MERLYNN

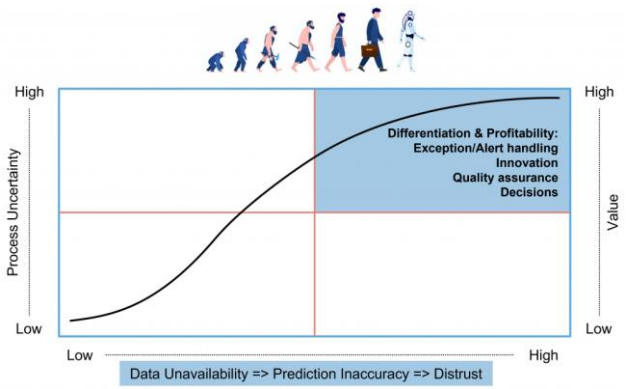
Artificial Intelligence - TOM

Automate business processes with artificial intelligence

Human expertise is one of the world's most valuable resources. At high risk and in times of uncertainty, it is human experts that we rely on to make important decisions. NAVERTICA therefore introduces **TOM**, solution from **Merlynn Intelligence Technologies** built on artificial intelligence that replicates the decisions of decision-makers in organizations. The solution provides real-time access to expert knowledge on a daily basis, bringing tremendous value in process automation, resource allocation and risk management.

Artificial intelligence is intelligence demonstrated by machines, as opposed to natural intelligence demonstrated by living beings.

An expert system is a computer program designed to provide expert advice, decisions or recommend solutions in a specific situation. Virtual models created using TOM replicate not only the formulated rules, but also the subconscious knowledge and experience of human experts.



TOM (**T**acit **O**bject **M**odeler) replicates human capabilities and makes decisions that are too complex to be handled by fixed rules. TOM makes cognitive decisions in real time and enables the organization to automate decision-making processes that now require human intervention. With TOM, an organization can significantly streamline its operations.

Why is TOM unique?

TOM learns from an expert, so there is no need to have historical data to train the system

The only technology capable of replicating knowledge gained from experience, instinct and ethics

User friendly and easy to understand interface

Easy integration into existing systems thanks to API and batch processing capabilities

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How TOM works?

The system is not based on rules (although it may include and use them), but on the effective transfer of knowledge from a human expert to a virtual expert. No historical data is needed for the learning process of the virtual expert. Validation of the virtual expert is done both by comparing the decisions made by the virtual expert vs. the human expert, and by comparing the virtual expert's decisions with historical data.

Knowledge transfer process

The initial process is specification where the expert defines the question, possible answers and factors that influence the expert's decision-making. This is followed by a training process in which the system presents various scenarios to the expert and the expert teaches it with his answers (i.e., decisions). The final process is validation, in which the system generates scenarios similar to those from the training process, which are then answered by both the expert and the virtual model. If the responses of the human expert and the virtual expert model match at the required confidence level, the virtual expert is considered validated and released for use in practice.

Case study - Healthcare

Despite great strides in automation and prediction technologies healthcare providers continue to rely on the knowledge and expertise of clinicians and forensic experts to make appropriate decisions on their behalf. While human expertise is necessary to navigate risk and uncertainty, the challenge is two-fold. Human capacity is constrained, which leads to delays in processing, and human expert opinion on the most appropriate action may differ, which leads to inconsistent decisions across the system. An example of a problem can be decisions about hospitalization of patients without acute problems, where poor decisions can lead to the filling of vacant beds and the inability to accept patients with an acute condition.

TOM digitally replicates human expertise to create a Virtual Expert - a digital replica of the decisions made by the organization's top experts. Digitized expertise provides more consistent decisions. The panel of Virtual Experts are able to simultaneously, in real-time, provide input & expertise on the most appropriate course of action for patient care enabling healthcare providers to better manage risk.

Case study - insurance

The global pandemic and resultant economic crisis have introduced a host of new risks and challenges into the insurance arena including a surge in fraudulent claims, unanticipated claims etc. Organizations often rely on the experience and insight of decision makers to resolve these problems. The organization's need to rely on these experts further increases with increasing uncertainty and the growing number of exceptions.