

IMPLEMENTING REGULATION AUTHORITIES AND SAFETY REGULATIONS IN EUROPEAN ATM : A SOCIOLOGICAL PERSPECTIVE

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Introduction

The ATM European world is presently witnessing some wide institutional and organizational changes, one of the main one being the separation between ATM service providers and regulators at each national level, together with the implementation of Regulatory bodies within Eurocontrol.

In the Safety domain, the Safety Regulation Commission is in the process of setting up ESARRs (EUROCONTROL Safety Regulatory Requirements) together with a means for ensuring compliance by those subject to safety regulation. One of the main arguments is to make safety more explicit, more formalized, more controllable, and as a consequence, more visible.

Making things more visible is a key reference in the rationales of regulatory requirements. For example, ESARR 2 (Use of Safety Management Systems by ATM service providers.) defines Safety management as "that function of service provision, which ensures that all safety risks have been identified, assessed and

satisfactorily mitigated", and adds that "A formal and systematic approach to safety management will maximise safety benefits in *a visible and traceable* way. (I underlined). ESARR 3 (Reporting systems) calls for "the successful implementation of harmonised occurrence reporting and assessment schemes", and adds that "such schemes will lead to *more systematic visibility* of safety occurrences and their causes, and will allow identification of appropriate corrective actions as well as areas where flight safety could be improved by changes to the ATM system".

This trend in Air Traffic Management can be considered as part of a wider trend concerning the growing demand for transparency in society. There is, in fact, a wide use of this notion, and this is particularly the case in High Risks organizations. In this paper, we propose a sociological perspective on the issues linked to the implementation of regulations requirements and regulations authorities. Another way of expressing our question could be : what can be the answers and reactions of ATM actors to the growing demand of transparency that is linked to the regulation implementation today ?

Plan

A first part of this paper aims at framing the issues linked to this notion of transparency, with a specific focus on the issues linked to trust, as it turned out to be a notion that is intrinsically linked to transparency. A second part of this paper will present some results of a larger field work aiming at a comparison of ATM providers and national regulators in some European countries, all EUROCONTROL Member states. This part focuses on an analysis of the positions and points of view of ATM providers regarding regulation implementation.

Framing the notion of transparency : a short review

In political science, the notion of transparency is now at the heart of the political analysis of institutions. It is seen mainly as a regulation principle ("*Transparency plays the role of a reference myth for the whole set of systems of Power*"¹ said Professor Rideau). Transparency seems to lie somewhere between a principle and a virtue, and the difficulty of defining it in precise terms is such that transparency is sometimes considered to be one of these "soft" notions (Lequesne², 1999), that are overused in our democracies (e.g. subsidiarity, assessment, etc.)

A legal approach provides a more operational definition : transparency is always the transparency of "something" with regard to "someone" : laws on transparency always apply to a concrete contents and determine a balance of powers (*who* is entitled to see *what*). Lassalle³, for example, considers that transparency became one of the central values promoted by American democracy with the promulgation, in 1966, of the Freedom of Information Act. President Johnson, on the day of the promulgation of this act, declared that "*a democracy can be effective only if citizens have access to all the information compatible with state safety*".

The concept's recent vogue and, perhaps also, its overuse in the press in many different domains some

concerns over the dangers linked to an exaggerated focus on transparency. Guy Carcassonne⁴ criticizes the fact that transparency may be seen, sometimes, as an end in itself. He reminds us that "*transparency is a means, like others and amongst others, to attain the superior objectives that spring from the idea of democracy*". And he adds : "Its usefulness, as its legitimacy, must be gauged according to the objectives that it serves".

Mirroring this vision of transparency as a tool for democracy is the issue of how *individuals* are made visible to an *organization* (this organization being a government or any kind of institution). One of the first descriptions of this process is found in Foucault (*Discipline and punishment, the birth of the prison*, 1975). Foucault defines the Panopticon as a mechanism of control and "visibility" of individuals. In his evocation of Bentham's "panopticon", he proposes a symbolic model: a tower surrounded by a ring, divided into cells, with windows opening on the inner face of the ring, the other, outer, allowing daylight to pass through the whole cell, in such a way that the shadows of the occupants can be seen in black light. This can be seen as the architectural principle of a form of transparency, as stated by Foucault: "*in the famous cage, transparent and circular, with its high tower, powerful and erudite*".

The fear of a society that would make all citizens "visible" to a central power is emerging as a response to the increasing use of new techniques that facilitate various forms of invasion of privacy. Very popular in the development of a rhetoric that is critical of these new dangers, the reference to Orwell and his "Big Brother is watching you" is now classical. In recent years, the "Big Brother Awards" of the NGO Privacy International have given prizes to the government and private sector organizations which have done the most to threaten personal privacy in their countries.⁵ They identify a strong link between the development of new techniques and the invasion of personal privacy.

This short summary of the uses of the transparency notion allows to identify how much

¹ Quoted by Noelle Lenoir. Conclusion. Actes du colloque organisé par le CEDORE (Nice) sur "*La transparence dans l'Union européenne. Mythe ou principe juridique ?*" L.G.D.J. 1999.

² *La transparence, vice ou vertu des démocraties*, Christian Lequesne. Actes du colloque organisé par le CEDORE (Nice) sur "*La transparence dans l'Union européenne. Mythe ou principe juridique ?*" 1999. "L.G.D.J."

³ Lassalle. *La Démocratie américaine*. Colin, 1991.

⁴ Guy Carcassonne. *Le trouble de la transparence*. POUVOIRS, n°97. avril 2001, Seuil.

⁵ Privacy International (PI) is a human rights group formed in 1990 as a watchdog on surveillance by governments and corporations. To date, 11 ceremonies have been held in six countries and have given out over 50 awards to some of the most powerful government agencies, individuals and corporations in those countries.
<http://www.privacyinternational.org>

ambivalent is the notion : one role is linked as a mean for effective democracy, the other one linked to control and surveillance of individuals. Our hypothesis is that, if transparency plays a central role in today's debates, it is because it has different dimensions : performative (it is a guide for a policy for example), symbolic (as linked to values, some of them in an ideological aspect), and operational (it is able to transform things).

Transparency and Trust

What links ?

When speaking on transparency, a very related notion is the one of trust. Questions can be raised in a very basic way : is transparency the opposite of trust ? (I need information when I do not trust, or I do not trust if I do not have any information) or is transparency a requisite for trust building ? in this last case, how much transparency is needed for trust ? do we need more and more transparency in our modern life as a sign that we have lost trust ?

Social sciences would formulate these questions using the core notion of social link. The "social link" between human beings in a society is a core notion, and the analysis of the different kinds of links that group people together determine different models of society.

Do we shift from a period during which ATM providers were entitled to do what they wanted to do to a period to which, being less trusted (or at least less trustworthy) they would be now "controlled", they should provide information, knowledge, and made more transparent ? In a more academic and global way of formulating things : "are we replacing in our modern life a kind of social link based on *trust* by a social link based on *control* via transparency ?"

It would be much too simplistic to oppose trust and transparency in such a way. A German sociologist, Simmel, has given a very simple and elegant definition of trust, that allows for thinking in other terms than oppositional terms.

"Trust is also an intermediary state between knowledge and absence of knowledge. He who knows all doesn't need trust, he who knows nothing can't reasonably trust".

In this definition, trust and knowing are not exclusive. Simmel adds that trusting "blindly" without knowing *anything* (about a person, an

institution) is faith, and not trust. He adds that our modern life needs more trust in general than the life in traditional societies. More recently in social sciences, Giddens (with the idea of "trust as one of the fundamental institutions of modernity") and Luhman (who consider trust as a mean to handle complexity : the more something is complex, the more there is need to trust it) have also insisted on trust role in modern life.

The case for HRO⁶

Where sociology allows for exploring the general links between transparency and trust, organizational sociology aspects are worth considering for pinpointing issues specific to high risks organizations. When formulating these questions for risky organizations, the issues are all the more crucial that consequences of deficiencies may be very harmful. Particularly useful is the consideration of the so called "High Reliability Organization" group that has studied the properties of those organizations that perform remarkably well demanding and at risk activities.

La Porte (2002) considers that High Reliability Organizations raises specific issues for maintaining trust. These organizations may act as "reliability magnets" in terms of public and media attention, and in term of what they have to perform to maintain a good level of reliability. La Porte's concept of *sustainable legitimacy* explores the specificities of trust development and long term maintaining for these HRO. Some institutional properties are needed form those organizations to develop and maintain trust, with the necessity to discriminate between organizations which are trusted and those which have lost trust from Public. First, La Porte reminds Paul Slovic words on Trust and its fragility : "the fact that trust is easier to destroy than to create reflects certain fundamental mechanisms of human psychology that I shall call the "asymmetry principle". When it comes to winning trust, the playing field is not level. It is tilted towards distrust".

Then, the author discusses the two cases : trusted and distrusted organizations, in terms of their external relationship and the internal properties for what they have to do for maintaining or regaining trust. However, the reference to some kind of "visibility" or "transparence" of the organizations is mentioned in both cases. For organizations that are trusted, La Porte recommends namely the "continuous

⁶ HRO can be defined as .. (tobe completed)

involvement of stake holders advisory groups". For distrusted ones, La Porte recommends a set of processes that "work to make internal operations *more transparent* to interested, anxious, possibly hostile outsiders and stakeholders and its staff to critique". (I underline). For those organizations that suffer of a lack of trust, it is very difficult to regain trust. He recognizes that too few work exist to be able to recommend strategies for those last cases.

Although La Porte does not discuss the specific role of regulation authorities (he mentions "outsiders", "public" or "watchers" without discriminating their respective institutional roles), the focus on transparency is very relevant for our purpose, as this analysis aims at being generic enough to be applicable to numerous domains, amongst which, Air Traffic Control, one of the organisations studied by the so-called "HRO group".

This work also provide the seeds for further questions in my work. Hence, the dichotomy between "trusted" and "distrusted" organizations might be amenable to be more detailed. La Porte recognizes in the article that there is a lack of indicators that would permit to identify the processing of "loosing trust" for a particular organization. I would ask also : What could be said about Air Traffic Control which is still globally "trusted" (people still fly) but also subject to questions from the public and media (the EUROCONTROL Agency received many questions from journalists after the catastrophe on the Constanz lake in last July). Another question would be : What is the scope of distrust when it is developing ? (after a catastrophe, is public amenable to distrust *this* involved ATC provider or *this* particular airline or Air Traffic Control and Civil Aviation *in general* ? and on what will depend the reactions of Public ?

Limits of claim for transparency

It is also important to keep in mind that transparency is often overused as a "magical tool". O'Neill, in an analysis of the British development of the notion of "accountability", reminds that "The opposite of transparency is not secret but deception".

She adds that "Transparency destroys secrecy, but it may not limit the deception and deliberate misinformation that undermine relations of trust".

She also gave examples where demands for information in the public domain (schools are obliged to provide numerous records and statistics, hospitals

are requested to provide tons of papers on their medical files, ...) develop effects that are contrary to the desired ones : providing basis for trust. She calls for an "intelligent accounting" that would reintroduce the role *judgment* that has to be played by the regulations authorities (or auditing bodies, etc.). This aspect is very relevant when it comes to analyse the notion of regulation styles in the following paragraph.

Regulation authorities implementation for Air Traffic Management

Regulation styles

The development of regulation requirements by the Safety Regulation Commission is a current process started just a few years ago, and still in development. This provides a unique opportunity to witness and analyze the sociological issues that are linked to this important organizational change. As a matter of fact, these new regulation requirements cannot be developed without some important structural changes at each ATC Service Provider level : separation between regulator and provider, definition of new roles, new procedures, obligation of new design and reporting schemes, etc.

There is no doubt, however, that regulation implementation does not provide any "ideal" model for developing the relations between providers and regulators. Different regulation *styles* exist. For example, Rochlin, in a comparison of regulation processes in the nuclear domain, found deep differences between France and USA. He describes for example, an "adversarial" style in the US, (where regulators and providers are not allowed to sympathise) to a more "negociative" style in France, where regulators are ready to discuss with the audited Nuclear Power plant, the opportunity to record or not this particular incident that should according the written rules, be recorded ... There is no doubt that we can see through the small ethnographic work on ESARR 3 presented hereafter, the premises of different regulation styles in European Air Traffic Control as well.

Styles and risks

Regulation is neither the perfect solution that would solve so many existing Safety issues in ATC, as it

might be claimed in a over-optimistic view, nor only another artefact of a growing bureaucracy trend. The role and efficiency of a regulation authority whose purpose is to control high-risk activities is certainly not easy to define, and more important, the risks associated to what Rochlin would call a particular "style" are difficult to anticipate. Diane Vaughan, in her analysis of the Challenger catastrophe has shown that the internal and external regulatory authorities for NASA were not able to play this screening role: they failed in identifying the risk linked to the booster, which provoked the catastrophe. And, according to Vaughan, the reason was mainly linked to the fact that the regulatory authorities, to some extent, looked at the problems with the same "magnifying glasses" that the NASA itself was using to examine its risks, and, consequently, they were not able to identify a risk that NASA itself had not identified. However, Vaughan's outstanding analysis of the challenger catastrophe comes *after* the catastrophe. We are lacking of prospective analysis that would identify specific risks for each regulation style. On a more global perspective (which include the types of relations between regulator and provider), Bourrier proposes a first attempt to identify risks and vulnerabilities with particular structural design in the Nuclear domain.

The provider point of view

An ethnographic approach

We have stated that the regulation authorities implementation and the regulation requirement development were part of a more global claim for transparency in our societies. Transparency demands are linked to the building or recovery of trust, a central notion for high risks organizations. It is, moreover, also quite clear that regulation bodies have a crucial role to play, although no ideal mode of relations between "regulator" and "regulated" (provider) exist.

We have not yet spoken of the point of view of the "provider" facing a demand for more transparency on its activities, a demand for adapting rules, changing structures, explicating ways of doing that were not in some cases visible and conscious even to himself ... safety being so embedded in the whole system that it is difficult to explain what is made specifically for safety ... But, contrary to the prisoner in the Foucault panoptic that is "mandated" to be visible to the higher authority by this ideal mechanism, the ATM provider facing the request for more transparency on its activities is nothing less

than passive and powerless. Here is very relevant the notion of "strategic actor" (Friedberg) whose behaviour can never be considered as fully determined by the situation. A particular situation always offers constraints and resources, and a particular actor is able to use these resources.

It is worth to note that it is a chance for a social science point of view to be able to witness a process of change *while it is occurring*. Very often, important explanation factors in sociology are historical ones : you explain a present situation because, in a more or less remote past, this or that particular event took place. But as shown by Poirot Delpech in her "Biographie du CAUTRA" (that is, the biography of the French ATC system), people forget, they also tend to rationalize *a posteriori* choices and solutions with the simple criteria of "efficiency", forgetting the disputes, the power struggles, the affective aspects, all what is outside a pure "engineering" logic. Having the chance to assist to the process of implementation of regulation requirements allows to identify many factors that might be as well forgotten in a few years, when trying to explain why this regulation works properly in X country, and has raised perverse effects (in the sociological sense of non planned, non wished) in another place.

The case for ESARR3

We propose a *vignette* on the reflexions and reactions of ATM service providers during a workshop organized by EUROCONTROL on one of the ESARRs : ESARR3 (Safety management). This regulation "ensures a formalized, explicit, and pro-active approach to systematic safety management in meeting its responsibilities within the provision of ATM services". The public of this workshop was mainly composed of safety managers, (or future Safety managers when not yet appointed), and other safety related persons : incident analysts, managers related to SMS implementation for example. Our socio anthropological approach leads us to assist to the whole workshop organized by the SRU, and to assist to the presentations made by the animators, the debates during the formal presentations as well than during the coffee breaks ...

Assisting to a particular workshop is part of a wider field comparative research where we aim at studying different Eurocontrol ATM providers and regulators, in a context of change. We have led in this research numerous interviews in five Eurocontrol member states with a set of safety related persons and on-floor controllers, supervisors, instructors. In the

following, we characterize three main types of reactions from providers.

Three types of reactions from ATM providers

Defining "ideal-types"

On the basis of positions taken towards the new ESARR 3 regulation, some kinds of quite contrasted "ideal-types" have been identified. These types may be considered as signs of the process of appropriation and critique of regulation by the ATM providers. These descriptions may appear somewhat caricatured : it must be borne in mind that they are constructed types, allowing categorizations. However, the reactions are with no doubt very different within EUCONTROL member states Safety managers and safety persons in general. Lastly, these are described as positions that are the point of view of the actors, and it is not our purpose (or legitimacy) to discuss there if these actors are right or wrong. A further work could only be to analyse the potential vulnerabilities associated to these positions.

Blunt compliance

Under this somewhat severe term, we group organizations that seem first concerned by "how to be compliant ?". In this type of reaction, there is no place neither for critique (the benefit, use of a SMS is not questioned) nor for appropriation (that is defined as an active process that is quite different of simple adaptation or customisation). More important in this position is how to be "recognized" as compliant by the regulation body.

This position is identified through questions linked to formal aspects of SMS : "*if I have this type of document, is it OK ?*" "*If I do that, am I compliant ?*". Although the animators, in their presentation of SMS, as well as in their answers, provide ample room for discussing on the sense, meaning, objectives of an SMS for safety improvement, these positions seem to focus only on the *compliance* aspect.

The qualificative "blunt" is used to pinpoint the fact that here, the aim, the sense of regulation is not questioned, and neither is the link between the acceptable mean of compliance and aim (that is, improving safety ...). In extreme cases, it seems evident that "we will do (what is requested in terms of setting up an SMS) and forget *why* we do, we are not interested by the *why*".

Defensive strategy

In this strategy, the organization seems to mobilize its resources to think how "not" to change, or how change to a minimum. There are two main trends in this position.

The first one can be resumed in : "we (in our organization) already do this". Without having to be told to do it ... It is not written, not formalized but it is there, more or less, it is roughly there ... what is the benefit of writing it, of formalizing it ?

The second one is more "resistant". We do not do so much in terms of formalized safety. But, we are safe enough, we do not know how and why ... but the result is there : no accident.

For this position, setting up an SMS seems to be perceived as an artificial exercise to be added to something that already works quite properly, either in terms of safety or more simply in terms of social peace with Air Traffic Controllers ... In a word, this position can be characterized by a general reluctance for this new regulation requirement, and maybe, the whole process of regulation development in general.

Active questioning

In this third category, what is questioned is the link between regulation and its impact on safety. These organizations do not question -on the contrary- that things do not have to be improved, they mainly question the link as it is made, between safety improvement and regulation implementation. This questioning is however, not pure *opposition* (as it may be in position 2) : it is more about understanding more, getting further ...

As a consequence, this type of position amenable to raise some fundamental questions. Examples of questions are : "who decides that a risk is acceptable ?". When one of the animator, comes back with the answer that the service provider has to decide what is acceptable, it seems not to satisfy the person who asked the question. Another aspect of regulation presents ESARR 3 as a cascade of relations for which, each level has to control/check the level below. One participant asks : "Who is going to control decisions made by top managers ?".

Another debate concerns the opposition between "organizational design" and culture. Even if not formalized in such terms, of course. For example, a video presenting the Challenger catastrophe is shown. It presents the classical set of explanations used to explain the Challenger catastrophe, as an opposition between an engineering and a managerial logic within NASA, the latest having been the

winning one. (Noting that this analysis of the causes of the accident is quite different from the one proposed by Vaughan, who insist on concepts of "routinisation of deviance, structural opacity, and failure of the regulatory body to do properly its job as explained in paragraph "styles and risks"). The animators of the workshop use the film to demonstrate the interest of having an SMS that would have help to prevent the catastrophe. It is, however, difficult to say that NASA had not any SMS : on the contrary, NASA had a very structured and "heavy" (in the sense of: detailed, procedural, formalised) approach to safety management. This is mentioned by some participants., who are not easily convinced by the demonstration ... One of them says : it is rather a question of *safety culture* than a question of setting up an SMS. From there a lively debate on what is a safety culture and how it works ? how culture can evolve ? how can it change ? is it a matter of changing structures or attitudes and behaviors ? (again, put in our social scientist terms). Some participants oppose to structural solutions to cultural ones. At least they question the impact of structure of an organization on culture ... In fact, these participants also raise some questions that are actual research questions ...

To be completed.

Conclusion

This paper has proposed a few reflexions on the sociological issues linked to the implementation of regulation authorities and the development of regulation requirements in the European ATM. Regulation is linked to a growing demand for transparency, and conceived as an organizational solution to the changes in today ATM (with deregulation and privatisation of ATC providers). However, regulation implementation also raise issues : links between trust and transparency are complex, and different regulation styles are possible, with their benefits and potential risks. Reactions and positions taken by ATM providers are part of a process where strategic actors create new potential for safety improvements but also new risks.

References

Footnote 1
Footnote 2