

Assessing GSBPM Implementation at the High Commission for Planning, Morocco: A context of modernization and digital transition

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Abstract

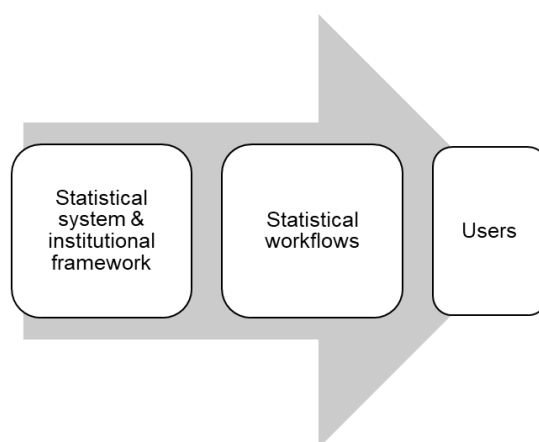
Our study delves into the implementation and ongoing application of the Generic Statistical Business Process Model (GSBPM) at Morocco's High Commission for Planning (HCP), with a specific focus on integrating innovation into the statistical system. This initiative forms a part of a larger modernization drive, which includes enhancing IT infrastructure, data management strategies, collaborative tools, innovative data collection methodologies, and the use of alternative data sources. The research assesses an overview on how some statistical operations within the HCP have adapted the GSBPM, improving process and sub-process descriptions. This has been instrumental in enhancing documentation quality and overall process effectiveness.

Keywords: GSBPM, NSOs, NQAF, Digitalization, HCP of Morocco

1. Introduction

National statistical offices (NSOs) play a crucial role for informing decision-making processes. The effectiveness of government policies and programs depends significantly on the fitness for purpose of these produced statistics. Indeed, a robust quality culture, characterized by a collective commitment to delivering high-quality statistical products and services, is essential. The National Quality Assurance Framework (NQAF) provides a structured approach to ensuring data quality, establishes clear standards and guidelines for statistical production, promotes transparency and accountability in statistical practices, and fosters continuous improvement in the accuracy and reliability of statistical outputs (UNSD, 2012).

Figure 1: The quality management framework of the NQAF



On the other hand, in recent few years, digital transformation has the potential to completely overhaul how institutions, including governments and businesses, operate. As a result, national statistical offices (NSOs) are under increasing pressure to adapt their digital capabilities to meet the growing expectations of data users (PARIS21, 2022). This is especially challenging for NSOs in low and middle-income countries, who may have limited experience with digitalization and struggle to keep up with rapid technological changes.

Additionally, successful digital transformation in the context of NSOs requires comprehensive institutional changes in areas such as governance, procurement, and human resources. This may involve building a culture of innovation and experimentation, developing policies and processes that support digital transformation, and ensuring that NSOs have the necessary resources and expertise to implement digital initiatives effectively.

Indeed, it is imperative that National Statistical Offices (NSOs) embrace a quality culture in official statistics during the digital transformation phase by adopting a NQAF, especially through the use of the Generic Statistical Business Process Model (GSBPM) (UNECE, 2019). This method preserves precision and consistency throughout all statistical procedures, hence guaranteeing data quality and integrity. These procedures are guided by an organized framework that GSBPM offers, guaranteeing the accuracy of the data gathered and handled. Even as many procedures are automated by digital tools, a robust quality culture guarantees ongoing monitoring and validation at every stage, reducing the possibility of errors. Moreover, using GSBPM has the major advantage of building trust and credibility is another critical reason for adopting a quality culture. Transparency in methodologies and processes is a key component of this culture, building trust among data users who can understand and verify the sources and methods used. Moreover, a commitment to quality ensures NSOs are

accountable for their data. Implementing GSBPM helps document every step of the process, making it easier to audit and review, thus ensuring accountability (Rancourt, 2019).

The HCP of Morocco in charge of collecting, producing, processing, and disseminating economic, demographic, social, and cultural data, has placed the use of digital technology at the heart of its professional model (HCP, 2022b). This imperative is all the more urgent as these technologies are currently experiencing exponential growth worldwide, and with the unlimited availability of structured and unstructured data, and augmented intelligence, the market for statistical information is open to the free circulation of products of all kinds, at all levels and from any official or alternative source. Similar to other international statistical organizations (Kanlić & Sector, 2020), the High Commission for Planning (HCP) of Morocco has initiated a project to digitize all aspects of its statistical production. This digital transformation is supported by the implementation of an insurance system to optimize processes and foster a climate of transparency.

This paper presents the general methodological context for adopting the NSQA and the GSBPM during HCP's digital transition. It emphasizes the importance of the quality system in enhancing statistical production. The work is organized as follows. **Section 2** is devoted to introduce a theoretical framework in order to fully understand the digital transformation and the adoption of GSBPM for NSOs concepts. In **Section 3**, we will present the status of the digitalization process at the HCP as well as the adoption of GSBPM and its impact on statistical production. Finally, we give some perspectives and conclusion.

2. Theoretical frameworks

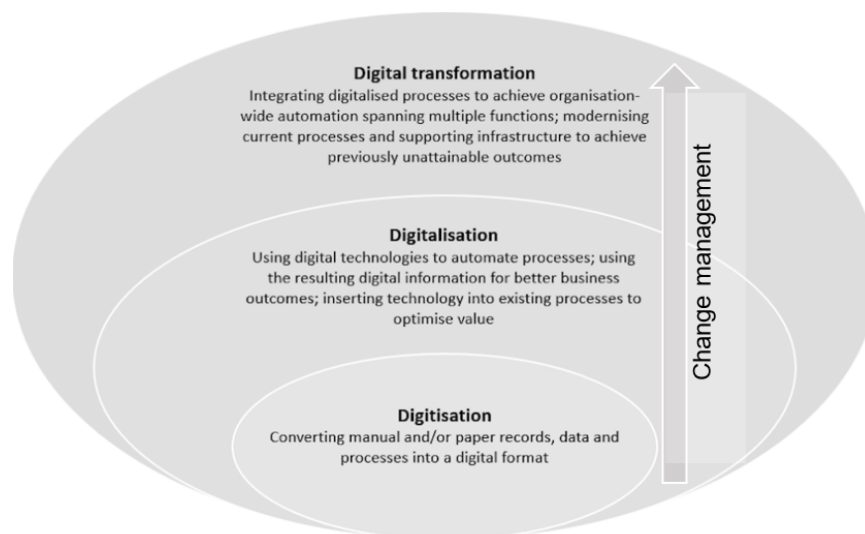
2.2. Digital transformation

Digital transformation has become an essential part of human life and is crucial for nearly every business seeking growth, expansion, quality, and sustainability. The concept of digital transformation can be divided into "digital" and "transformation." Traditionally, "digital" was synonymous with "information technology." Today, however, it represents the rapid pace of change driven by technology adoption, which puts tremendous pressure on existing organizations, often pushing them towards irrelevance (Shinde et al., 2014). Currently, organizations must develop digital policies to create frameworks that meet future goals across various subdivisions, encompassing procedures, services, and goods. "Transformation" refers to how digital technologies fundamentally enable new forms of innovation and creativity within a specific domain, rather than merely enhancing or supporting traditional methods. In a narrow

sense, digital transformation involves the shift towards a paperless environment, impacting individual businesses and entire societal segments, including government, mass communications and science.

With the changes they are currently undergoing, digital technologies are subjecting the NSOs of all countries to as many urgent obligations to revisit their technological environment as they offer opportunities to improve the relevance and quality of their products and services.

Figure 2: Digital organisation

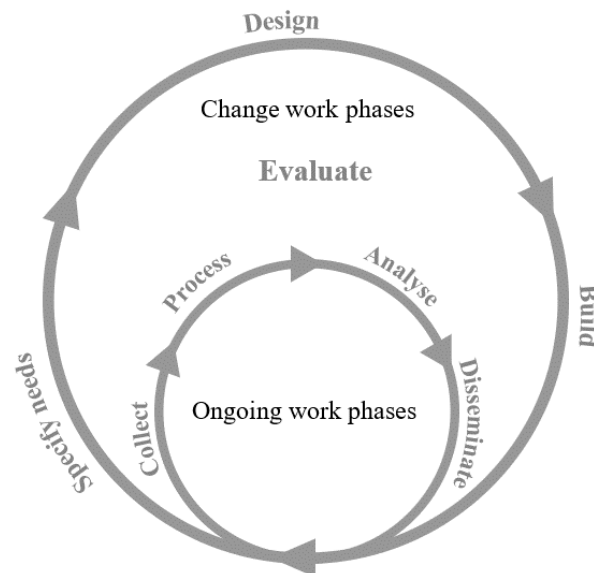


However, NQAF, plays a crucial role in change management during digital transformation. It provides structured approaches for assessing, monitoring, and improving the quality of processes and systems. By establishing standards and benchmarks, NQAF guides the development and implementation of new digital initiatives. Additionally, it fosters a culture of continuous improvement, helping NSOs adapt to evolving technology and business environments (Marker, 2017).

2.3. GSBPM

The GSBPM, was firstly founded on the business process model developed by Statistics New Zealand (Seljak & Steenvoorden, 2014). It furnishes a standardized framework and unified terminology, aiding statistical offices in modernizing their statistical production processes and facilitating the exchange of methods and components. Moreover, the GSBPM serves as a versatile tool for integrating data and metadata standards, serving as a blueprint for process documentation, aligning statistical computing infrastructures, and furnishing a framework for assessing and enhancing process quality (Vasyechko, 2020).

Figure 3: Ongoing work phases and change work phases of the GSBPM



In the realm of statistical organizations, initial phases are typically prioritized when introducing a new output or when revising processes based on evaluation outcomes. Once an output transitions into regular operations, these phases are often bypassed. For instance, there's no need to recreate data collection tools each time labor force survey data is gathered. This pattern is illustrated in Figure 3.

Thus, the GSBPM should be viewed as a flexible framework rather than a linear sequence. It offers numerous potential pathways, accommodating various scenarios. This approach aims for broad applicability and promotes a standardized perspective on statistical processes, striking a balance between flexibility and practicality without being overly rigid or abstract.

3. Assessing GSBPM Implementation at NSO of Morocco -HCP

3.1. A context of digital transition

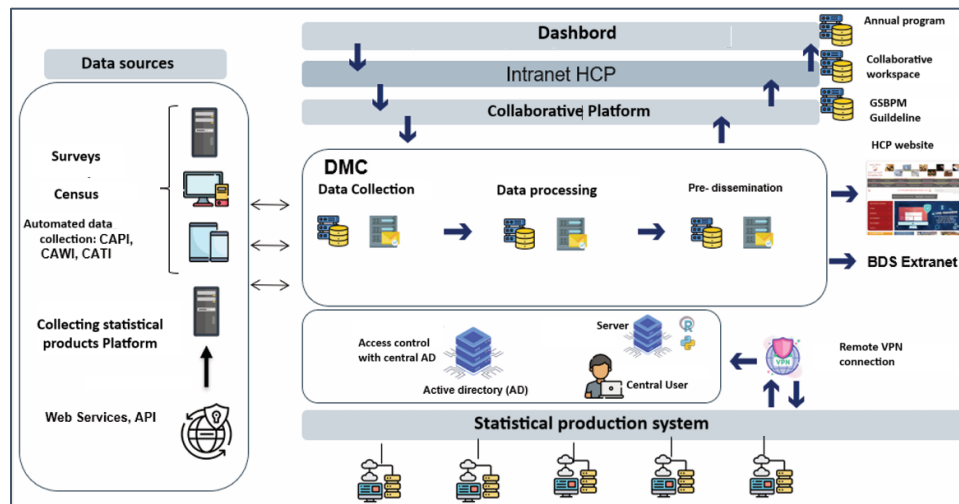
Moroccan Government was implementing the “Government digital transformation strategy 2019-2023”. Changing measures have been set up including legal & institutional framework, training, Research, security, specific services to support the digital transition for the administration and private sector. In 2021, the Minister in charge of the modernization of public administration is renamed “Ministry of digital transition and Administration reform”. In January 2022, the Minister launched the Initiative “MoroccoTech”, a national Brand for promoting the Moroccan digital sector.

The HCP had long considered the challenges and requirements of technological advances for the progress of its discipline. The adoption of several models, software, and various technological applications had already enabled the HCP to excel in the fields of Automatic Document Reading (ADR) in 2004, Computer-Assisted Personal Interviewing (CAPI) in 2007, the use of satellite imagery in the Geographic Information System (GIS), the progressive digitization of statistical production lines, the exploitation of internal cloud services, and the mastery of complex tools for macroeconomic, demographic, and social analysis, evaluation, and forecasting.

Indeed, by continuing this process of continuous modernization, the implementation of digital transformation projects at the HCP was initiated in 2019 in collaboration with international partners, notably Statistics Denmark, ISTAT, and INSEE. (HCP, 2022a). The aim was to simplify processes and gain efficiency while using innovative technological tools for the exploitation of statistical operations, by disseminating quality statistical products and providing user-friendly services to different users within the required timeframes and adapted to the specific needs of each. However, the digitalization process has mainly affected the following priority areas:

- Data Collection Automation
- Data Management Centre conception (DMC)
- Harmonization of information system tools
- Website redesign
- Collaborative platform design
- Big Data-Based Statistical Production and Innovative Center design

Figure 3: Ongoing work phases and change work phases of the GSBPM



Source: By authors and (HCP, 2022b)

3.2. Implementing a Quality Management System at HCP: an overview

In parallel with the digitalization projects, the HCP and Statistics Denmark have collaborated closely in order to develop a NQAF (Linnea & Klaus, 2023). The elaborated NQAF, consists of three key components:

- Producing metadata
- Standardisation: HCP has adopted the GSBPM
- Quality reviews of statistical products

Material collection for documenting processes according to the GSBPM has been completed for 15 statistical operations. However, it has not been feasible to gather all material for every operation, though process descriptions are available. For instance, documentation has been assembled for surveys such as the living condition survey, the Labor Force Survey (LFS), the annual business survey, and to varying extents for other statistical operations.

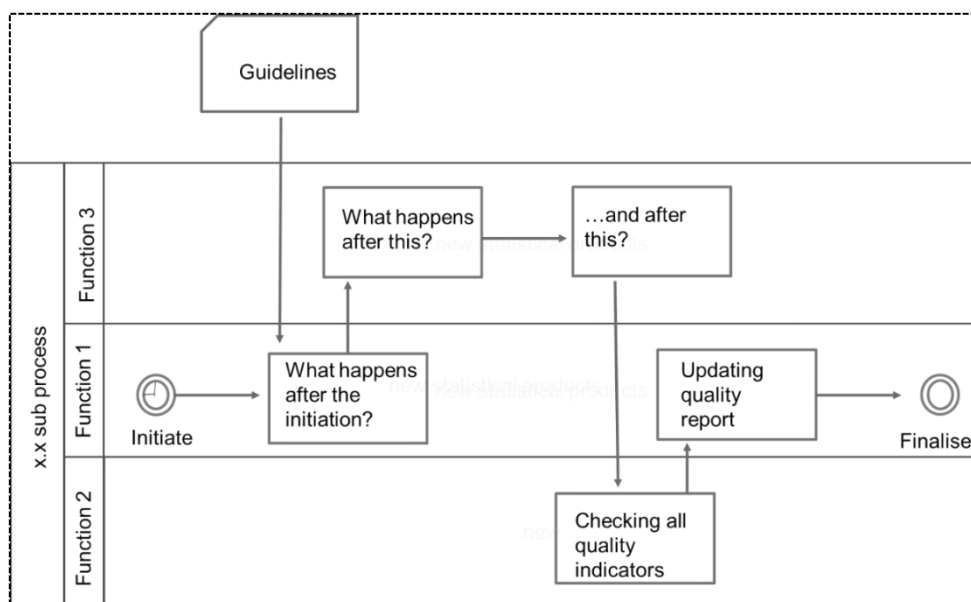
HCP was preparing to expand its training efforts to accommodate a larger workforce on GSBPM. The mission presented several recommendations:

- For existing statistical products, the focus was on phases 4-8, which are repeated in each cycle. Quality indicators were specified for each of these phases, and links to quality reports were established.

- For new statistical products, the suggestion was to start with phases 1-3 before progressing to phases 4-8. Quality indicators for each phase were specified, and links to quality reports were established.
- Standardizing the filing structure according to GSBPM was recommended for all statistics production activities.
- Aligning SIMS fields with GSBPM phases for quality reporting was advised.
- Guidelines that reference GSBPM phases for all statistical production activities were proposed.

The following structure is used as a starting point to identify and document production processes:

Figure 3: Document production processes structure



The quality team of HCP, has deeply documented Labour Force Survey sub-processes 4.1 and 4.2 using the above structure (Annexe: A1) . With the assistance of notes and discussions, a graphic illustrating the workflow for these two subprocesses was created.

Regarding quality indicators, HCP has been engaged in designing a minimal list selected from the report: "*Quality Indicators for the Generic Statistical Business Process Model – For Statistics derived from Surveys and Administrative Data Sources.*" The selection process considered criteria such as simplicity and ease of use, ensuring at least one indicator per sub-process and alignment with NQAF quality indicators. To determine the appropriate level for defining quality indicators, it was recommended to start with one phase. Given the significance of many indicators, choosing all phases initially could pose challenges in prioritization.

In terms of **quality reports**, three have already been published, including:

- Labour Force Survey report
- CPI Index report
- Local regional Accounts report

Guidelines for producing these reports have been developed and adapting relevant documents from SIMS to the ESS level. Moreover, the HCP IT team in collaboration with Statistical quality team, has developed and established a collaborative platform for management, monitoring and documentation of statistical production according to the GSBPM model.

Currently a questionnaire has been developed to measure the degree of sensitivity to quality processes within the general directorate of statistics and national accounting within the HCP. The questionnaire aims to evaluate the adoption of the GSBPM in the statistical production process, collect impressions on the completion of the GSBPM form, as well as collect information on the documentation of the statistical production cycle. In addition, it will collect the suggestions to improve the use of GSBPM and the documentation within the HCP.

Conclusion

Supporting informed decision-making is another vital aspect of adopting a quality culture. Ensuring data is accurate, timely, and relevant is crucial for informed decision-making. Digital transformation enables real-time data collection and analysis, which is essential for timely and relevant data. Additionally, focusing on quality means understanding and meeting the needs of data users. GSBPM emphasizes user requirements, ensuring the produced statistics are relevant and useful for policy-making and other purposes.

In this work, we have given a general framework for the application of GSBPM in a period of digital transformation. After introducing the theoretical framework of digital transformation and the need for change management in this period, we gave a theoretical overview of GSBPM. Subsequently, some elements and operations of the digitalization process within the HCP were presented. Indeed, the progress of the application of GSBPM in some divisions and operations was illustrated.

Acknowledgment

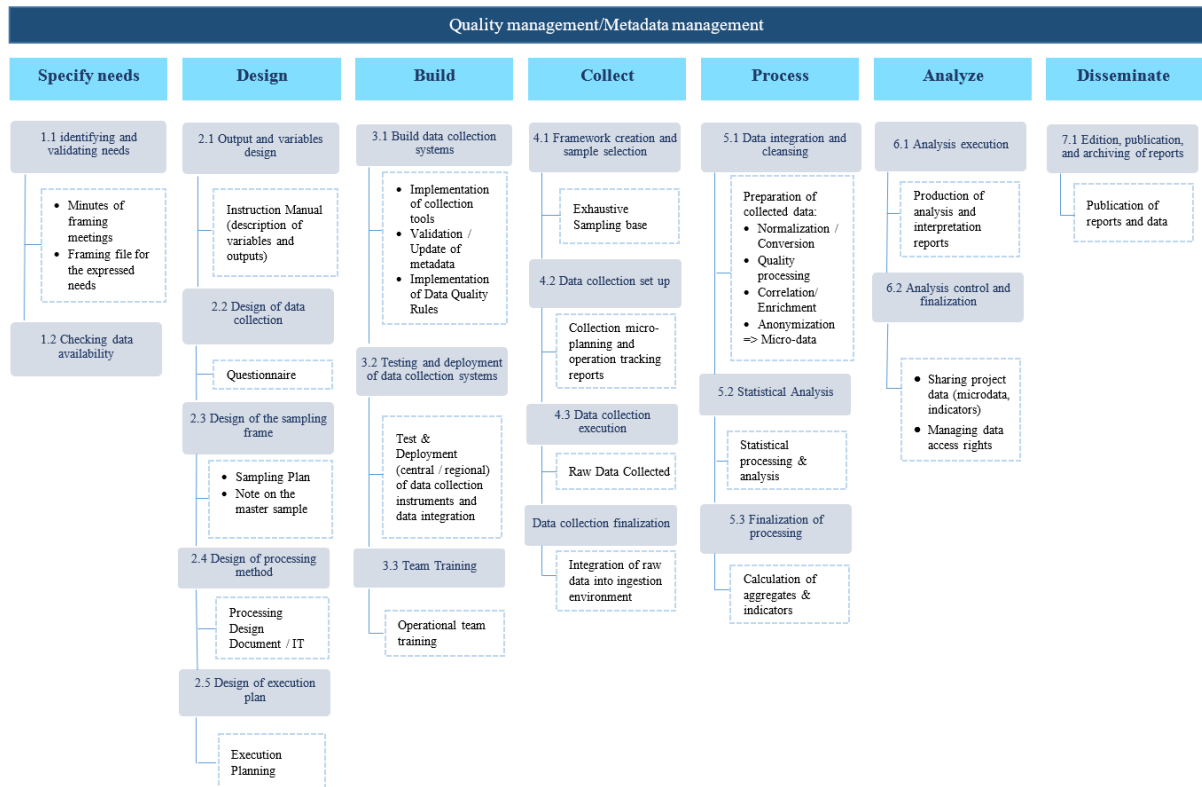
The authors of this article express their deep thanks to the HCP teams who successfully completed the digitalization process, in particular the Statistics Department teams, the Communication & Cooperation team, the Statistical Data Quality team, and the IT team.

Annexe

A.1. Levels 1 and 2 of the GSBPM

Overarching Processes							
Specify needs	Design	Build	Collect	Process	Analyse	Disseminate	Evaluate
1.1 Identify needs	2.1 Design outputs	3.1 Reuse or build collection instruments	4.1 Create frame and select sample	5.1 Integrate data	6.1 Prepare draft outputs	7.1 Update output systems	8.1 Gather evaluation inputs
1.2 Consult and confirm needs	2.2 Design variable descriptions	3.2 Reuse or build processing and analysis components	4.2 Set up collection	5.2 Classify and code	6.2 Validate outputs	7.2 Produce dissemination products	8.2 Conduct evaluation
1.3 Establish output objectives	2.3 Design collection	3.3 Reuse or build dissemination components	4.3 Run collection	5.3 Review and validate	6.3 Interpret and explain outputs	7.3 Manage release of dissemination products	8.3 Agree an action plan
1.4 Identify concepts	2.4 Design frame and sample	3.4 Configure workflows	4.4 Finalise collection	5.4 Edit and impute	6.4 Apply disclosure control	7.4 Promote dissemination products	
1.5 Check data availability	2.5 Design processing and analysis	3.5 Test production systems		5.5 Derive new variables and units	6.5 Finalise outputs	7.5 Manage user support	
1.6 Prepare and submit business case	2.6 Design production systems and workflow	3.6 Test statistical business process		5.6 Calculate weights			
		3.7 Finalise production systems		5.7 Calculate aggregates			
				5.8 Finalise data files			

A.2. GSBPM - Adapted to the HCP context



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