Process improvements & efficiencies: Getting more with less

Introduction

In the rapidly evolving insurance industry, process improvements have become a critical aspect of maintaining competitiveness, reducing costs and reducing operational risk.

In recent years, the focus on process improvements have been somewhat overshadowed due to the global pandemic and the implementation of IFRS17. These pressing concerns have diverted resources and attention, potentially leaving room for operational inefficiencies to creep in. As companies continue to adapt to new requirements, it is crucial for insurance companies to re-centre their attention on process improvements. This will not only ensure optimal performance and compliance with requirements but also equip them to better handle future disruptions and regulatory changes.

While the industry has been grappling with various challenges, technological advancements have continued to evolve at a rapid pace. Many of these innovations, such as artificial intelligence and machine learning, hold significant potential for process improvements within insurance companies. If companies haven't undertaken a review of processes in the last 3–5 years, then the possibilities and techniques for process improvements are very different from when these were last considered in a strategic way. Companies can tap the power of these new tools for efficiency gains and building robust processes. But it isn't all about new technologies either—a large part of process improvements is about taking a step back and applying expertise and common sense to unclog blockages and delays in the current processes.

This briefing note will delve into the benefits of process improvements and the current pain points faced within insurance companies (in particular actuarial, finance and risk functions). It further covers how companies can tackle process improvements and transformations along with various options available to implement these changes.

WHY IS THIS IMPORTANT?

The benefits of process improvements and optimisations can span across various aspects of the business, from cost management and efficiency gains to regulatory compliance. We have discussed a few of the key benefits below.

- **Cost saving**: By streamlining operations and eliminating redundancies, process optimisation can significantly reduce operational costs and optimise the overall resources within a function.

- **Time saving:** Shrinking deadlines mean that efficiency within reporting processes is now key. Process improvements can expedite workflows, shorten reporting cycles and reduce turnaround times for non-BAU requirements as well. Increased efficiency means there will be more time for judgement, analysis and decision-making.

- **Better insights for faster decision-making:** Refined data collection and analysis methods provide insight into operations, performance and risk management, enabling quicker and more informed decision-making.

- **Reduced risk of operational errors:** Streamlined, well-defined processes minimise the likelihood of mistakes, reducing the risk of operational errors and the associated costs.

- **Staff satisfaction:** An efficient, less stressful work environment, achieved through process optimisation, creates a more enjoyable workday and can keep employees motivated to look into strategic issues which can boost employee satisfaction and retention.

- **Regulatory compliance:** Increased expectations from regulators and auditors in respect of implementing adequate process controls and documenting audit trails require robust processes. Process improvements ensure operations align with regulatory requirements, mitigating the risk of non-compliance penalties and reputational damage.

- **Operational resilience***:* Improving processes can play an important part in operational resilience too. Aside from more robust processes, it can increase the understanding of processes and the various risks and dependencies. It can also enable entities to reduce reliance on third party providers and to have more thoughtful engagements with third parties for more effective monitoring.

Milliman

WHAT PROBLEMS CAN THIS SOLVE?

Having explored the benefits of process improvements, we will now delve into some of the specific pain points within actuarial functions which these improvements can address.

- **Data quality control**: Actuaries often get data in various types of formats such as Excel, csv or text files to name a few. Things become even more complicated when the formats for each of the files are not consistent. This results in a cumbersome process with multiple sub-processes to collate, transform and do quality checks on data. For instance, asset data used for Solvency II calculations or asset liability modelling is often received in multiple formats from asset managers and at various levels of granularity. This makes asset checks tedious and time consuming for actuaries and risk managers.

  Implementing robust data management systems can help to manage large volumes of data such as asset data, policyholder data and claims history. For instance, robust data processing tools can be implemented to combine and transform data required for cashflow projections swiftly and with adequate controls. As another example, using a centralised data repository can ensure data accuracy and consistency, facilitating more precise actuarial calculations.

  Moreover, with the implementation of IFRS17, there is a need for a lot more granular data for valuation purposes. This further necessitates the need for strong database systems which can provide reliable and robust data at required levels of granularity for various end-users.

- **Synergies across reporting bases:** Insurance companies report on various reporting bases particularly those which are operating in multiple geographies or if their holding companies are established outside Europe. They often report in one or more of Solvency II, US GAAP, Bermudan EBS bases along with newer reporting standards such as IFRS 17. Often, the processes have been built at various points in time when these reporting frameworks were introduced and then merged with existing processes without streamlining the full process.

  For instance, some companies still produce results on legacy reporting frameworks which may no longer be required just to produce results for Solvency II or IFRS 17 simply because that's the way their systems were originally established. This leads to huge cost in terms of the number of resources required and maintenance of the system—and leads to longer turnaround times.

  Hence, developing a unified reporting framework that caters to all the reporting bases required by a company can reduce duplication of efforts and remove redundancies in the process.

- **Inadequate or outdated valuation controls:** The checks and controls on data, assumptions models and output can sometimes be outdated due to legacy processes that are unfit for the purpose but are still being continued. This can especially be the case where there has been an M&A leading to a change in actuarial teams or a transformation has taken place to move responsibility from one entity to another.

  The inadequate or outdated valuation controls can be a significant risk as they can lead to material errors which are not detected by the existing systems and processes. This can materially impact results produced by companies and can also lead to missed deadlines if errors which need to be fixed before submission are identified late in the process.

  Updating and enhancing valuation controls can ensure they align with changing back-end systems or data providers, current market conditions and regulatory requirements.

- **Deeper insights and innovative solutions:** Use of newer technologies or simply being better organised with the existing processes can provide deeper insights into the data and results.
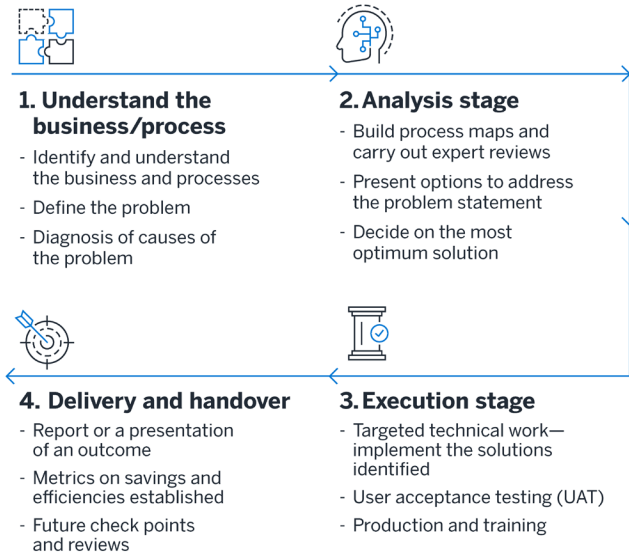
  For instance, use of data science techniques can provide far greater insights into policyholder behaviour. Traditional methodologies for the measurement of experience (for example, lapse investigations) are already founded on basic data science techniques. However, more advanced techniques, like machine learning classification methods or deep learning can allow firms to make use of both structured and unstructured data, and to explore the interconnectedness between different factors which might collectively influence the behaviours of policyholders. This can be especially useful in understanding dynamic behaviour, i.e. variations in expected behaviour over time, owing to the influence of other factors which can significantly affect the overall potential variability in experience.

Legacy reporting processes and outdated valuation controls mentioned earlier may contribute to accumulation of technological debt over time. By implementing robust data management systems and modernizing controls, companies can not only resolve immediate issues but also reduce the long-term burden of this debt.

These are just few cases where insurance companies can optimise their processes. Every company has a unique business model and its necessary to identify specific issues faced by a company and come up with a list of top challenges or pain points to resolve them.

HOW TO SOLVE THE PROCESS INEFFICIENCIES?

The approach to make processes and operations more robust and efficient depends upon the process under consideration, the nature of the business and its organisational structure amongst other things. One suggested framework to look at process efficiencies is described in the following infographic.

1. Understand the business/process
- Identify and understand the business and processes
- Define the problem
- Diagnosis of causes of the problem

2. Analysis stage
- Build process maps and carry out expert reviews
- Present options to address the problem statement
- Decide on the most optimum solution

4. Delivery and handover
- Report or a presentation of an outcome
- Metrics on savings and efficiencies established
- Future check points and reviews

3. Execution stage
- Targeted technical work— implement the solutions identified
- User acceptance testing (UAT)
- Production and training

IMPLEMENTING PROCESS IMPROVEMENTS – A WIDE AND VARIED TOOLKIT

The execution phase is a critical phase in the process optimisation process. Here the targeted technical work is carried out to address process inefficiencies and the most optimum solution identified in the analysis stage is implemented. The targeted technical work can take various forms depending on the problem statement. This can include end-to-end process transformations within actuarial functions or optimisation of a particular process. The beauty of this is that the process improvements don't have to be tackled the whole lot at once but can instead be implemented in manageable smaller steps that still make a meaningful difference if time and budget for a large-scale transformation project are constrained. Some specific examples include the following:

1. **Tackling the data**
   a. Streamlining sources of data to reduce the number of sources (and contradictions)
   b. Implementation of centralised data warehouse
   c. Automate data quality checks from multiple sources
   d. Exploring data dependencies and open conversations with other teams and providers on expediting delivery dates for key data inputs

2. **Simplifying and automating your files & processing**
   a. Standardise file and templates
   b. Implement proper End-user computing (EUC) controls across the process
   c. Re-order processes / data flows
   d. Created more streamlined or automated hand-offs of data and information between different files or stages of the process – reducing the need for human intervention

3. **Better project management of processes**
   a. Better project management, including timetables, deliverables trackers and checklists
   b. Re-order processes and data flows – examine with a critical eye
   c. Sign-offs and closure processes
   d. Lessons learned logs and processes
   e. Clear ownership and responsibility
   f. Process manuals and documentation
   g. Foster a culture focused on quality and review

4. **Create & embed controls**
   a. Effective controls are the lynchpin of a good process. Front-load controls in your processes to catch and rectify errors before it is too late.
   b. Automate controls within processes
   c. Set tolerances for each control to clearly define passes and fails that warrant investigation
   d. Create a defined structure or template for problem solving and error checking when controls fail

5. **Review of technical approach/methodologies**
   a. Simplify the existing approaches. Exploit "short-cuts" that are allowable within the regulations.
   b. Aligning the approaches to the industry standards and peers.

6. **Reporting and communication**
   a. Improved and automated reports and dashboards
   b. Create better infographics for deeper insights

7. **Model development**
   a. Identification and implementation of most optimum platforms to model assets, liabilities, and solvency capital among other items.
   b. Consolidation of various actuarial models into a single platform
   c. Review and streamlining the existing code

The benefits of the above process improvements can truly be realised by building a strong culture of improvements and efficiencies throughout the team and wider organisation (and to avoid build-up of future inefficiencies).

IMPLEMENTING PROCESS IMPROVEMENTS – SOME NEW TECHNOLOGY TO CONSIDER

Whilst process improvement isn't all about technology, software or coding—it can sometimes be the focus. As mentioned above, if companies haven't invested in improving the processes in the last 3–5 years, it's likely that the landscape and options available are considerably different than when these were last looked at.

A blend of the newer tools with the existing time-tested tools can prove to be optimum to implement these measures. In any case, a careful selection of tools is required which can be integrated with existing processes and doesn't needlessly complicate the processes. We have included some of the tools below along with examples of their use cases:

1. **Generative AI:** Advanced technologies under the umbrella of Gen AI have numerous use cases that can significantly enhance processes. Gen AI can provide powerful predictive modelling capabilities, leading to better risk assessment and faster calculations. Specific tools like ChatGPT, a part of Gen AI, can be used for tasks such as code development, conversion of code from one programming language to another, and documentation of the code.

2. **Python and R:** These open source programming languages are powerful tools for data processing, actuarial projections and experience studies, amongst others. These tools can also automate routine tasks, streamline complex calculations, enhance data analysis and reduce turnaround time. For instance, cleaning and transforming raw data as well as carrying out actuarial projections and report generation can be done on a single platform which can be either Python or R. They are good options for bridging between the existing systems—and with recent AI co-pilot developments it is easier for novice coders to debug or update broken code.

3. **Milliman Mind:** This is a flexible and easy to use web-based tool that converts Excel spreadsheets into powerful models with all the features and auditability of more expensive "black box" systems. It reduces coding time and runtime and optimises calculations for faster results all at lower costs.

4. **Power query:** A versatile Microsoft tool that significantly enhances data processing tasks such as connecting to a wide variety of data sources, transformation of raw data into a usable format required by actuarial calculation engines and automation of various tasks, amongst other uses.

INVESTING IN PROCESS IMPROVEMENTS

Many of us have the best intentions about fixing existing processes but never manage to carve out time for it (possibly because our current processes are taking too long). It is often the case that inefficiencies have crept into the processes and systems gradually over a period of time, especially when process improvements have not been considered as a strategic issue for a period of time.

Experience with clients has shown that it often makes sense to have an up-front investment for seeking external assistance or re-allocating internal resources to tackle these problems head-on. The future time savings will often pay this investment back, not to mention the wider benefits of the improvements like lower operational risk.

We would like to emphasise that the process improvements can be implemented through a strong collaboration between existing team and external assistance (if applicable) as well as the cross functional support. We invest time to understand the needs of the existing teams, identify the pain points and propose solutions which are not only acceptable but can also be embedded in the current processes and can be made future proof.

If you do feel this topic is of interest to you and some external assistance or expertise is required, we would be delighted to talk to you. Our offering includes:

- **Hands-on expertise**: As one of the largest life insurance consulting firms in Ireland, we've worked with numerous insurance firms that outsource their actuarial reporting as well as other actuarial processes to us which gives us hands-on practitioner's view of processes. This experience in providing actuarial services and optimising their processes has given us an insider's understanding of each company's needs and the strategies that work. We are thus ideally placed to provide industry leading solutions to optimise the actuarial processes of insurance companies.

- **Tailored solutions**: We provide solutions that are specifically tailored to clients' needs. We take the time to understand each company's unique challenges and goals and design a solution that aligns with those goals.

  As an example, we assisted a client in automation of their process by carefully selecting tools to streamline their process and integrate with their other processes, and with their IT infrastructure, and it was made future proof to align with their roadmap of upcoming migrations.

- **Efficiency**: Our focused expertise and experience of handling process efficiencies with other firms allow us to implement process improvements more quickly than an in-house team. This means firms can start reaping the benefits of improved processes sooner and help existing teams to focus on strategic goals.

  The best process improvement projects come with a compelling business case that they will pay for themselves over a short pay-back period through the efficiencies gained.

- **Use of latest technologies**: We stay at the forefront of the latest technologies, ensuring our clients benefit from the most cutting-edge tools and techniques.

  As an example, we assisted a client to transform their existing MS Access database to Python. ChatGPT was used at various stages of the process including to transform the code

into Python language as well as producing the documentation of the code. This was then rigorously tested in Excel and other tools validating consistency in output and data integrity. This resulted in efficiency gains and reduction in operational errors, and it could be scaled in the future for additional functionalities if required

Milliman

Milliman is among the world's largest providers of actuarial and related products and services. The firm has consulting practices in life insurance and financial services, property & casualty insurance, healthcare, and employee benefits. Founded in 1947, Milliman is an independent firm with offices in major cities around the globe.

ie.milliman.com

CONTACT

Patrick Meghen
patrick.meghen@milliman.com

Ankur Jain
ankur.jain@milliman.com

Eoin King
eoin.king@milliman.com