analysis undertaken through desktop research and workshops.

In addition to identifying existing and intended uses of BD&RT, the DE project sought to identify potential benefits and risks for both consumers and firms associated with that use of BD&RT.

[3] Twelve firms, which together accounted for 38% of the market by gross written premium at year-end 2021 including some larger and some smaller firms, participated in the data collection exercise.

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Key Findings

Uses of BD&RT

This section sets out some of the key findings from the DE project related to the current and planned use of BD&RT within the insurance sector.

Uses Across the Insurance Value Chain

The research showed that most firms were, to some extent, either already using BD&RT within their businesses and across the insurance value chain or they expected to do so within three years. In the case of firms that noted an expectation to use BD&RT within the next three years, the majority of these were in the research stage.

More specifically, it showed that all firms were currently using, or planning to use, BD&RT within the pricing and underwriting stage. In addition, most firms were already using BD&RT, or intended to use it within three years, at the sales, distribution and marketing stage.

The DE project asked firms to consider the impact to date of the use of BD&RT on various stages of the insurance value chain, exercising their expert judgment in their interpretation of the impact. In response, the majority of firms considered that it had the largest impact on the pricing and underwriting stage, followed by the sales, distribution and marketing stage. Other areas noted as being more impacted were the product development and claims management stages. The stages of the insurance value chain that firms considered to be least impacted to date were fraud detection and the post sales services and assistance stages. Responses to the question of expected potential impact within three years were similar to those on the impact to date. Responses from reinsurance firms indicated that they were less likely to use BD&RT than direct writers, albeit a number of uses within these reinsurers were nonetheless noted.

Uses of BD&RT - Data

The DE project explored the types of data used by firms and identified the use of:

- Traditional data, such as loss data (for example claim reports from accidents, liability cases) population and demographic data

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- Other/non-traditional data such as:
- Firm's own digital data (for example, data acquired through interaction with consumers such as through call centres and online behaviour)
- Geocoding and location tracking
- Online media data
- Other digital data.

It found that the most common types of traditional data used included; loss data, population data, and demographic data obtained from both internal and external sources.

In respect of other/non-traditional data, it found that firms' own digital data, geo-coding and online media data were already in use by firms to some extent. The responses also suggested that the use of Internet of Things (IoT) data is where most firms expected to expand within the next three years. The sources of other/non-traditional data were similar to those for traditional data.

Uses of BD&RT - Related Technology

The uses identified, via the desktop research and workshops, across the stages of the insurance value chain, are set out in Appendix 1. These uses were then explored further as part of the survey and follow-up interviews. The survey also provided the option for firms to identify where they were using BD&RT outside the insurance value chain. The responses identified potential or actual use in processes such as; reserving, HR and recruitment processes, expense allocation, capital management and financial reporting, etc.

The most common current and planned use of BD&RT in product development is the use of AI or other BD&RT on various forms of data, with some firms also currently or planning to use it for predictive modelling.

Pricing and underwriting is the stage in the insurance value chain where firms assessed the greatest impact of BD&RT. The majority of firms were already using automation to some extent in the underwriting process and also in their risk assessments.

The most common uses reported within the sales, distribution and marketing stage were website monitoring and communication with

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customers. Use for sales and personalised advertising were also common. The majority of firms were currently or were planning to use BD&RT in the post-sale services, mainly related to process automation and customer self-service tools.

Finally, the most common current use within the claims management stage was for claims settlement, and the majority of firms expected to use BD&RT within claims processing and management in the next three years. The most common area of current and planned use related to claims fraud management was for claims scoring and anomaly detection, where the majority of firms were at research stage.

Where firms expected to use the BD&RT technology within three years, the majority were in the research stage with some at proof-of-concept or prototype stage (particularly for sales, distribution and marketing). Most firms used a combination of in-house build (including within Group) and off-the-shelf or outsourced resources to build the solution, although the main source for sales, distribution and marketing and post-sale services have been off-the-shelf tools.

Observations

The research confirms that the use of BD&RT is already present across the insurance value chain and appears set to become more widely utilised over the next few years. The impact of the use of BD&RT appears to be greater within certain stages of the value chain, e.g. in respect of pricing and underwriting.

The Central Bank notes that these findings are consistent with EIOPA's findings in its thematic review in 2019[4] where it reported that in the European market there is a strong trend towards increasing use of BD&RT and that traditional data sources are increasingly combined with new sources of data.

Potential Benefits

There are potentially considerable benefits for consumers and firms from the use of BD&RT within the insurance value chain. The DE project identified a range of consumer benefits[5] such as; enhanced claims processing and resolution, enhanced consumer engagement,

[4] Big Data Analytics in Motor and Health Insurance: A Thematic Review
[5] See Appendix 2: Examples of Consumer Benefits, as identified by respondents

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more personalised products, services and pricing, lower administration and operational costs.

Firms were asked to rank, according to their views, the level of importance of each potential benefit from a consumer perspective. The responses suggest that over half of the firms who responded considered enhanced claims processing and resolution to be exceptionally important. This was followed by enhanced customer engagement and enhanced personalisation of products and services. Other benefits highlighted by respondents were competitive pricing, payment of claims, and automation and efficiencies resulting in better service.

Observations

The Central Bank recognises that benefits of increased use of BD&RT can accrue to firms, consumers and society. The Central Bank considers it very important that there is an appropriate balancing of interests across these stakeholders, with appropriate consideration given to ensuring that the use of BD&RT does not exclude certain consumers, including those with poor digital literacy. It considers that the use of technology by consumers should serve their interests and not be used as an opportunity to take advantage of their behavioural vulnerabilities, or to increase information asymmetries between consumers and firms.

Potential Issues/Risks Related to the use of BD&RT

General Issues

The research also explored the more general issues that can arise from the use of BD&RT.

Potential issues can be grouped into the following areas:

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Table 1 | Potential Issues Associated with the use of BD&RT

Potential Issues	Examples
Issues with data, including the use and management of data	▪ Issues associated with data accuracy, appropriateness, quality and completeness ▪ Data protection and privacy ▪ Issues arising from discrimination and other risks arising from bias; issues arising from use of behavioural data; lack of consumer understanding, knowledge, consent and information asymmetry, transparency and explainability.
Issues with the design and use of models / technology	Related to model or technology performance and robustness or the interaction between the human and model, including lack of competent use, skillset or oversight.
Accountability issues	Related to the lack of clear roles and responsibilities within firms and lack of understanding (e.g. of data science) at board levels.
Issues associated with outsourcing	Given the nature and scale of digitalisation, its use can lead to increased and more complex outsourcing with all the associated risks that can arise as a result such as 3rd party dependencies, new interdependencies, lack of appropriate controls and governance, concentration risk, systemic and security risks.

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Cyber and security issues	Risks can be heightened by the use of digitalisation such as increased capacity for cyber-attacks that can have a higher impact on firms / consumers.

Other issues identified included:

- Environmental (associated with the collection, storing and processing of high levels of data) or societal issues (implications of a small number of firms having access to large amounts of high quality data and the impact that can have on other players and the level of competition in the market, etc.)
- Issues related to data monopolies and resources/jobs.

Observations

The research highlighted the importance of adequate data and model management and governance as well as appropriate data privacy management. For example, it identified some of the causes of poor data quality, such as:

- Lack of knowledge of what is required, skills and resources
- Increased reliance on automatic data handling
- Use of existing datasets for different purposes.

It also identified risks associated with granting consent for data use, i.e. where consumers may not fully understand how their data may be used. Indeed, firms may in the future use data for purposes not envisaged at point of consent, resulting in a lack of understanding of the scope of consent given and asymmetry of information.

All of this suggests that existing processes and controls for the management of data may need to be reconsidered and updated, with potential upskilling. Strong governance is critical in ensuring any data issues do not go unnoticed.

The research also reflects the need for robust management of outsourcing and cyber security risks in a digital environment.

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Risks in an Insurance Context

Governance Risks

Through follow up interviews with the firms who participated in the survey, the DE project explored how data ethics was being incorporated within the governance and risk management system of firms. The interviews covered governance, use of third parties, conduct considerations, and culture and training. It could be interpreted from the findings that larger firms and firms that are part of groups may be more developed and advanced in relation to data ethics, governance and risk management.

Some findings related to governance included:

- Some firms had established data governance committees, which were generally focussed on data quality, data protection, information security and use of external data.
- A limited number of firms had an explicit focus on ethical considerations.
- Most firms did not have explicit definitions of data ethics or specific policies in relation to data ethics.
- Many firms looked to GDPR and information security in response to questions related to data ethics considerations.
- In relation to models, most firms did not have an enterprise-wide model inventory or enterprise-wide model risk procedures in place.

In relation to the use of third parties (including cloud providers, model vendors, technology providers), it was observed that within the procurement process, there was a reliance on GDPR[6] to cover ethical matters, rather than an explicit consideration of data ethics. In the use of external data and models, it was observed that firms face validation challenges, with external and more non-traditional data being perceived as having a higher level of inaccuracy or providing correlations with prohibited data.

Finally, in relation to governance from a conduct perspective, most firms did not have a broad internal definition of fairness and non-

[6] The General Data Protection Regulation (GDPR) (EU) 2016/679 is a regulation on data protection and privacy for all individuals within the European Union. It came into force across the European Union on 25 May 2018.

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discrimination. Where firms did have a definition in place it referred to specific aspects in pricing.

Observations on Governance Risks

The findings highlight the importance of strong governance and risk management with respect to a firm's use of BD&RT and a possible need for more explicit consideration of ethical matters.

The Central Bank stresses the importance of appropriate and informed board and senior management engagement, where BD&RT risks are material. It also highlights the importance of clear and transparent roles and responsibilities with respect to the use of BD&RT by firms, in order to avoid accountability issues, particularly where use of BD&RT could impact consumers. Where outsourcing occurs, involving the use of BD&RT, the firm remains fully responsible for those activities and the management of the associated risks.

Furthermore, the Central Bank also stresses the need for firms to explicitly consider ethics. It is important for firms to note the Central Bank's expectation in this respect would extend far beyond compliance with existing requirements and controls e.g. GDPR.

Consumer Risks

The research identified a number of risks to customer outcomes, relating to the use of BD&RT across the insurance value chain.

The identified potential risks to consumers were grouped into five risk groups as set out in the chart below (where unfairness and discrimination is further broken down into four aspects). It should be noted that these risk groups are interconnected and sometimes overlapping. Risks associated with each stage of the insurance value chain were identified and attributed to the risk categories in Chart 1 below.

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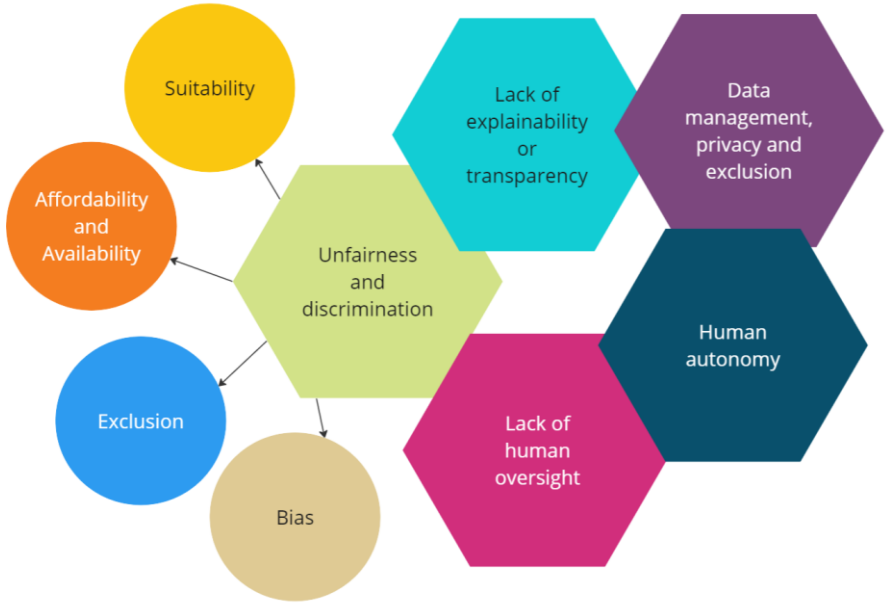
Chart 1 Categorisation of Consumer Risks



The research suggested that the stage in the insurance value chain with the highest potential impact on consumers was the pricing and risk assessment stage, and that the associated risks were likely to increase over the next three years, as firms enhance use of BD&RT. These risks were followed by those related to advertising and personalised offerings and other marketing and selling practices. Risks relating to the use of behavioural data were also considered to be potentially high impact but expected to emerge over a longer time horizon.

Without adequate governance and a consumer-focused culture, examples of risks that could arise within three years were risk to the principle of pooling, lack of explainability, marginalisation and exclusion of customers (from a digital perspective), discrimination and unfair treatment of customers and inappropriate sales.

Observations on Consumer Risks

It is important to emphasise that there are existing consumer protection requirements both prudential and conduct, e.g. Solvency II and the Consumer Protection Code[7], as well as other guidance, e.g. EIOPA's AI Governance Principles, that contain provisions requiring or guiding firms to have measures in place that mitigate many of these risks.

[7] Consumer Protection Code 2012

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According to the research, the areas of use most likely to create risk for consumers were related to pricing, sales and marketing. Notwithstanding this, risks and ethical issues can arise from the use of BD&RT across the entire insurance value chain[8]. In that regard, firms need to ensure that they implement practices that consistently result in fair outcomes for consumers, enabling them to make choices that are in their best interests.

Furthermore, in their use of BD&RT for the provision of customer service including the use of Chatbots, firms need to ensure that consumers can access timely and customer-focused service, including where a consumer needs, or is best served by, an in-person engagement with the firm.

[8] EIOPA's AI Governance Principles Report also identified risks to consumers from digitalisation across the insurance value chain

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Conclusion

General Observations on the Research

Overall, the results indicate that the majority of respondents were undertaking, or planning to undertake, initiatives to use BD&RT. At the time of the research, firms were mainly using or planning to use BD&RT in the pricing and underwriting stage of the insurance value chain, followed by sales, distribution and marketing. However, for those uses where firms were planning to use BD&RT within the next three years, those developments were largely at research stage, suggesting that the use of BD&RT is at an early stage of maturity.

In terms of the levels of integration of the associated risk within the overall governance systems of firms, while some good progress has been observed, more focus may be needed to ensure appropriate adherence with existing prudential and consumer protection requirements, in particular with respect to the ethical use of BD&RT. This will become more important as the level of use of BD&RT in the sector increases over time.

The Central Bank's view on the need for good governance around the use of BD&RT is echoed by the OECD in its AI principles, which are equally applicable to the use of BD&RT more generally. Principle 1.5, Accountability, notes that "*in this context, "accountability" refers to the expectation that organisations or individuals will ensure the proper functioning, throughout their lifecycle, of the AI systems that they design, develop, operate or deploy, in accordance with their roles and applicable regulatory frameworks, and for demonstrating this through their actions and decision-making process (for example, by providing documentation on key decisions throughout the AI system lifecycle or conducting or allowing auditing where justified).*[9]"

Solvency II sets out requirements in relation to the system of governance and risk management within firms, which apply to the management of the risks associated with the use of BD&RT where they are relevant for firms. This should include appropriate integration within relevant operational, control and risk management systems, and adequate consideration at board and

Principle 1.5
Accountability

"AI actors should be accountable for the proper functioning of AI systems and for the respect of the above principles, based on their roles, the context, and consistent with the state of art."

OECD AI Principles

[9] OECD AI Principles

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senior management level, supporting appropriate consideration of both the opportunities and risks presented by the use of BD&RT.

The use of BD&RT in the insurance value chain provides clear examples of the importance of maintaining a consumer focus as the way in which financial services are designed and delivered evolves. As highlighted in the research conducted, while there are clear consumer benefits from the use of BD&RT, there are potential risks that may lead to negative consumer outcomes. In adopting BD&RT, the obligation on firms to act in their customers' best interest remains a key responsibility.

EU and International Developments

Looking beyond relevant existing prudential and consumer obligations, there is a wealth of material which has been, or is being, developed which can guide or support firms in ensuring they establish proper systems and controls around their use of BD&RT including an adequately consumer focused approach to that. Below are references to just some of that material, which firms could benefit from considering as they continue to, and further broaden out their use of BD&RT.

- **European Insurance and Occupational Pensions Authority (EIOPA)**: EIOPA has developed a digital transformation strategy setting out a range of long-term priorities to guide its contribution on digitalisation. Analysis of specific issues has already been undertaken, including a *Thematic Review on Big Data Analytics in Motor and Health Insurance*.[10] In addition, EIOPA has established a consultative expert group to identify ways to address the opportunities and risks associated with the growing use of AI in insurance. This has led to the publication of its report *AI Governing Principles: Towards Ethical and Trustworthy Artificial Intelligence in the European Insurance Sector*.[11]

- **AI Act**: Work is also ongoing at an EU level on the AI Act, a cross-sectoral piece of legislation aimed at ensuring AI systems

[10] Thematic Review on Big Data Analytics in Motor and Health Insurance
[11] AI Governing Principles: Towards Ethical and Trustworthy AI in the European Insurance Sector

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placed on the EU market and used in the EU are safe and respect existing laws on fundamental rights and EU values.

- **International Association of Insurance Supervisors (IAIS):** At international level, digital innovation is also a strategic theme for the IAIS, with the main focus of its activities in this area on the sharing of supervisory practices and providing a platform for exchange of experiences and insights. The IAIS has established a FinTech Forum, which is a virtual forum of technical experts that has focussed on relevant topics, including on safe, fair and ethical adoption of AI and machine learning and the use of governance of data.

Recent developments in the use and application of technology (such as ChatGPT) across a range of industries, and its potential proliferation have prompted a lot of political and regulatory attention. This attention is at both a domestic and EU level in terms of the potential opportunities and risks that it presents. This is likely to be an area of increased focus going forward.

Looking Forward

The use of BD&RT in the insurance sector, and the financial services sector more broadly, is evolving and increasing. With that come substantial opportunities for all stakeholders involved in the insurance value chain i.e. firms, consumers and society more broadly. However, with those opportunities there are also significant implications, including responsibilities, for firms to consider where they decide to use BD&RT to a material extent.

The research undertaken indicates that firms are and will continue to innovate, including potentially increasing the use of BD&RT across the insurance value chain. When they are doing so, the Central Bank expects firms to ensure they adopt a consumer-focused approach, which includes careful consideration of the ethical questions and broader implications of their use of BD&RT in a manner that is in line with existing consumer requirements. More specifically, this includes, inter alia, due consideration of the potential risks for bias or unfair treatment, including exclusion of certain consumers, or misuse of consumer data. Furthermore, firms should ensure they apply proper and adequate governance around the use of BD&RT in their activities in a manner than ensures they continue to meet their

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prudential requirements with respect to those activities. Finally, there is considerable material that already exists and is publically available which can support firms in adopting BD&RT in an appropriate manner.

The Central Bank will continue its work to expand its understanding of the nature and extent of the use of BD&RT in the insurance sector and will evolve its supervisory and policy approach accordingly. Any such approach will seek to be flexible and proportionate and will involve appropriate engagement with stakeholders, including industry and consumers, as it is being developed.

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Appendix 1

Examples of Use of BD&RT across the Different Stages of the Insurance Value Chain

Stage	Examples of Use
Product Development & Design	AI or digitalisation to inform product development, for example using historical consumer data, survey data or market research; Predictive modelling, for example predicting disease development patterns to inform product development Digital video identification such as facial recognition Internet of Things (IoT) devices e.g. Fitness trackers to encourage healthier lifestyles or for on-demand cover products
Pricing and Underwriting	Automated/Semi automated underwriting e.g. automated approval, denial or rating of individuals Pricing practices such as price optimisation, retention modelling and personalised pricing Artificial intelligence or machine learning for risk assessment e.g. to rate individuals, to identify higher risk customers
Sales, Distribution & Marketing	Monitoring website activity, for example through the use of digital marketing techniques Use of technology when communicating with consumers, for example direct online sales and / or provision of offers to existing customers Driving up sell, cross sell of products, add-ons, for example identification of consumers most likely to purchase products Targeted and personalised online advertising Use of technology to identify potential customer groups, for example use of "look-alike" marketing modelling or use of AI to identify profitable target market Automation of form filling insurance applications

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Stage	Examples of Use
	Demand modelling
Post-sale service and assistance or Customer service	Use of Robotic Process Automation (RPA) to automate repetitive tasks, for example in relation to insurance policy management Consumer self-service, for example use of chatbots, voice recognition, dynamic scripting e.g. to provide immediate answers or triage queries for customer service agents to answer Call centre sentiment analysis Use of OCR to extract key information e.g. key policy information Automation (full or semi) of consumer complaints
Claims Management	Use of technology when processing claims, for example to feed into the settlement amount through AI image recognition / optical character recognition (OCR), or automatically assigning a claims adjustor with relevant experience Use of technology as part of the claims settlement process, for example (semi) automated payment processes Use of technology around claims management, for example prediction of claims characteristics, segmentation of claims by type and complexity, determination of claims which are judged more likely to result in disputes or litigation First Notice of Loss (FNOL), for example (semi) automated FNOL (via telematics), prediction of claims event based on IoT sensor data Claim approval and claim denial, for example (semi) automated approval/ denial of claim Claims prevention, for example safety warnings push notifications, customer behaviour coaching Claims optimisation strategies, for example to identify claimants who might settle for a lower claim amount, using insights to negotiate an "ideal" or minimum claims settlement value

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Stage	Examples of Use
Claims fraud detection	Claims scoring and / or anomaly detection to identify fraudulent patterns, for example to identify factors like claims being made on the first day of cover as flags for possible fraud Fast tracking of likely non-fraudulent claims Referral of claims for further investigation Behavioural modelling to identify fraudulent patterns Social media analytics to identify fraudulent patterns AI to identify consumers likely to commit fraud Facial recognition within interviews to analyse responses

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Appendix 2

Examples of Consumer Benefits, as identified by respondents

- Enhanced claims processing and resolution e.g. speeding up of claims processing by automating some or all of the process, or increased accuracy in claims pay-outs based on better utilisation of information gathered from past claims
- Enhanced consumer engagement e.g. speedier processes, greater access and availability to certain activities that are now automated (i.e. 24-hour availability), greater ease in finding or evaluating potential products if digital marketing techniques are used
- Enhanced personalisation of products and services e.g. availability of larger datasets with advanced technologies can help provide more information on consumer risks and needs resulting in more suitable or personalised products
- New products/ more tailored products e.g. the availability and use of increased levels of data and more sophisticated technologies can enable firms to develop new, enhanced or more customised products
- Risk mitigation/loss prevention e.g. increased levels of data and technologies can provide opportunities for improved risk mitigation and loss prevention including helping consumers understand and thereby manage their risks better
- Enhanced fraud analytics and detection e.g. more efficient and effective fraud analytics and detection are possible with increased levels, quality and sophistication in data and technologies used
- Personalised pricing could be increasingly possible which could lead to lower premiums or increased access to insurance products (i.e. financial inclusion)

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- Lower administrative and operational costs arising from operational efficiencies that may be possible from increased used of digitalisation
- Lifestyle enhancement decisions e.g. use of digitalisation may provide for better information on existing lifestyles and thereby enable consumers to make enhanced lifestyle choices
- Enhanced risk assessments possible through increase availability of data sources and capability to process that data
- More targeted advertisements.

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