IMPLEMENTING PROCESS MAPPING TO SUPPORT THE QUALITY OF OFFICIAL STATISTICS - *experience from Ireland.*

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Abstract

At the Central Statistics Office, (Ireland), CSO, we implement process mapping as a powerful tool to significantly ensure and improve the quality of Irish official statistics. Our process maps provide a clear description of statistical production processes.

A concise CSO Process Documentation policy is in place that communicates corporate goals and individual roles and responsibilities. This policy ensures good governance of process maps, supports maps to be maintained as current stores of corporate knowledge and promotes quality benefits of process mapping. All our process maps are standardised, linked to the Generic Statistical Business Process Model (GSBPM), embedding the GSBPM as the office process model.

This paper will outline the many benefits we gain from process mapping, to support quality. These include optimising the potential for continuous process improvement, supporting training and induction for new staff, promoting statistical literacy, embedding key knowledge of statistical processes in the organisation, linking process maps to additional survey documentation, and supporting resilience and risk management. The paper will also highlight how we share the quality benefits of process mapping across the wider Irish Statistical System (ISS) - supporting engagement with ISS organisations, supporting improvement of standards, supporting ISS organisations to gain Irish Statistical System Code of Practice (ISSCOP) certification. The paper will also include any lessons we have learnt and plans for gaining additional benefits to further support the quality of Irish official statistics.

Keywords: process, mapping, quality, benefits, support

Introduction

Process mapping was introduced at the CSO over a decade ago. A main goal for implementing process mapping throughout the organisation was to support the Quality of our statistical production processes and related official statistical outputs. Our introduction of process mapping was part of a wider organisational investment in Quality Management. A new division was established which prioritised the development of a multi-pronged Quality Management Framework (QMF). Process mapping was and remains a core component of the CSO's QMF.

Implementation of process mapping was underpinned by good supporting governance arrangements. This included strong senior management and corporate support to drive implementation. A corporate policy signed off by senior management was developed. This policy created a coherent policy framework to explain, support and put proper governance in place around the need for better documentation of our statistical work processes, and communicates how this should be driven by process mapping. In addition, a thorough maintenance system was established to ensure all maps stay updated and relevant to latest statistical production processes.

Our implementation of Process Mapping continues to embed and support the understanding and use of the Generic Statistical Business Process Model (GSBPM). All maps produced are aligned to the GSBPM (see screenshots at Appendix 1).

Process mapping of statistical production processes is now very well established at CSO. All maps are maintained to be up to date and relevant and new maps are completed for any new statistical outputs. Process mapping remains a key part of our approach to quality management and a key part of our QMF.

In more recent years CSO has increasingly supported the implementation of process mapping across the wider Irish Statistical System (ISS).

Benefits to Quality from Process Mapping

At CSO we use process mapping to benefit the quality of what we do and what we produce in many ways. Process mapping embeds key knowledge of our statistical production processes in the organisation, supports efficient production processes, promotes continuous improvement and more, that are further discussed below.

Building and embedding key knowledge in the organisation and supporting staff.

Process maps at CSO increase understanding and knowledge of how our statistical production processes work. Our process mapping of our statistical processes promotes thorough understanding through all stages of the GSBPM production framework. The mapping process empowers staff to efficiently document their working knowledge of the statistics they produce onto standardised process maps, aligned to the GSBPM. These maps are then stored centrally in a Quality Information System (QIS) database, accessible to all staff, creating a huge body of corporate knowledge on all the official statistics we produce at CSO (see screenshots at Appendix 1). Staff can access and review their own maps or the maps of any

other areas across CSO on the QIS. The maps can and are used as key learning and training resources. The maps support staff to fully understand their current work processes. The maps allow staff to recognise the importance of each persons' role in the overall production of high-quality official statistics. It also helps new staff or staff changing between work areas to learn quickly and efficiently about new production processes. Overall, our process maps empower staff to take ownership of the quality of the statistical production processes they are responsible for.

Continuous improvement, building efficiencies and managing risks.

Our process mapping clarifies where improvements can and/or should be made to current processes (Gareth and White, 2016). For example, mapping of current processes can identify bottlenecks, unnecessary duplication, potential data quality issues, potential sources of error, weak use of technology or similar issues and inefficiencies. This is turn informs where and how improvements can be made. This promotes a culture of continuous improvement and positive change management (Gareth and White, 2016). This also helps to highlight potential risks to the quality of our outputs and so helps us to proactively mitigate and risk manage to remove or minimise these. This further helps to promote and safeguard the quality of our official statistics and builds resilience into our production processes.

Balancing standardisation, innovation and efficiently capturing expert knowledge.

Our process mapping is implemented so that it encourages and supports a good balance of both innovation and standardisation. The maps are completed to common standards and aligned to the GSBPM. The maps recognise and capture the expert knowledge of staff. The staff responsible for the statistical production processes share their knowledge with a facilitating member of the Quality team in mapping meetings. All or any members of the statistical production team can attend the mapping meetings to share their knowledge. No prior work is needed from such staff, and this reduces burden on them. They simply communicate their working knowledge which is simultaneously updated onto their process maps using chosen draw software. It is a smooth and efficient process. Staff detail their regular work processes. All maps with all communicated processes are then edited to align to the GSBPM framework. This supports staff to own their maps and to take ownership for the quality of their work and the quality of official statistical outputs.

Supporting agility and resilience

CSO process maps support corporate agility and resilience by ensuring the knowledge necessary to repeatedly produce quality official statistics is securely stored in our organisation. The embedding in the organisation of core knowledge on process maps, of how official statistics are produced ensures we can repeat the production of our official statistics.

Supporting monitoring and evaluation, and facilitating quality assurance

Process maps enable monitoring and evaluation of statistical production processes. Process maps facilitate, inform and support assurance of quality at CSO. Several structural meta-data are attached to process maps, mainly indicating hard deadlines (e.g., Eurostat transmission dates) and metrics informing basic quality targets for the process (e.g., sample sizes, acceptable response rates, acceptable edit rates). These metadata are used to assess and manage quality, especially from a user's perspective. So, our process maps are used to support our quality assurance. When statistical outputs are selected for quality assurance, those undertaking the assurance will use the latest process maps as a key starting point to inform their assurance work. Such assurance review of maps can highlight areas where quality can be further improved and this in turn is discussed and agreed with stakeholders responsible for production.

Sharing the quality benefits of process mapping across the wider national system

In more recent years CSO has increasingly supported the implementation of process mapping across the wider Irish Statistical System (ISS). CSO actively supports other national producing organisations of official statistics in Ireland, to implement process mapping to ensure quality in their own statistical production processing. This support to other producers has in turn strengthened coordination and promoted Quality throughout the wider national statistical system. This work builds good relations with external producers and promotes attainment of common goals such as the increased use of standard classifications across datasets throughout the whole national statistical system.

Lessons

Prior to introducing process mapping it is worth investigating experience from other organisations, especially other similar organisations (other National Statistics Institutes). This

informed our use of process mapping. Implementation should have good support from senior management and staff and be underpinned by good governance arrangements and be supported with a clear organisational policy. The implementation should be practical and align to the needs of the organisation. At CSO we seek to empower staff to own their process maps and to make them benefit their work as much as possible. Our implementation recognises that production staff are typically very busy with regular production of ever-increasing numbers of official statistical outputs. Our process maps implementation enables them to efficiently communicate all their expert knowledge into GSBPM aligned process maps. These maps then act as a benchmark from which to learn and improve. They also ensure key statistical knowledge is efficiently captured and embedded in the organisation for the benefit of all existing and future staff.

In conclusion

At CSO we effectively implement process mapping to support and assure the quality of official statistics produced by CSO and by other producers in the wider ISS.

We use process mapping to deliver significant benefits to support staff to deliver quality statistical production processing. This results in more relevant, reliable, robust, and timely statistics for users, that support informed decision-making and evidence-based public policies.

Acknowledgement

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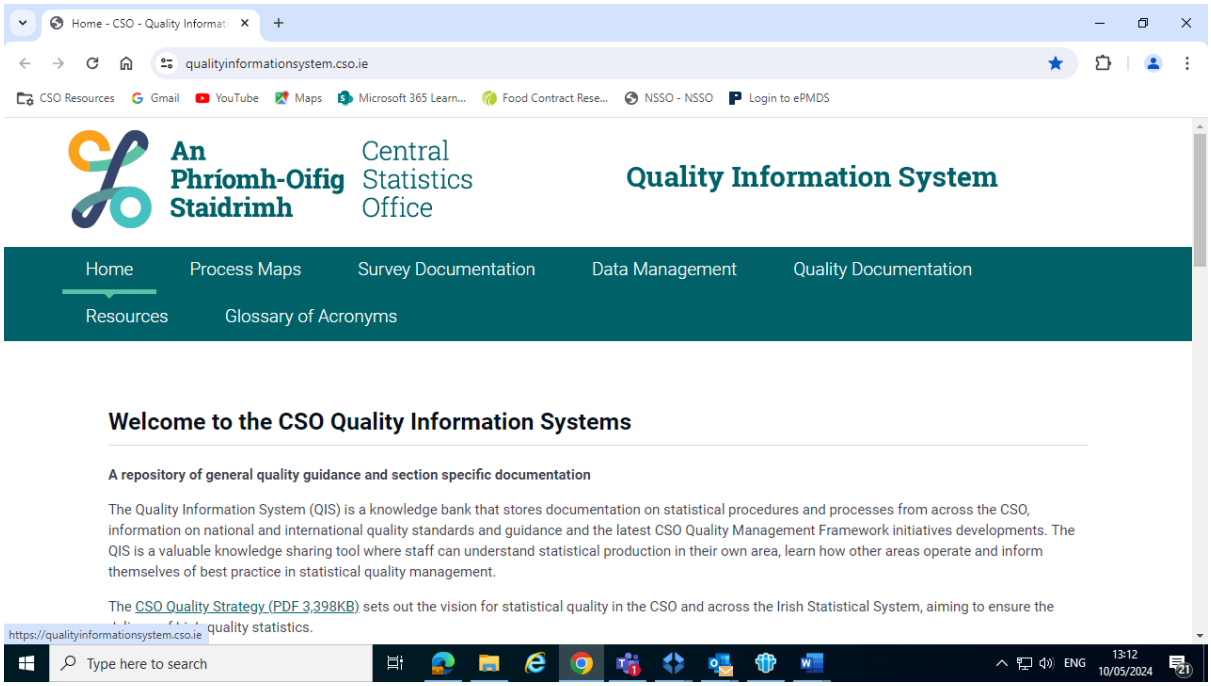
References

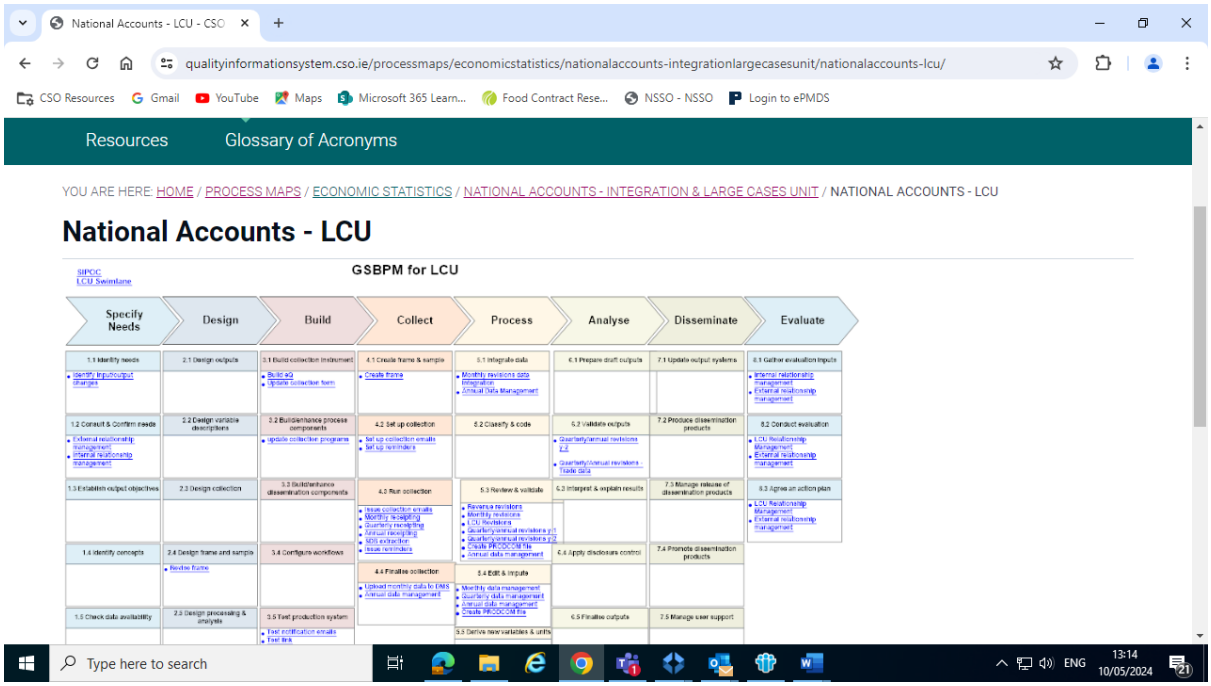
Gareth R.T. and White, S. C., (2016). *Knowledge acquisition through process mapping: Factors affecting the performance of work-based activity*, International Journal of Productivity and Performance Management, Vol. 65 Issue: 3, pp. 302-323

Appendix 1

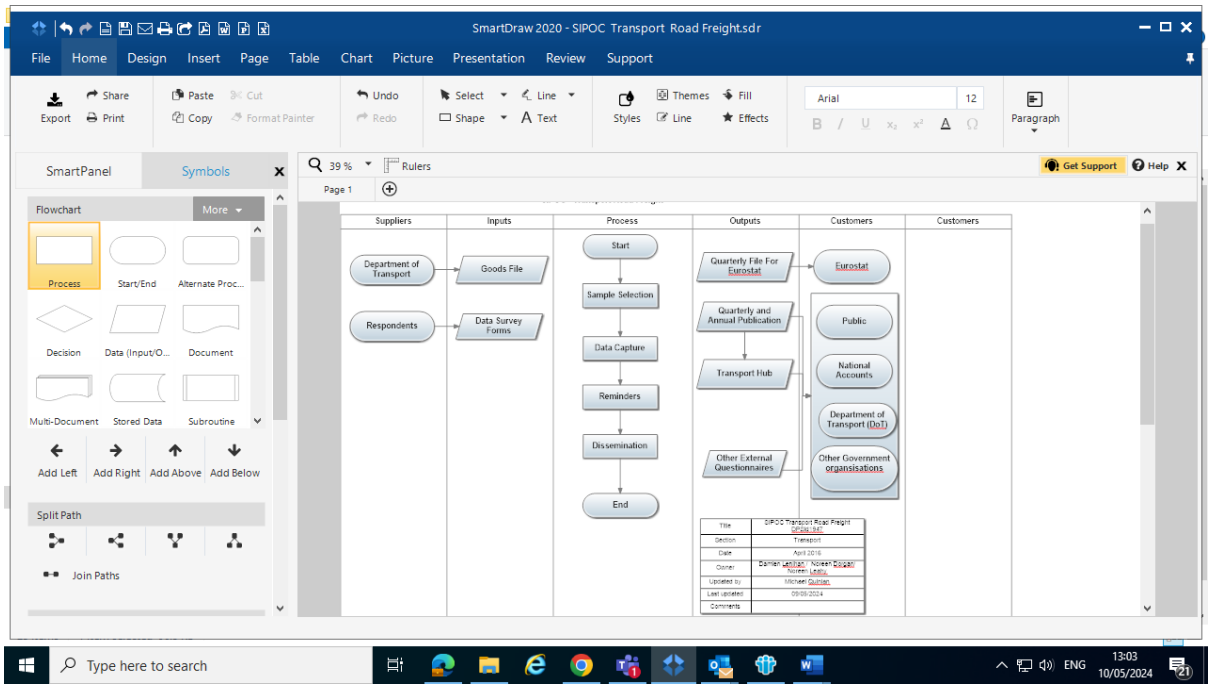
Screen shot of the Quality Information System (QIS) at CSO



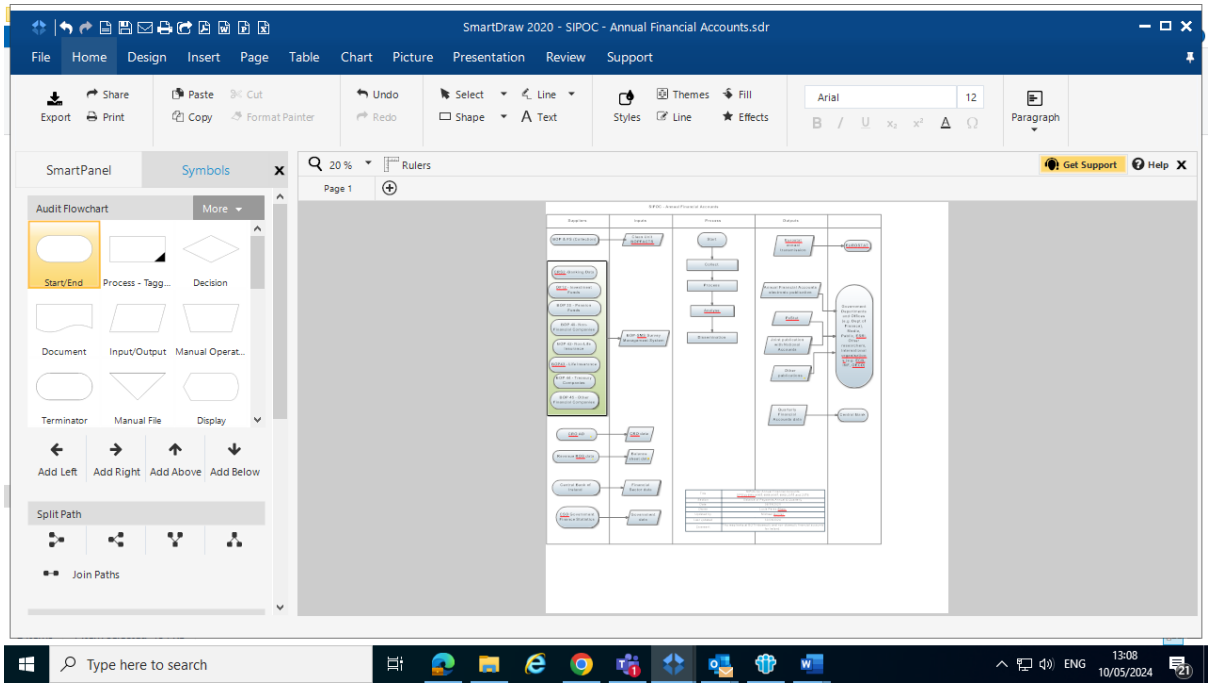
Storage of National Accounts maps on QIS.



SIPOC map for Road Freight Survey



SIPOC map for Balance of Payments (Annual Financial Accounts)



Process map1 for Road Freight Survey