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Business automation in investment banking: fast forward…. or not?

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By 2020 service automation, based on robotic process automation (RPA), cognitive automation (CA) and artificial intelligence (AI) has reached an intriguing and confusing moment in its evolution across sectors. As the hype all too readily highlights, the potential is massive. But developments are surprisingly slow. Market revenues for these technologies are increasing exponentially, but, standing at around $US6 billion for 2019, will still reach only about $US46.5 billion by 2024. What is going on here?

On a broader view, a new technology, for example cloud computing, personal computers, driverless vehicles, can take anything between eight and 26 years to be become 90% adopted across sectors. More immediately, LSE research over hundreds of deployments identifies that some 75% of the challenges and delays arise from organisational and managerial problems rather than technical ones. We find organisations differ immensely in their ability to develop and adopt automation technologies. Some 20% are 'leaders', 25% 'followers', 35% 'laggards' and 20% 'also rans'. Research by McKinsey Global Institute also suggests that, for individual firms, sectors and countries alike, early adoption is making the strong stronger, and, over time, the late adopters will lose competitiveness, probably irreversibly.

Over the next five years we will see continuing advances in the technologies, but filtered through large variations in organisational vision, readiness and capability to develop and apply RPA, CA and AI for competitive survival and advantage. But waiting for the technology to come on stream would seem to be a mistake. The irony, however, is that most businesses are not even aware of the immense applicability of the technology that already exists. For example, RPA is a generic set of technologies applicable across sectors and has been available for at least a decade. LSE research has shown RPA capable of producing multiple business benefits quite quickly, yet by 2019 only 13% of organisations had scaled and integrated RPA into their technology platforms. Even by early 2020, many organisations were undertaking cognitive automation proof-of-concepts (POCs) and pilots, but few were producing an impact on their strategic positioning, profits or revenues with cognitive technologies. The conclusion? Automation technologies are simultaneously being both over-hyped, and under-used.

> ***"At least two-thirds of staff time was being spent in a parallel world outside core IT systems, running on email and Excel, and generating enormous communications complexity"***

We are going to look at this proposition in the context of one sample sector – covering investment banking, asset and wealth management. We could have chosen any part of the more mature banking, financial services and insurance sectors. These have made 52% of the total investment in business automation, starting at least four years ago. The analysis suggests that many business managers are anticipating a future in two or three years' time that is, in many respects, in fact already here, if they could only identify and seize the opportunities.

Over the last five years the wealth management sector, including capital markets, has experienced severe competition, fee compression, stricter regulation, rising costs of doing business, and evolving customer needs. As one solution to these pressures in an information intensive industry, a 2018 Cap Gemini report urged the adoption of robotic process automation, CA, machine learning and AI across the sector. In its 2020 report, Cap Gemini now pressed for wide-scale adoption of automation to support omni-channel offerings, hyper-personalised services, emotional analytics, enhance advisor effectiveness, simplify client onboarding and know-your-customer (KYC) processes, and improve customer satisfaction. But a few wealth management banking 'leaders' had already made major inroads into this agenda, customising RPA and CA and integrating their use in a process of combinatorial innovation. Let us look briefly at two examples.

Example: a Swiss bank

The capital markets operations arm of a major Swiss bank initiated its cognitive automation POC in early 2017, after multiple failed automation projects. An internal review showed that this operations function, far from being a procedural back office environment with well-defined tasks, was highly complex and messy. It processed over 150 million emails per year, with 65% of employee time spent servicing information requests, 39% communicating via email and chat, and 26% collecting and manipulating data. At least two-thirds of staff time was being spent in a parallel world outside core IT systems, running on email and Excel, and generating enormous communications complexity beyond anything an RPA execution engine could impact. Enter cognitive automation.

70% of daily work was outside core IT systems, not monitored, recorded systematically, understood, or quantified

These parallel communications channels created enormous amounts of excess work. The bank needed to understand the workflows in order to automate inputs and initial processes, then feed the RPA engine and other applications with labeled, structured data. The bank engaged Re:infer, a SaaS-based natural language processing technology platform to interpret raw communications data and apply machine learning to identify relevant data clusters. A cluster is a semantic group of conversations. Staff then reviewed the clustered conversations and taught the model how to interpret them. Data was systematically labeled using a customised taxonomy. The models and platform were then connected to multiple incoming communications channels – email, chat application programming interface (API), call transcripts, customer relationship management (CRM) systems – to analyse recurring themes and deliver structured data to downstream users and systems, including the connected-RPA enterprise platform.

The technology was production ready, i.e. able to go live by March 2018. A powerful aspect of the Re:infer CA technology was process discovery, that is identifying the actual communications processes – it was used in the internal review described above. In this case 70% of daily work was outside core IT systems, not monitored, recorded systematically, understood, or quantified. Doing these things provided insight and identified huge operational inefficiencies, bottlenecks and risks. It also drove work restructuring and process reengineering. Some of that involved ripping down silos between operational sub-units, and between offshore and onshore teams. The net result was savings of many millions of dollars in operational costs, operating much faster, at large scale, much more flexibly and dealing with complexity, while providing on-going insight into operational risk, and opportunities for continuous process improvement. We see here the creation of a cognitive communications platform. A conventional criticism of cognitive and AI technologies is that they tend to be able to do only one thing very well, for example play chess or GO, or analyse an insurance claims form. However, the automation set provides multiple capabilities. These include: data classification and labelling, fast learning using only a limited set of training examples, making predictions, upscaling and processing communications across multiple channels, insight into communications processes and operational risk, process discovery and optimisation, identifying work structuring opportunities – all more or less in a zero code environment – you do not need to be a data scientist to use these tools. The platform has led to further innovations in communication within the bank's wealth management arm.

By 2019 the 'digital workforce' (integrated RPA/cognitive software) completely automated the 40% of customer requests that are highly transactional, enabling resolution in minutes rather than days. Moreover, improved management information through Re:infer drove additional operational gains through root cause analysis of processing errors, and detection of information security risks. The automation software also detects failing trades in specific assets from email conversations, further preventing operational risk.

> *"… tracking and measuring conversational flows, resulting in insight into risks, duplication, misunderstandings and process inefficiencies, further leading to changes in workflow."*

By reducing communication complexity, the combination of connected RPA, machine learning and natural language processing enabled the company to overcome what they called "an impossible roadblock," while offering a greatly improved service to customers. Originally developed and deployed only in the operations function, the platform was subsequently scaled up to a full enterprise solution.

Example: a UK bank

Let's look at another capital markets application, this time in a major UK bank. The applications have been similar to those described above. What is interesting is how innovation was sourced in the business. In the Swiss bank, the CA initiative was championed mainly by senior operations executives. The UK bank saw the championship come from technology and operations executives, able to get buy-in from a broader range of stakeholders. The initial problem revolved around process inefficiencies. For example, onboarding new clients and funds created considerable friction between front and back office. The chief technology officer wished to make a business case for workflow technology, but automation providers were also invited to look at the communications processes.

An external automation vendor was brought to look at a series of middle-office mailboxes dealing with client onboarding and investment confirmations and allocations. On onboarding, for example, they were able to pinpoint, through process discovery, the pain points and breaks in the onboarding journey for a new banking customer. Often the problem began not with operations but with the counterparty, the fund, or legal team. The cognitive tool could point to the exact root cause of such a problem. A vital spinoff was the demonstration of the value of tracking and measuring conversational flows, resulting in insight into risks, duplication, misunderstandings and process inefficiencies, further leading to changes in workflow. The technology and operations executives were impressed by the speed at which previously unavailable management information emerged from applying the tool and gained funding for further innovation and a proof-of-concept phase was offered to the automation vendor – Re:infer – during mid-2018.

The POC involved applying the vendor's automation suite to communications data in three known problem areas — fixed income confirmations, platform operations, and client onboarding. The POC was successful, and it became obvious that these cognitive technologies gave the bank the ability to actually reorder how trades and transactions were processed in a much more streamlined pipeline across the organisation.

By 2019, after some delays in getting the business case together, gaining stakeholder support and securing the necessary sign-offs, Re:infer, championed by the technology and operations executives driving the innovation, secured a multi-year agreement to apply the technology across the bank, on demand from senior business unit stakeholders. The agreement already identified a preliminary $7 million in cost savings and change opportunities signed up for, arising from the application of these cognitive technologies.

> *"In complex, highly scaled organisations, the technological and organisational changes need to be led by knowledgeable, innovative, influential, engaged champions."*

The wakeup call to the bank, aware of its increasingly out-of-date front/middle/back office service model and wanting to operate at scale, move to the cloud, digitise, and improve workflow was that you could not even begin to implement changes in the operating model without understanding how things were running currently. This eventually took them to the place where they began to see that the data provided, and insights generated by the cognitive tools pointed to a completely new method for running the bank. Using the cognitively derived data on communications processes, this led to establishing a future bank structure group to plot a three-year roadmap for changing how clients would be serviced. Also, as a cloud-first solution, Re:infer could immediately demonstrate to a wide bank stakeholder base the significant benefits from a cloud-based application and be the touch paper for a wider cloud project. This was important because like other automation 'leaders' in financial services the bank had identified that a cloud-first policy would bestow notable competitive advantage over the coming five years.

These two banks are in the forefront of using cognitive technologies in a sector leading the way in investment in automation technologies. What is most noticeable is the power of the technology, in this case offering multiple capabilities, including the ability to integrate with other technologies and software. We have referred to only one cognitive set focusing on communications processes, but there are many others already available for many other processes. Secondly, what is noticeable is that the technology does not institutionalise itself. In complex, highly scaled organisations, the technological and organisational changes need to be led by knowledgeable, innovative, influential, engaged champions. Change management is a critical capability for introducing automation technologies. What we identify from our research as 'the seven-silo organisation' sees barriers of varying degrees across some or all of culture, managerial mind-sets, processes, technology, data, skills, and structure. Most business organisations and government agencies of any age and size are riddled with such silos. People are often surprised when we include data and technology as 'siloed', but has digital transformation actually happened in most organisations? Take banking. The IT is amongst the most challenged today – saddled with generations of legacy systems and IT stacks, with data trapped behind access firewalls and security protocols.

This is why we are unable to identify many automation leaders, and why adoption has been surprisingly slow, despite the rhetoric and the technology potential. What is true in investment banking is true across most organisations in nearly every sector: the technology says fast forward, the organisation says it's going to take a lot longer than you think.

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Notes:

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