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FEATURE

Smart sourcing: cognitive automation at Zurich Insurance



Cognitive technology is making a difference at a leading insurer, say Mary Lacity, Leslie Willcocks and Gero Gunkel

“Zurich sought partly to see how cognitive automation could enhance robotic processes.”

Intelligent automation (IA), artificial intelligence (AI) and cognitive automation (CA) have become among the most hyped and misused terms in business. Sidestepping debates, our own definition of cognitive automation is “a software tool that analyses unstructured and structured data using inference-based algorithms to produce probabilistic outcomes.” At Zurich Insurance, Blue Prism robotic process automation (RPA) software had been already applied to several insurance processes. These processes exhibited the typical attributes for successful RPA deployment, namely structured data, manual (screen-based) and repetitive rules-based activities, high volumes and mature, stabilized processes that required definitive outcomes. Subsequently, Zurich sought partly to see how far cognitive automation could complement and enhance RPA usage, but more importantly, to build learning and a platform for future automation tools and their application for strategic business purpose.

Zurich Insurance’s CA adoption journey

Founded in 1872, Zurich Insurance Group Ltd is a leading multi-line insurer, with headquarters in Zürich, Switzerland. Zurich recognized the need to become a more customer-focused organisation and has invested strongly in digital capabilities, simplifying products and processes, providing customer self-service, investing in technology, systems and skills, and upgrading the flexibility, quality and value of shared services.

Automation figured highly in most of these forward plans and actions. In Underwriting, Zurich had already adopted automation of straight-through flow underwriting and cognitive computing in Germany, UK and Switzerland, and was rolling this out in Spain and Italy by 2018. Predictive analytics were being used to improve risk retention decisions in crop insurance. In Claims, robotics were being used in production in three countries, and this was set to be rolled out for all core markets by 2019. Likewise straight-through claims processing (or “one-and-

done”) was being increased from 20% to 40% of all claims by 2019. Meanwhile, predictive analytics in four countries would be rolled out globally by 2019, to reduce claims costs and shorten time to close. Enhanced automation of claims processes would also improve the customer experience, as well as functional effectiveness. Here we look at a particular example of this – improving injury claims efficiency and efficacy through CA.

Starting with cognitive automation – April 2015

Key technology trends were explored as part of the revision of Zurich’s Technology & Operations strategy through late 2014 and early 2015 (see Figure 1 below). One of those trends was the automation of knowledge work, given the advances in computing power and the exponential growth of data. Zurich wanted to test how mature intelligent automation systems were and thus decided to run a portfolio of prototypes to test these solutions. The team responsible were a joint task force with representatives from the Group’s innovation and business development team and the UK Claims team.

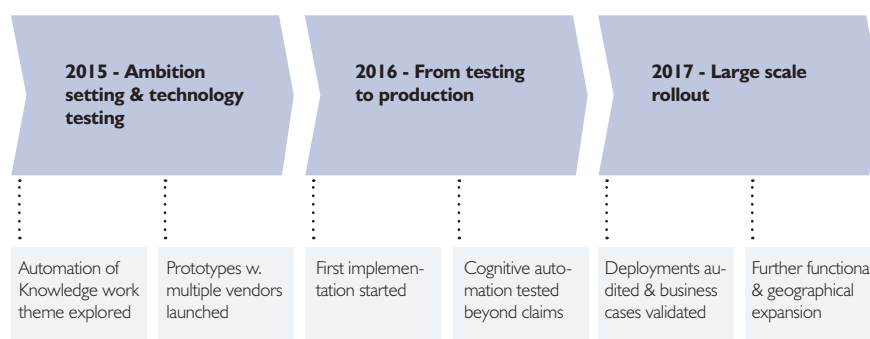
Use case: A key issue by April 2015 was to identify the right technology vendor, given that the whole industry was still in its infancy, making it very difficult to get suitable references or other external proof points from suppliers. At the same time, the process selection was also a key challenge because a very complex process would have increased the risk of a project failure, while a too simple

process would have not really proved the maturity of the technology, raising a “so what?” question. At the same time, Zurich recognized that it was important to assess the maturity of the technology quickly to keep up momentum.

Vendor selection: CA started very much as an experimentation project. Looking for a fair and comprehensive comparison in an immature vendor market, the prototype design was inspired by randomized control trials in medical research. Each vendor obtained roughly the same amount of training data, the same problem statement, the same implementation timeline and the same time with the subject matter experts. Performance differences could thus be fully linked to the tool performance and the capabilities of each vendor. The results were very encouraging, and a winner – a specialist natural language programming (NLP) technology provider – emerged.

Process selection: For the first prototype Zurich selected a claims valuation process for personal injury claims. Here, claims handlers review medical reports that are submitted by a claimant to decide on compensation value for pain and suffering. The process step took about 58 minutes for a claims handler. The process was selected for two reasons: firstly, it is a representative insurance process/activity; and, secondly, it is quite a complex and demanding activity, with claims handlers requiring significant training to perform this task effectively. According to Richard Wood, the thinking here was: “If we can automate the evaluation of medical

Figure 1. Zurich timeline for CA





“The platform was adopted to accelerate the speed of claims handling.”

► reports, it proves we can automate a significant part of today’s processes and activities across the whole insurance value chain.” It was time to test CA with a live process.

Deploying cognitive automation: the insurance claims process

The chosen process was the key one of insurance claims Zurich Insurance operates the claims process through the UK’s Ministry of Justice. The ministry is a neutral player, providing the platform for Zurich and other insurers to engage with the counterparty for fast-flow personal injury claims worth less than £25,000. The platform was introduced to accelerate the speed of claims handling and to reduce the number of cases that go to court. The rationale was that a faster claims process also reduces the claims handling costs for both sides. The medium to long-term benefit from this is that the premiums for young drivers stop rising or even fall. A smooth claims process is vital. Zurich’s

philosophy, which it aims to apply to every claim, is the rule of three: take ownership of the claim, move it forward and satisfy the customer.

The first claim notification should include the policy number, date of loss, risk address and circumstances of loss, including cause to the extent that it is known. Zurich’s objective is to receive, record and move a claim forward within two working days of receipt – earlier if possible. Moving the claim forward means much more than opening a claims diary. It frequently involves asking for more details, appointing a specialist such as a loss adjuster, or indicating that the loss is not covered under the policy. The handler will track all the steps through the claims system.

An illustrative example

A person claims harm by a car driven by a Zurich customer. The person gets a claims solicitor to submit a claim to Zurich via the Moj portal. If Zurich accepts the

claim and liability, then it moves to the claims valuation stage. Typically this would involve a medical doctor writing a 10-40 page report looking at medical history, pain experienced, impact on social and work life, prognosis and recovery time. The claims solicitor sends the report to Zurich, together with a settlement offer. A negotiation process typically follows. The CA tool is focused on the steps of reading the medical report and determining the appropriate compensation amount. This has three steps: inputting the medical report, pricing and output.

Before CA, this took about an hour per claimant. The claims handler would read the medical report – this took up most of the time. After that, the officer would transpose this unstructured information into some kind of structure for the pricing. Here, the handler would click on Zurich’s pricing support tool and avatar to aid the compensation process and apply this to the injured human body part. By clicking on this avatar, each of the ►



“Each of the injuries is linked to an international ICD medical code.”

► injuries – for example, to the neck, the thorax and the right shoulder – is linked to an international ICD medical code. Each medical code selected calculates a certain compensation value based on previous settlements, while also taking other factors for the claims compensation into account. All the injuries and treatments are priced and then a total compensation range is compared against the claim. This supports the handler to value, negotiate and settle the claim.

Time and motion studies highlighted that reading the report was time-consuming and that a combination of RPA and CA software could greatly enhance execution. According to Adam Briggs, Zurich’s UK claims automation manager: “The key here is the use of multiple intelligent automation technologies working together to solve a complex business process. Our cognitive tool is used to understand and extract injury details, prognosis and key data from a medical report and supporting documentation. It is then passed to our RPA tool, which interacts with other tools and techniques to value the injury.”

Cognitive automation and tool choice

Zurich sourced the RPA and CA tools externally. Zurich was already using Blue Prism software and had built up internal knowledge on its deployment. On the cognitive tool, the innovation and business development team recognized that it was impossible, with the resources available, to build a language tool for the application intended. Language is too complicated. Simple analytics were possible, but not a tool to read a 40-page medical report and gain the right meaning and understanding.

One interesting aspect is Zurich’s choice of a semantic engine, rather than a tool that did a statistically based analysis such as keyword search or term frequency. The reason why is explained by a simple example. A senior team member told us: “Consider the difference between pain and discomfort in the back of the neck, and pain and discomfort in the back and in the neck. You and I know they mean something completely different. Semantic analysis will tell you it’s different, but

keyword analysis won’t be able to tell you that.”

The tool emerged as powerful enough to give a huge efficiency gain without losing quality. A key success criterion was fulfilled – that the tool had to be at least as accurate as a human handler.

Developments

After this very promising start, by late 2017, Zurich had several CA projects in production in multiple areas of the business. The innovation and business development group had built sufficient confidence in the technology to look for diverse processes that were text-based to which to apply their cognitive tool capabilities. They have been seeking to apply it, for example, to contracts and any other areas where they deal with a lot of documents, especially those requiring document understanding.

At Zurich, a typical CA project was taking six to eight weeks to carry out the proof-of-concept stage, and once a subset of work was tested and proved to work it was moved to the implemen-

tation stage. The CA project group had built up learning with every implementation, and so by 2017 had developed data collection, testing and training strategies and a reference architecture. These knowledge and data assets helped to roll out these technologies in a faster way with lower execution risk and costs

Again, convincing stakeholders has proven easier than in the first implementation, because of the successful reference cases now available. The organizational learning and speedier stakeholder engagement have seen project time be cut by sometimes as much as a third, e.g. from six months to four.

Building in-house automation capabilities

Zurich already had robotic process automation capabilities. For the CA implementations so far they actually used mostly external developers from the vendor, simply because Zurich employees would not know all the tools and algorithms so central to cognitive tool operations. Zurich managers believed that in order to move fast in the market, they needed to start with external assistance to quickly prove the technology, the business case and the business application. They then put it into production, gained the first benefits and subsequently argued the case for more internal human and financial resources.

By mid-2017, the CA capability consisted of an enterprise data and analytics team. These were data scientists, some of them also with a very strong background in NLP, many from other relevant technical areas. Several other people comprised project management, their overall role being to build and automate new processes together with the relevant tool vendors. This adds up to a delivery capability that collaborates with external resources to initially deal with complex new technologies, gradually transitioning capability to the internal team over time. The expansion of the CA portfolio continued, now also looking more strongly at complex processes and activities in underwriting for the retail and commercial customer segments,

as well as customer-facing operations, to further improve the digital customer journey. For the continued enhancement of the technology portfolio, collaborations with leading engineering and technology universities were strengthened.

Outcomes and lessons

Did the application yield multiple business benefits – what we call “the triple win” – for customers, shareholders and employees? The business benefits are obvious from Figure 2. But what about customers? According to one senior executive: “A key benefit is faster processing because this leads to faster service and happier customers, especially when it involves a personal injury claim. It’s also about speed, standardization and getting better data analytics because it starts as unstructured data and these tools provide a structure. So, actually, you can do data analytics that you couldn’t do before.”

Turning to employees, they continued to be integral to the process doing much the same job after automation, except they did not have to read the medical reports or re-key information between systems. Instead, they could focus on the two-thirds of the work that was more interesting, while also being freed up to get back much more quickly to Zurich

“Zurich managers believed that to move fast in the market they would need to start with external assistance.”

claimants and customers.

Furthermore, replicating our finding in earlier cases, the claims processing unit had come under a lot of pressure from a rising numbers of claims. CA provided a great deal of relief to these employees. It also allowed one person to continue to deal with each claim all the way through. CA also allowed the employee more time per case to speak to the customer, or carry out further investigation. Customers as well as employees benefited from these practices. Figure 2 below summarizes the “triple win” Zurich gained from CA deployment.

In the Zurich Insurance case, we identified nine lessons for practitioners.

1. Make business strategy drive technology investments.

Zurich Insurance started looking at CA in the context of broader strategic business issues and decisions.

Figure 2. The triple win from cognitive automation at Zurich Insurance





“Don’t look for a Swiss army knife.”

2. Don't look for a Swiss army knife.

Competitive advantage is not derived from the selection of one technology or service vendor, but through the ability to identify and connect different technologies that maximize the full potential of modern automation technologies.

3. Test the provider's tool with a controlled experiment.

Working with different vendors did not only help to identify the best technology fit, but also to measure the hidden costs of an implementation, such as the change capacity needed for each vendor to deliver the project.

4. Be selective on the best work to automate by choosing high impact use cases.

Cognitive experts and early adopters report that cognitive is most suitable for services that rely on vast amounts of unstructured data and expertise, have enough scale to justify the investment and are strategic to the business. Zurich

Insurance's use case on personal injury claims processing was consistent with these criteria.

5. Prototype cognitive tool applicability.

This lesson has also been common practice across our other CA case studies.

6. Create a new process flow.

CA is often not about automating the existing process, but more about creating a new process flow that fits the machine. Hence, the need to move from a human-centric process flow to a machine-centric process flow.

7. Engage employees fully.

To avoid any misunderstandings about the purpose of a project it is important that senior managers are, right from the beginning, equally clear about what the objectives of a project are as about what the objectives of such an effort are not.

8. It's a lot more work than you think – set realistic expectations.

The media can be highly misleading about CA capabilities and frequently underplay the amount of work it requires to get tools to perform proficiently. Zurich Insurance's experiences reinforce those we found at KPMG, SEB Bank, Deakin University and Standard Bank of South Africa. In particular, it is clear that CA tools are not, as at 2017, “plug and play” in the sorts of organizational contexts we are examining.

9. Integrate service automation programs – expect to increasingly use RPA and CA tools in complementary ways.

At Zurich, the CA tool is embedded into a RPA process flow. More broadly, in the automation services market, we are increasingly seeing tools providers offering both RPA and CA capabilities, while some are also developing platforms that enable the use of different tools sets.

*Mary Lacity and Leslie Willcocks are co-authors of *Robotic Process And Cognitive Automation: The Next Phase* (SB Publishing, February, 2018). Gero Gunkel co-authors chapter 7 on Zurich Insurance.*