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THE BENEFITS OF TECHNICAL PROCESS INDUSTRIALISATION

'Business Process Automation (BPA) is the technology-enabled automation of business processes. It is performed to achieve digital transformation or to increase service quality or to improve service delivery or to contain costs. It consists of integrating applications, restructuring labor resources and using software applications throughout the organisation. *Source: Wikipedia*

Technical Process Industrialisation extends this idea to areas of the business where advanced technical or subject matter expertise complicates a simple automation process.

Introduction

We are in an era of big data, sophisticated algorithms and rapidly emerging technology. Stakeholders are increasingly expecting organisations to engage in more complex financial and statistical modelling of their businesses. Simultaneously, however, they are expected to deliver these analyses faster and more robustly, with fewer errors and resources. With the Financial Standards of Insurance regulation and IFRS 17 drawing closer, consistency across the reporting from models designed for different purposes, and keeping track of assumptions by granular cohort, will become a significant challenge unlikely to be solved in a spreadsheet.

Shortcomings in Current Processes

There are three key forces driving process industrialisation, namely; the increasing complexity of regulation and volume of data, the simultaneous need for speed in reporting and the increased need for transparency.

Multiple, overlapping and partly consistent regulatory requirements mean that entities have multiple processes to run on a frequent basis. There is also an increased amount of data, stored on a variety of sources, maintained by various departments in the company. Thus, it becomes difficult for a single person to have ownership of the whole process, whilst ensuring that every manual workaround gets updated every time the process is updated. In addition to the above, inconsistencies in data definitions across risk,

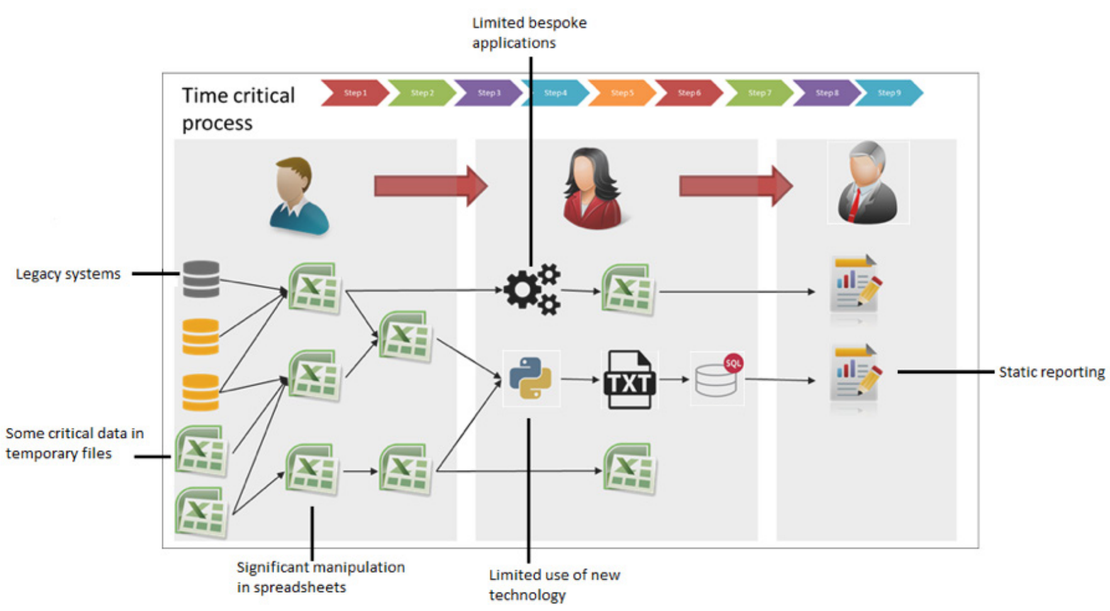
finance and actuarial make the comparability and the reconciliation of results a challenge. Also, to comply with new regulatory developments, such as IFRS 17, the business might use advanced modelling techniques, including stochastic projections, which are difficult to imagine doing in a spreadsheet.

On the other hand, the demand for real-time (or near real-time) data is increasing strongly, both due to regulatory frameworks as well as competitive pressures. Management are using financial models in important and often, time sensitive, business decisions. Often, however, generating and structuring the necessary financial data needed to support these financial models take too long. For information to be relevant and useful, it also needs to be timely available.

There is also a greater need for transparency in financial planning and reporting processes. This is because the consequences of model and parameter errors are more severe e.g. fines, reputational damage and sub-optimal decisions. There is a necessity to understand the processes better, but they are built up from numerous disjointed legacy systems, with several weaknesses and internal processes only a handful of people know. Thus, the governance around these processes is likely to be weak and there is significant key person risk involved.

Standard Response to Current Processes

Our standard approach is to simply add more people to each step of the process in order to collate the data and perform the necessary calculations in the same way as we previously did, as illustrated in the flow diagram below:



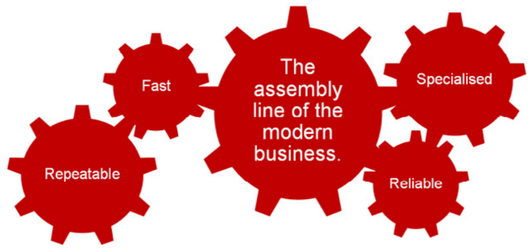
This approach leads to the following:

- Fragile models and additional ad-hoc manipulations & analyses having to be carried out
- It is expensive over the long-term and doesn't solve the critical path issue
- Less transparent processes
- Slower and more manual processes
- Inflexible and limited model outputs

The above-mentioned points all lead to further problems for the company, such as:

- An ever-increasing expense ratio – since money is thrown at new employees to keep things moving along
- Loss of market share to competitors who are using high-tech analytics and lightning fast processes
- Management having to explaining differences to the board & regulators with every report submission
- Never getting to the value-adding analysis because your process results are produced right at the last minute

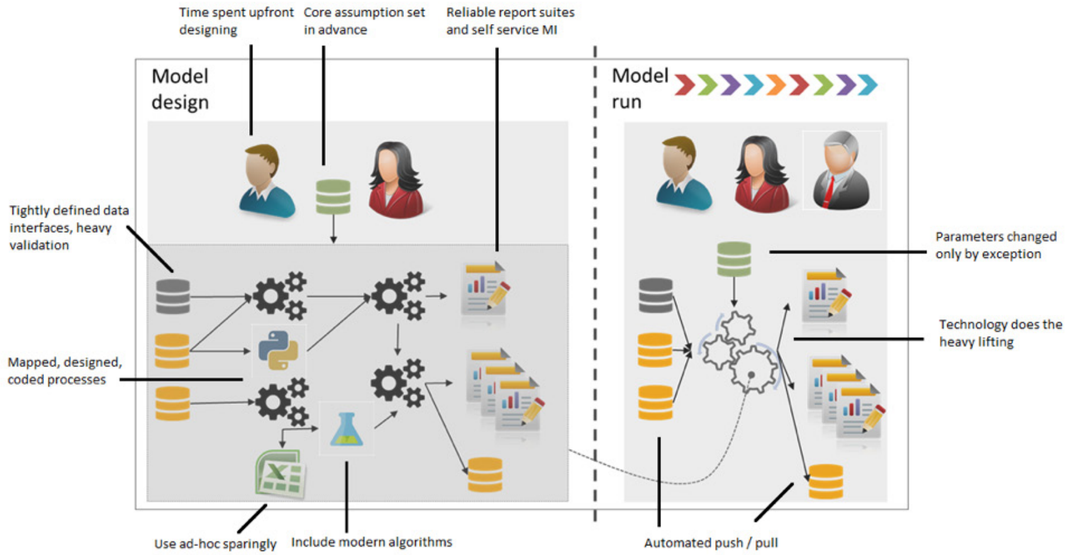
Process Industrialisation Response



We need a fundamental rethink of our processes and we need to remove unnecessary experts from the critical path as far as possible, because people tend to slow processes down. We need to embrace enterprise-level technology and move away from spreadsheets, to centralised, locked-down and controlled applications. Some people may argue that this is an unrealistic target as actuaries always need the ability to make manual adjustments. However, industrialised processes can be built in such a way, that they accommodate the ability to perform manual changes through a validated interface, thus ensuring the robustness of the process. If this is done successfully, the final result will be a process that is stable over time, produces results that are easily explainable whilst keeping track of the key assumptions and manual adjustments made along the way. This frees up more time for analysts and actuaries to focus on value-adding areas, such as expert judgment, analysis of change, profitability by source, as well as making recommendations to management. These areas are arguably the more interesting areas of actuarial work, and as such, it can have a positive impact on staff retention and reduce recruitment costs.

What does an Efficient, Industrialised Process Look Like?

The process illustrated on page 32 is likely to be faster, more reliable, more robust, consistent and transparent than a spreadsheet-based approach. However, significant upfront investment is needed to make such a process work efficiently. In order to make the industrialisation process as cost-effective as possible, management first need to decide which of the current processes are the most important and which parts can be discarded. This can be achieved by engaging with the different stakeholders, such as underwriters, actuaries and the board to determine what information would encourage them to make better decisions and make more efficient use of the information they receive. Time needs to be spend upfront designing a modelling environment which is both fit for purpose and meets the needs of all these internal and external stakeholders. Actuaries should be involved in the entire model building process, so as to ensure a strong operational and actuarial control cycle.



Efficient, Industrialised Process

Next, there is a need to define the data sources, the assumptions, the process flow, the dependencies between the different components, as well as the necessary validation and reporting requirements. This includes finding out what data one function needs from another to carry out this part of the process. Actuaries also need to identify the mandatory validation points and build automated analyses and validation to be run during the process. There should be rigid validation between the various stages of the process to ensure each stage functions as intended. Manual workings also need to be coded into algorithms, clearly specifying the points in the model where manual intervention is needed, for example the updating of a valuation date.

Lastly, the process should be moved to an industrialised platform where the process can be built, secured and locked down, enabling automated batch processing of model runs. Industrialising is not about automating only a small part of the business-critical processes, but about providing us with a clearly governed, start-to-end process, covering the links between multiple systems, projects, data sources and calculations.

Conclusion

Successful implementation of an industrialised process delivers a range of benefits that almost certainly outweighs the costs. The final result is a financial process which provides you with reliable, valuable business information in near real-time, which is more likely to be trusted and relied on by Boards and Management for their strategic decision-making. This will also free up resources, enabling actuaries to focus more on the assumptions, results, expert judgement and additional analyses, avoiding the risk that actuarial function work becomes a box-ticking exercise.