

Suptech in insurance supervision¹

Executive summary

The International Association of Insurance Supervisors (IAIS) has acknowledged the importance of digital innovation and, specifically, the role of suptech in the “new normal”. In this paper, suptech refers to the use of innovative technologies by insurance supervisors to support their work. There is a need to improve understanding of the potential of suptech to aid insurance supervision. Interactions with insurance supervisors also show that there is strong interest in sharing specific solutions, experiences, practices and lessons learned on the use of suptech.

This paper aims to contribute to filling this gap by citing concrete examples of how suptech tools are used by 22 insurance supervisors, from both prudential and conduct perspectives. The paper provides an overview of suptech use by insurance supervisors based on reported use cases. It provides examples of suptech tools that are being assessed, developed or used by insurance supervisors for various activities – from data collection to data analytics. It explores how these suptech tools are identified, developed and used; how effectiveness is measured; how such tools were used during the pandemic; and other suptech tools that insurance supervisors are interested in having or developing. In doing so, the hope is that the paper will provide a valuable resource to insurance supervisors to better understand suptech based on the experiences of their peers. Such understanding can pave the way for a more informed approach in undertaking any suptech work.

The 38 suptech tools covered in the paper are classified according to their intended use – whether for prudential or conduct supervision, or both. Half of the tools may be used for both prudential and conduct supervision. The remaining half of the tools are almost equally divided between those used for conduct supervision and those used for prudential supervision. Almost all of the tools are already being used in actual supervisory processes or are in the process of being fully developed to go live. Only a very small proportion of the tools are in the proof of concept or prototype stage. Most of these tools were, or are, being developed internally or jointly with external parties.

Suptech tools for prudential supervision of the insurance sector are similar as those used by banking supervisors. These include automated dashboards that show key risk indicators, eg for credit, market and liquidity risks, as well as tools that allow for early detection of financial distress. Moreover, machine learning techniques are also used for network analysis and in tools that are used either to provide an independent view or to improve on existing risk scoring frameworks. In general, prudential tools aim to achieve pre-emptive engagement with supervised firms by allowing for more frequent and prompter monitoring.

Most of the reported conduct tools, on the other hand, are specific to the insurance sector. While most tools aim to improve the compliance assessment of insurance distribution-related activities, one was developed to support authorities’ classification of consumer complaints. Some are suptech analytics tools that involve the use of natural language processing (NLP) to analyse data provided to customers in pre-contractual and contractual documentation by insurers and intermediaries. There are a few data collection tools: a couple gather information from insurers’ websites and social media platforms

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to identify mis-selling practices, while others facilitate compliance assessments of the interactions between insurers/intermediaries and customers during sales calls.

Most of the reported tools that may be used for both prudential and conduct supervision deal with data collection-related processes. Data collection-related processes refer to data reporting, validation, consolidation and visualisation. There are also a few supotech analytics tools that may be used for both prudential and conduct supervision. These typically involve the use of NLP, for example, to analyse narrative reports from insurers to identify potential prudential issues or to comb through social media posts for possible conduct-related issues. NLP may also be used to aid in writing supervisory letters to insurers. In addition, respondents have reported tools for outlier and novelty detection and for pattern recognition, which may be used on both prudential- and conduct-related data.

Insurance supervisors raised some novel challenges, in addition to familiar ones such as lack of resources, issues with data, internal processes etc. In particular, insurance supervisors highlighted challenges related to the identification of the supotech tools that they need. These may be due to evolving regulatory requirements that supotech tools are meant to process, and lack of understanding of available technologies and their limitations. Also, insurance supervisors specifically emphasised the need for the right skills and expertise for following up on the findings of the tools. This is where experienced supervisors are relevant, and it highlights the important role that supervisory judgment continues to play.

Insurance supervisors in emerging market and developing economies (EMDEs) are facing the same challenges but to a greater extent, particularly when it comes to resources. They typically leverage available commercial off-the-shelf (COTS) solutions for supotech. This is due to a lack of in-house expertise and a general lack of resources, which also makes them cautious about which supotech tools to use or develop. They have little to no room to undertake experimentation on their own. Thus, there may be scope for them to partner with external parties, such as academic institutions or technology companies, in conducting supotech experimentation.

Insurance supervisors do not yet have clear key performance indicators (KPIs) or methodologies to measure the effectiveness and efficiency of supotech tools. Effectiveness and efficiency of the tools are typically assessed based on feedback from users. Some aim for more objective metrics, such as time saved in completing a task. Nevertheless, there are certain tools that have clearly been beneficial, particularly during the pandemic. These include tools that enabled insurance supervisors to continue to undertake their supervisory activities despite pandemic-related restrictions.

Despite the challenges, insurance supervisors are continuing to explore supotech tools. Many insurance supervisors specifically aim to develop integrated systems or platforms that contain different applications – from data collection to data analytics – and cover the entire supervisory process. Investment in these technologies requires corresponding digital and data expertise. Accordingly, fostering a culture of innovation based on data-driven decision-making, openness to experimentation and challenging “legacy thinking” is required within financial authorities. Capacity building programmes can help in this regard. Acquiring new talent and increasing the data and technical literacy of existing staff through training programmes will not only develop necessary expertise but will also contribute to a more innovative culture.