The French approach to quality through processes: A key role in risk management at INSEE

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Abstract

The risk management policy at Insee is based, on the one hand, on the French government's regulatory measures, particularly focused on cybersecurity, and on the other hand, on internal measures governed by official statistical institutions.

The specific protocols at Insee aim to identify the main risks associated with projects, ensure the efficiency of its activities, and optimize and secure processes. These protocols play a key role in the quality policy of French public statistical system, which aims to « integrate quality into processes by improving their security and effectiveness ». Risk management and quality management are therefore closely intertwined. Within the Quality Assurance framework established by Insee, analyses of operating process quality are considered the most effective way of addressing various aspects of their security.

This article presents the process analysis approaches implemented by the Quality Unit. They require collaboration between the teams in charge of processes and quality experts to develop an overall and shared vision of a process, before identifying the risks involved and defining an action plan to control them more effectively.

Beyond presenting the method used to implement these quality initiatives, this article aims to show their positive impacts on process security and their role in risk management at Insee. Examples are given to illustrate the improvement in risk awareness and tangible results at the operational level. Nevertheless, teams have little control over certain more overarching risks in terms of action. Therefore, quality initiatives are a necessary part of Insee's wider risk management system.

Keywords: risk management, process quality analysis, process mapping, securing

1. Introduction

The National Institute of Statistics and Economic Studies (Insee) is attached to the French Ministry of Economy and Finance. Its rights – above all its professional independence – and obligations are enshrined in French statistical law. Unlike most other national statistical institutes, Insee has two specificities: it conducts economic and social studies based on the data it produces, as well as short-term economic forecasts; and it manages inter-administrative records of people and economic entities on behalf of all stakeholders (missions specified in French law). Its more than 5000 employees are divided between a general directorate and 16 regional directorates. These regional directorates conduct

statistical studies on local topics but also contribute to national production activities, with data collection services or centres of expertise for example.

The European Statistics Code of Practice (CoP) is the ethical reference framework for the entire Official Statistical Service, composed of Insee and Other national Authorities (ONAs). The resulting Quality assurance framework is under the responsibility of a cross-functional support service at INSEE, the Quality unit. Quality management is overseen by the Strategic Committee for Quality, composed of the directors of Insee, representatives of ONAs and regional directorates, and the head of the Inspectorate General.

This article begins by presenting Insee's risk management policy, which takes account of Insee's institutional position within the French administration and among official statistical institutions. This policy is also based on internal mechanisms, notably its Quality Assurance framework.

We will then look at how this quality framework responds to risk management, before concluding with an assessment and outlook.

2. Risk management at INSEE coordinated with quality management

2.1 A policy based on existing mechanisms

In reflecting on its risk management policy, Insee has chosen to rely on existing mechanisms. Firstly, the regulatory frameworks of the French administration and the Ministry of Economy and Finance, which are heavily focused on the IT sector (risks of cyberattacks and chain reactions caused by IT malfunctions). Secondly, the Official Statistics Authority and the National Council for Statistical Information, both regulatory bodies of the French official statistics sector, also monitor high-level risks which can impact respectively independence and relevance, two key elements of the CoP. More broadly, peer reviews monitor the risks of non-compliance with all the CoP's principles.

The Institute's internal risk management systems focus on the areas of Insee's activities, particularly to optimize and secure processes. In doing so, they are in line with the quality policy defined for the entire Official Statistical Service which is to "Integrate quality into processes with the aim of securing processes and enhancing efficiency".

2.2 Combining risk management and quality, an approach in line with international recommendations

Associating risk management with quality management is one of the key messages of the Unece guidelines on risks in official statistics: "Quality demands should encompass both quality criteria and demands related to risks". They encourage an integrated approach to risk, which supports quality by improving the integrity and quality of data through the identification, analysis and treatment of risks.

Furthermore, the guidelines advocate integrating risk management into the organisational culture, fostering a sense of belonging. At Insee, this is reflected in the adoption of the Quality policy and by extension of risk management on processes, through collectively defined orientations (called a "Quality strategy") implemented by trained staff.

2.3 The key role of processes in quality management and thus risk management: process mapping and « essential » processes

The definition of the Quality policy for French official statistics also indicates the key role given to the process level, which is common in the world of quality. Hence, the Quality unit has proposed a map of the 130 processes at Insee, grouped together in a tree structure based on the GAMSO model (Generic Activity Model for Official Statistics).

In a context of incidents that temporarily halted certain production processes (such as business registrations or the business survey collection website) and ministerial audits, Insee selected « essential » processes to define service continuity protocols. The Covid 19 health crisis has accelerated their prioritisation.

Processes related to Insee's own legal missions are among the essential processes selected. Likewise short-term economic forecasts, another mission specific to Insee, are considered essential. Other essential processes relate to more traditional missions such as establishing national accounts.

To help prepare the service continuity plan for the twenty essential processes, Insee management, as well as the latest peer review, recommends applying Quality approaches to them. This is considered to be the most effective and appropriate framework for dealing with process security.

3. The quality assurance and process security framework - describing before analysing risks

Insee has established a quality assurance framework covering all of its activities. One of its main modalities is process quality analysis conducted by the Quality Unit in collaboration with processes owners.

These process quality analysis comply with Unece guidelines on risk management. The outcomes of recent process quality analyses are presented below to learn from them.

3.1 Describing a process to share knowledge, gaining contextual risk awareness...

The first stage of a process quality analysis describes the process.

Even before modeling the process, sharing its context (objectives, constraints, different actors involved) is already informative. For the thematic business surveys, several European regulations and the involvement of multiple actors (process owner, 2 data collection services, a centre of expertise in methodology, support services such as IT) has been highlighted. At this stage of the process quality

analysis, the multitude of actors did not emerge as a real risk, as each actor represents a necessary core skill, but their geographical dispersion over 5 sites makes exchanges more complex, as was also mentioned for the labour survey for example.

Next, examining suppliers/inputs and users/outputs (using a SIPOC modeling approach – Suppliers-Inputs-Process-Outputs-Customers) can reveal other weaknesses, notably identifying, or even anticipating, potential bottlenecks at the beginning of the production chain. Processes using administrative data, or any other external source, can be disrupted if the format and/or content of these data are changed, due to changes in regulations for example. This was the case for the production of annual business statistics (European EBS regulation), for which those responsible were not adequately informed of the change in the format of tax returns (related to the payment of corporation tax), causing disruption to already tight deadlines. Fortunately, the tax returns were then sent in the old format during the first year of implementing the changes.

3.2 …and the risks intrinsic to the process

The Quality Unit naturally uses the Generic Statistical Business Process Model (GSBPM) to describe its statistical processes and adapts it for other types of processes. At the same time, the Quality Unit identifies the person in charge and other actors involved in each activity detailed in the sub-processes. This helps identify suboptimal flows. The GSBPM for thematic surveys of businesses, as previously mentioned, reveals that all the main actors (process owners, methodological service and collection sites) are involved in creating the sampling frame within a tight schedule. Distribution of tasks relies less on the core skills of each service but rather on a historical division of tasks that has never been questioned. Given the obvious risk of missing deadlines, it was recommended to reconsider a new division of tasks, based on the skills of the services and minimizing back and forth between them.

All of this description - the context and how the process itself works - provides an overall and shared knowledge of a process, which is an essential prerequisite for risk analysis, the second stage of the process quality analysis implemented by the Quality Unit.

3.3 Risk analysis, from shared perceptions to consensus

Brainstorming sessions led by the Quality unit, involving as many relevant stakeholders as possible, identify undesirable events, ensuring that all families of risk sources (as defined by the Ishikawa model) and all GSBPM activities are considered. The material collected is used to draw up a list of risks, characterised by their sources and undesirable consequences. These risks are ranked collectively according to their level of risk, measured by the product of three parameters: probability of occurrence of the risk source, severity of its consequence, and current level of risk control, according to 4-level scales. An action plan is then established collectively for unacceptable risks, when the level of risk exceeds a certain threshold. This threshold is defined with the process owner according to what they

consider acceptable and according to the resources they will allocate to implement control actions. For each action in the plan, the actors involved and deadlines are identified to ensure a realistic action plan, which the teams can carry out and which will be validated at a higher hierarchical level.

3.4 The case of publications of short-term statistics, a process under strong time pressure

The risk analysis carried out on the « *Informations Rapides (IRs)* » process, a system for the publication of short-term economic indicators (Appendix1), involved about ten actors with various roles, who do not usually have direct contact. The brainstorming session provided an opportunity to share very different perceptions, highlighting a wide range of risks. The majority of the risks identified are mainly at an operational level, over which teams can have a certain level of control without hierarchical intervention. Some of these risks, such as the unavailability of functionalities in the relevant application, affect the tool used to put publications online. Others concern the efficiency of the proofreading and validation circuit, dissemination (delayed validation of publications, impossibility to disseminate, breach of embargo), or the quality of publications, such as non-compliance with editorial and/or accessibility standards. Additionally, risks requiring higher hierarchical approval were also highlighted, such as pressure on teams and deadlines, and the application's insufficient response to internal user needs due to a lack of human resources. All these risks could not have been identified if all the stakeholders involved had not participated in the exercise. For example, the embargo may be broken because the authors can discuss the results with external partners (data co-producers for example) before publication. This exchange circuit was previously unknown to the process manager.

The action plan revolves around several axes, such as optimising the scheduling of *IRs* to limit the risk of pressure on teams and deadlines, and ensuring compliance with embargo on these publications. Indeed, these publications are subject to early access by ministerial offices the day before publication, and to press agencies half an hour before their morning dissemination. The Short-term Indicators Publications Unit, composed of only 3 members, will henceforth have the option to discuss with authors the rescheduling of the dissemination of some *IRs* when tension points are identified in the schedule (up to 20 *IRs* can currently be published in the same week). In order to reduce the risk of embargo breaches, measures such as placing an embargo mention on all documents transmitted, before the embargo is lifted, have been implemented even before the end of the process quality analysis.

3.5 A participative method that objectifies the perception of risks

The example of the quality analysis on the process « *Informations Rapides* » also illustrates its flexibility, and its responsiveness to needs. Thus the action plan was not limited to risks that were deemed unacceptable. Indeed, while the risks related to the lack of efficiency in the proofreading

circuit were collectively deemed acceptable, they nevertheless impact the daily work of the authors. The significant number of reviewers for a publication, without clear guidelines on the expected angle of review depending on the level of review, and the lack of traceability of changes throughout the review process make editorial decisions complicated, wastes authors' time, and demotivates them. The teams therefore agreed to reconsider the proofreading circuit.

This example also illustrates the value of cross-perspectives on the process, in order to identify the strengths already present and to put the weaknesses in perspective. The authors of publications perceived the unavailability of the application as a significant source of risk, while its availability rate stands at 99% according to the service in charge of the application. Furthermore, the risk scoring, also considered complex, enabled them to put some weaknesses in perspective. Some points of discontent turned out to be minor, such as the fact that the application's interface is not very intuitive. Ultimately, the authors never really find themselves truly blocked, as the Short-term Indicators Publications Unit provides assistance when needed, and the *IRs* are disseminated on time.

3.6 A method to be repeated, to continuously improve and secure processes

Process quality analyses are part of an ongoing drive to improve and secure processes.

For process quality analyses to be effective, they need to be reviewed regularly. A process called « Réfigéo », which centralises and updates geographical data nomenclatures, benefited from a process quality analysis in 2017/2018, in the context of activity transfer from the general directorate to a regional directorate. From 12 unacceptable risks, the first post-transfer review carried out in 2020 retained only 3: « Information from a partner is not exhaustive », « The data retrieval circuit is not formalised » and « Suppliers do not send the expected data ». The initial risks related to the formalisation and reliability of input collection had been mitigated by the implementation of two measures: the setting up of agreements and service contracts with certain input suppliers and the drafting documentation on the collection of information from the Journal Officiel (official gazette of the French Republic). A single new risk emerged during the second review in 2023: « Divergence of content between dissemination channels », due to the introduction of new dissemination channels. The actions implemented throughout the analysis and reviews thus enabled the teams to improve the security of their process.

4.   Risk management through processes: assessment and prospects

4.1 Quality work appreciated by processes owners for its results...

The benefits of the process quality analysis have already been mentioned: effectiveness in identifying operational risks and remedial actions, prepared by an overall vision strengthened by the themes of CoP (knowledge of users, controls on data, metadata, etc.). According to the testimony gathered from

the operational teams, these approaches also represent a means to limit the risk of losing knowledge, which is common to all processes and very real given the frequent mobility within teams at Insee. It is also a tool that can encourage the pooling and multi-skilling of agents to facilitate service continuity, regardless of who is present.

4.2 ...but also for the collective process of the process quality analysis itself

The approach used to carry out process quality analysis is just as important as the outcomes. The importance of sharing views by all those involved in a process, who have different perceptions of the work of their colleagues in different departments or on different geographical sites, was illustrated. The Quality Unit guarantees an objective and impartial view, facilitating a constructive dialogue that the teams do not always have time to organise themselves.

4.3 A perfectible method: in search of ways to formalise process risk management

While process quality analysis have proved their worth so far, both in terms of team dynamics and the absence of major incidents among the processes examined, they can still be improved. Risk analysis would be more efficient if, as recommended by the Unece, a risk nomenclature were adopted. This would standardize analyses between processes (and within processes) and thus simplify the listing and formulation of risks by linking them to a standard. This would be all the more legitimate as the specificity of processes is reduced due to the development of tool mutualisations at Insee, especially for surveys. The ongoing « survey chain » project will offer a range of functionalities for both household and business surveys, covering design, multi-mode collection, and delivery of exploitable databases. The potential gains are very significant, but malfunctions can have a chain impact. This was the case for a prefigurative application limited to business surveys. A few years ago, when the application was halted for a fortnight, the response rates for several surveys fell and created internal management difficulties.

The Quality unit is considering this nomenclature of risks, which could be based on the principles of the CoP, to which other risks could be added, such as those relating to the working conditions of teams.

Risk rating criteria also need to be formalised. Unece recommends referring to values common to the organisation, which we have yet to spell out.

4.4 The need to also consider risks at supra-process levels and from different perspectives

Processes are the right level to work on quality and risks. Indeed, organisation and professional ethics at Insee are based on the empowering of the teams in charge of the processes, who master their entire execution.

However, teams can increase their control only over operational risks. Nevertheless, the process quality analysis sometimes highlight more overarching risks, often relating to resources (human resources, IT). But the question of the form in which these issues should be raised and instructed remains.

These process quality analysis are complemented by more cross-functional work to gain greater control. Working groups within the Official Statistical Service, for example, have resulted in protocols and policies on embargo rules, error correction in publications, and on the relationships between statisticians and suppliers of administrative or private data.

The institutions of the French official statistics and within Insee itself provide additional insights. The National Council for Statistical Information issues opinions on statistical projects, supplemented by the Label committee on advanced methodological aspects. Efficiency audits by the Inspectorate General, as well as the new systems projects issued by the investment committee, are also useful for the teams concerned. Process quality analysis complements this range, with these different perspectives accustomed to intersecting and being informed by each other's work.

The IT domain is a special case in terms of Insee's risk management policy. IT risks have far more cross-functional consequences than statistical production processes risks, as these processes are relatively independent of each other. Their management is largely covered by regulatory provisions.

As part of a larger-scale system, process quality analysis represents a necessary component in Insee's risk management. However, more processes still need to be covered by this work, a goal that the Quality unit is actively pursuing through efforts to promote and communicate within the Institute and more widely within the Official Statistical Service.

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APPENDIX 1 – The process of « *Informations Rapides (IRs)* »

The process of « *Informations Rapides (IRs)* », an essential process at Insee disseminates recent information about the economic situation in France, including price trends (consumption, production), unemployment rates, GDP. It contains around fifty indicators, published at different intervals (annual, quarterly, monthly), in French and English. Around thirty *IRs* are published each month, following the deadlines set by European regulations and International Monetary Fund dissemination standards. The scheduling involves multiple calendars: an annual calendar managed by the process owner (collected from authors) and quarterly and weekly calendars managed by the press office (fed by both the process owner and authors).

IRs are written by around forty authors (text, tables, graphical representations). The *IRs* process consists of formatting their contributions in the dedicated application, monitoring their reading and validation, and finally disseminating them. The Short-term Indicators Publications Unit manages and coordinates these activities, in direct collaboration with: the authors for *IRs* preparation and modifications during readings; the director of the General Director's cabinet at Insee for final validation before dissemination; the team in charge of the online publication application (DEDI); and the press office, responsible for sending *IRs* to ministerial offices and press agencies.

APPENDIX 2 – Extract from the action plan resulting from the risk analysis of the « *Informations Rapides (IRs)* »

Action	Person(s) in charge	Other actors(s)
For better control of the risk « Tensions weigh on the teams and deadlines »		
Consider of a more optimal scheduling of the publication calendar	Short-term Indicators Publications Unit Director's Cabinet	Authors' department
Reschedule *IRs* when tension points are identified in the calendar	Short-term Indicators Publications Unit	Authors' department
For better control of the risk « The application does not sufficiently meet the specific needs of users »		
Set up a users committee for the online publications application	Internet Publishing and Distribution service (1)	
Alert the appropriate instances about the current resources allocated to the online publication application, which do not seem to be in line with the dissemination challenges	Editorial Offer department (1)	
For better control of the risk « The embargo on an *IR* is breached »		
Affix the embargo mention on all documents transmitted before the embargo is lifted	Short-term Indicators Publications Unit Internet Publishing and Distribution service	Authors
Define the emergency protocol to activate in case of confirmed embargo breach	Director's Cabinet	Internet Publishing and Distribution service
For better control of the risk « Dissemination to users is jeopardized »		

Action	Person(s) in charge	Other actors(s)
Clarify the alert circuit in case of unavailability of tools (*insee.fr* website and/or messaging system) and identify the people/departments to be notified as a priority	Internet Publishing and Distribution service Director's Cabinet Press office	
Define and formalise the activation of a contingency plan in case of unavailability of the *insee.fr* website or in case of a major incident outside service hours	Internet Publishing and Distribution service	Short-term Indicators Publications Unit
For better control of the risk « *IRs* are validated beyond the set deadlines » and « The proofreading circuit lacks efficiency »		
Set up instructions for handling the unavailability of a proofreader	Short-term Indicators Publications Unit	Director's Cabinet
Rediscuss the proofreading circuit during an exchange session involving all stakeholders, from authors to the Director's Cabinet, including proofreaders from authors' department	Short-term Indicators Publications Unit	Authors Proofreaders / Validators Director's Cabinet
Continue to pass on the instruction to notify the Conjunctional publications unit as soon as possible of any delay in transmition of an *IR*	Short-term Indicators Publications Unit	Authors
For better control of the risk « The publication does not comply with editorial and/or accessibility standards		
Carry out an accessibility audit on *IRs*	Short-term Indicators Publications Unit	
Train authors and raise awareness among validators and proofreaders of the accessibility standards	Short-term Indicators Publications Unit	

(1) Within the Editioral Offer department, the Internet Publishing and Distribution service is responsible for the application for putting publications on line