Organisational models of notified certification bodies in the transeuropean railway system: isomorphic pressures and allomorphic responses

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Abstract

Regulatory and normative factors may affect the adoption of a specific organizational form, beyond the rationality that would suggest the selection among those derived by practice as plain technical solutions. New institutional theory points out the tendency for organizational forms to be deployed under the pressure of external and environmental conditions, regardless of their efficiency implications. It also emphasizes the role of social pressures imposed on organizations that influence organizational practices and structures. An articulated area of research in which verifying the adoption of alternative organisational structures may be provided by Notified Bodies, certification organisations operating in the European railway business system and established during the implementation phase of EU directives on trains interoperability.

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1 This research was carried out by the authors on behalf of CESIT (Centre of research on collective Transport Systems), a research-driven consortium based in Naples, Italy, whose founding members are leading players in the European transportation industry. CESIT had realized a previous survey on European railway industry in 1996 and is endowed with primary subject expertise, having successfully established relevant contacts with the organizations operating within the railway business system. The paper is the output of a joint effort of the authors, that share the theoretical hypotheses and results of the research. In particular, the paragraphs 1, 2, 3, 6, 7 should be credited to Paolo Canonico and the paragraphs 4, 5, 8, 9, 10 to Marcello Martinez.
1. Introduction: the Notified Bodies in the European railway business system

International high speed train services have operated in Europe for several years, cutting across borders and using the different high-speed lines that were being in construction in each country. As soon as different railway networks and railway administrations were connected to each other, interoperability became necessary. Directive 96/48/EC on the high-speed rail and the subsequent Directive 2001/16/EC on interoperability of the trans-European conventional rail system were issued to promote multilateral interoperability in the railway sector and to overcome the previous situation that was based on bilateral agreements, each of which was unique.

An important aspect of the EU approach to interoperability is proper certification of manufacturers' products and procedures, as it is not sufficient to impose technical specifications to manufacturers to obtain full product conformity to overall standards. There also has to be a guarantee that these specifications are applied properly and products and subsystems (so called interoperability constituents) must show labels serving as proof to third parties of compliance with these specifications. To achieve these goals, the above mentioned directives have introduced within the railway industry verification procedures involving third parties, which have not taken part in any of the design, development and manufacturing phases for the components and sub-systems subject to verification. These organisations, called notified bodies, are chosen by member States and then notified to the other member States and to the European Commission.

The idea underlying the action of these notified bodies is that any declaration of verification issued by them is valid throughout the EU. Then, instead of repeating lengthy procedures of acceptance of a new locomotive or a new trainset in each country, by applying these directives certification needs to be obtained only once and, to the benefit of international players within the industry, the procedure and reference framework are standard in all EU countries.

According to the EU directives, member states notify the Commission and the other Member States of the bodies responsible for carrying out the procedure for the assessment of conformity or suitability for use, indicating each body's area of responsibility. The body, its Director and the staff responsible for carrying out the checking operations may not become involved either directly or as authorized representatives in the design, manufacture, construction, marketing or maintenance of the interoperability constituents or subsystems or in their use. This does not exclude the possibility of an exchange of
technical information between the manufacturer or constructor and that body. The body and the staff responsible for inspection must carry out the checking operations with the greatest possible professional integrity and the greatest possible technical competence and must be free of any pressure and incentive, in particular of a financial type, which may affect their judgment or the results of their inspection, and in particular those generated by persons or groups of persons affected by the results of the checks. The body must employ staff and possess the means required to perform adequately the technical and administrative tasks linked with the conducting of checks. The staff responsible for the checks must possess proper technical and vocational training; a satisfactory knowledge of the requirements relating to the checks that they carry out and sufficient practice in those checks; and the ability to draw up the certificates, records and reports which constitute the formal record of the inspections conducted. Independence of the staff responsible for inspections is a primary concern, and for this reason any certification official may be remunerated either on the basis of the number of inspections performed or of the results of those inspections.

The concept of notified bodies was brand new in the railway sector in the early 1990’s. But, since the directive was adopted, it has spread rapidly and today there are dozens of organisations which have been credited the status of notified bodies. Their main features are proper qualification and independence since, if this was not the case, there could be no cross-recognition and each national authority responsible for railway safety could query the verification carried out in other countries.

Nevertheless, the deployment of suitable notified bodies has followed different patterns in each member state. Within the EU different options for the regulation of the activities of such organisations have been selected, ranging from one extreme to the other, with the United Kingdom having notified eleven notified bodies with the status of private companies, and Germany and France having notified only one each, which in addition in both cases is a public controlled body. Notified bodies have in turn developed different organisational forms among themselves.

2. Emergence and variety of organizational forms: a traditional area of research

The research area of the Notified Bodies in the European railway business system seems to have a peculiar relevance for the following reasons:

a) it is a typology of organisations that has been originated upon a precise normative intervention from the European Union;
b) the mission of such organisations is to develop procedures aiming at delivering the
certification of railway products within the logics of interoperability among the national
railway systems and mutual recognition of certificates;
c) the need underlying such normative intervention is to favour the process of
standardisation and homogenisation in the working procedures of certification of railway
products;
d) in theory the normative pressure and the need of standardisation should have brought
about an homogeneity in the organisational forms deployed to the regulation of such a
process (isomorphism).

Many authors have emphasized the peculiarities of organizational forms as one of the
critical issues in organizational studies. Most broadly, the concept of organizational form
refers to those characteristics of an organization that identify it as a distinct entity and, at
the same time, classify it as a member of groups of similar organizations. Interest in the question stems back to Stinchcombe (1965), who proposed that the array of
'organizational forms existing at any point in time is a product of innovative
organizational responses to environmental conditions', then organizational ecologists
scholars such as Hannan and Freeman (1977, 1989), Aldrich (1979), underscored the
importance of origins when they emphasized variation as a key theoretical construct for
explaining the evolution of organizational populations. Others (e.g. Nelson and Winter
1982, Van de Ven and Garud 1989) have described important policy implications of
organizational forms for both government agencies and corporate managers. Fligstein
(1985) showed how institutionalizing processes in organizational fields engender
widespread structural conformity across organizations that offer similar products and
services. In other words, while organizational diversity may be crucial to sustained
economic and social well being, strong forces of competition and institutionalization
work to reduce the diversity of organizational forms.

Despite the ease with which it is possible to identify meaningful groupings of
organizations, no commonly accepted classification scheme has been developed.
Therorists debate the usefulness of a general scheme. At one end of the argument,
McKelvey (1982) emphasized the need for a taxonomy of organizational forms. At the
other end of the debate, Hannan and Freeman (1989) explicitly refrained from proposing
any fixed rules or typology for identifying organizational forms. They argued that form
may be generally inferred from any organization's formal structure.
Between these two extremes lies a large number of proposals for classifying organizations that are neither fixed in a theory of a taxonomy nor as generally flexible as the approach advocated by Hannan and Freeman.

3. The consequences of normative pressures on organizational forms: the New Institutionalism’s framework

In this debate, new institutional theory have identified the tendency for institutionalised organizational forms to be deployed under the pressure of external and environmental conditions, regardless of their efficiency implications. Within this approach it is possible to point out different positions, with reference to different ways of interpreting the so called organizational field. Moving beyond technical and economic considerations (efficiency concerns), Meyer and Rowan (1977) and Zucker (1977) had suggested that many factors, among which the increasing rationalization of rules and beliefs, may provide the basis to determine organizational forms. They proposed that organizations were a complex of elements that are rationalized by the actions of regulatory agencies, professional associations, and influential institutions. These institutional processes created both structural and cognitive constraints, ruling out some available options as unfeasible, and restricting organizational actors’ will. The presence of formal structures often implies the adherence to prevailing standards. The emphasis is on the organization’s conformity to rationalized rules and requirements that is necessary for the receipt of appropriate and relevant resources and social support (and the perception of legitimacy), and not so much on technical and economic performance. As suggested by Meyer and Rowan: “independent of their productive efficiency, organizations which exist in highly elaborated institutional environments and succeed in becoming isomorphic with these environments gain the legitimacy and resources needed to survive” (Meyer and Rowan, 1977, p. 352).

DiMaggio and Powell (1983) have drawn upon this concept, when they have argued that managerial decisions are strongly influenced by three institutional mechanisms—coercive, mimetic, and normative isomorphism—that create and diffuse a common set of values, norms, and rules to produce similar practices and structures across organizations that share a common organizational field (DiMaggio and Powell, 1983). An organizational field is defined as “those organizations that constitute a recognized area of institutional life: key suppliers, resource and product consumers, regulatory agencies, and other organizations that produce similar services or products. The virtue of this unit of
analysis is that directs our attention not simply to competing firms, as does the population approach of Hannan and Freeman (1977), or to networks of organizations that actually interact, as does the interorganizational approach of Laumann, Galaskiewicz and Marsden (1978), but to the totality of relevant actors. In doing this, the field idea comprehends the importance of both connectedness and structural equivalence” (DiMaggio and Powell, 1983: 148).

Within this approach, stakeholders that influence firms’ adoption of organisational form might be various government bodies, which are authorized to exercise coercive power. Legislation authorizes agencies to promulgate and enforce regulations. Regulatory pressure refers to the extent to which regulators threaten to or actually impede a company’s operations. In addition, firms respond to customer requirements. For example, the customer-supplier relationship is perhaps the primary mechanism through which quality management standards have diffused. Institutional researchers have also argued that organizations are more likely to mimic the behavior of other organizations that are tied to them through networks (Guler, Guillen and MacPherson, 2002). Therefore, within the same industry, firms may be subjected to different levels of institutional pressures.

A second theoretical position is instead characterised by an objective, almost positivist vision of the organizational field.

Following Scott (1995) arguments, the organizational field includes the “cognitive, normative and regulatory structures and activities that provide stability and meaning to social activities” (Scott, 1995:33).

According to Scott, institutions arise to provide meaning and stability to social life, and evolve as a result of interactions between regulative, normative and cognitive elements – what he calls the "three pillars of institutions." First, the regulative pillar is most commonly understood as legal regulations whose enforcement guides organizational behavior through coercive or legal means. The regulative pillar focuses on the role of institutions that guide behaviour by means of rule-setting, monitoring, and sanctioning activities. Coercion is a key component of the regulative pillar, that pushes an organization to conform.

Second, the normative pillar generally takes the form of rules, standard practices, training experiences. These normative systems, which encompass values considered desirable according to certain standards and norms considered legitimate means of pursuing the valued ends, impose constraints as well as enable social action for change.
The normative pillar focuses on how institutions guide behavior by defining what is expected or appropriate. As organizations have a social obligation to align with prevailing norms and values, based on a logic of appropriateness (March and Olsen, 1989, p. 161), institutions can exert influence.

Third, the cognitive pillar is understood as symbols and cultural frameworks that guide construction of reality and provide the lens through which meaning and the criteria of social legitimacy are developed.

These three pillars structure organizational forms and behavior, and shape how issues are perceived and appropriate responses are defined. When rules are issued to discipline the field, organizations are responding to the coercive action of regulators. Failing to respond to these pressures engenders significant risk to an organization’s legitimacy and viability. Consistently with both such leading contributions, we recognise as a consequence the following hypothesis:

a) organizations that share the same field are affected in similar ways by normative forces (Jennings et al., 1995);

b) organizations operating in different fields are subject to different institutional pressures (Delmas, 2003), as a result, different forms may become a typical outcome;

c) the normative expectations assume a taken for granted form; the ways of organizing become unquestioned, and alternatives become unthinkable (Tolbert and Zucker, 1983);

d) the cognitive aspects of the organizational field refer to the cultural elements that govern choice often without receiving conscious thought (DiMaggio and Powell, 1983; Tolbert and Zucker, 1983; Hoffman and Ventresca, 1999).

To sum up, consistently with such approach, the normative and cognitive elements of the organizational field have an important impact on the adoption of organizational form as they frame, and thus limit, the set of envisioned pressures and alternatives. An otherwise attractive organizational alternative may be dismissed out of hand, because it is not perceived as appropriate within a particular institutional context.

Contrasting the theoretical stances mentioned above, there is the contribution by Hoffman (2001), who argues that organizational form neither is a strict reaction to the pressures dictated by the field, nor is defined autonomously without the influence of external bounds. Institutional and organizational dynamics are tightly linked (Hoffman, 2001). A few researchers have investigated this question empirically (D'Aunno, Succi and Alexander, 2000; Levy and Rothenberg, 2002).
In an effort to investigate isomorphic-allomorphic phenomena, other scholars have tried to describe possible strategies that organisations tend to deploy when subject to institutional pressures. For instance, Oliver (1991) outlined five major strategies, with corresponding tactics within each: acquiescence, compromise, avoidance, defiance, manipulation. This perspective recognizes as belonging to organizations (actually to their management) a sort of ‘conscience’ and an awareness that enacts types of behaviors that may diverge from the directions pointed out by institutional pressures, lacking perhaps to show how an organizational form may emerge also as a consequence of normative influences inherently related to its context, in agreement with other actors of the business system.

Levy and Rothenberg (2002) in particular describe several conditions that may generate allomorphism, even if homogeneous normative pressures take place:

a) normative pressures are transformed as they permeate organizational boundaries because they are filtered and interpreted by managers according to organizazions’ unique history and culture;

b) an organizational field may contain conflicting normative pressures that require prioritization by managers;

c) it is possibile to develop organizational forms divergent from the ones encouraged by institutionals pressures: D'Aunno et al. (2000) study the conditions under which organizations are more likely to abandon institutionalized structures or practices in favour of new ones.

Following this approach, the influence of normative pressures on organisational forms is scaled down and mediated by managerial perspectives and choices.

The organisation characteristics themselves can affect not only the level of normative pressure that they are subject to but also how they are perceived. Therefore, even if normative pressures were exerted at the same level on two organisations, these two would perceive and respond differently to these pressures due to organizational and strategic characteristics.

4. The adoption of policy network framework to understand the variety among organizational forms

What emerges from the literature review on regulative and normative pressures on organisational fields is then an articulated domain of theoretical positions that, at least in the cases of public intervention, does not contain a well framed heuristic domain to
capture the variegated facets of organisational reality. To wit, in order to harness the
interorganizational relationships among the actors endowed with roles and responsibilities
with respect to the introduction of Notified Bodies, the above mentioned approaches are
only partially applicable and should accept to take on board a different stance, that in the
literature is usually defined under the label of ‘policy networks’.

The use of the network concept in policy studies dates back to the early 1970’s. In
implementation studies, especially in what has become known as the ‘bottom-up
approach’ (Hjern and Porter, 1981), as well as in intergovernmental relations literature
(Friend et al., 1974; Scharpf et al., 1978), the concept has been used to map relation
patterns between organizations and to assess the influence of these patterns for policy
processes. In these two early uses of the network approach to policy usually it is
recognised the influence of theoretical notions from interorganizational theory and
insights from the interactive perspective on public policy (Klijn 1997). The interactive
policy approach in policy studies is present in the work of authors such as Allison (1971),
Cohen et al. (1972) and Lindblom (Lindblom 1965). In their work policy appears as the
result of an interaction between a multitude of actors. Conflicting interests characterize
policy processes and problem definitions are dynamic and unpredictable.

The policy network research tradition (Kickert, Klijn, Koppenjan, 1997) points out that
the standards chosen to regulate come from a public policy decision making process. The
concept 'policy network' itself is used to indicate patterns of relations between
interdependent actors, involved in processes of public policy making. Interdependency is
the key word in the network approach. Actors in the network are interdependent because
they cannot attain their goals by themselves, but they need the resources of other actors to
do so. Dealing with public problems involves interactions between governmental
agencies, quasigovernmental bodies and private organizations. Interdependency is based
on the distribution of resources over various actors, the goals they pursue and their
perceptions of their resource dependencies. Information, goals and resources are
exchanged in interactions. Because these interactions are frequently repeated, processes
of institutionalisation occur: shared perceptions, participation patterns and interaction
rules develop and are formalized. Policy networks are then configured as (more or less)
stable patterns of social relations between interdependent actors, which take shape around
policy problems and/or policy programmes. The attention focuses on the way networks
influence the making and implementation of public policy. It analyses on the collective
action of corporate actors. The concept refers to interorganizational policy making and
most studies which have been done apply the concept at a broader level of specific policy fields.
The created policy networks form a context within which actors act strategically and in which strategic action is confronted by the strategic action of others. They have to operate strategically in order to handle the given dependencies in the game so that they can achieve their own objectives. During this action, they interpret the existing rules that are, after all, ambiguous (March and Olsen 1989).
In policy networks, public interest is often represented by a direct intervention of government in steering and directing the network. As Kickert, Klijn, and Koppenjan state (1997), “the network approach by no means presumes that governments are like other actors. Governments have certain resources at their disposal and work to achieve goals, which means that they often occupy a unique position that cannot be filled by others”.
While access to these resources leaves a great deal of potential power at the government actor’s disposal, it does not necessarily follow that public actors hold a position of supremacy in the network. On the contrary, what is at issue is the definition of strategic direction in which to deploy these resources, a direction that cannot be determined by the public actor alone. That is, the reason a network approach is advocated in the first place is that a problem or situation is too complex, heated, political, costly, etc., for the public agency to handle on its own. Cooperation is needed on all fronts to address the issues, and, therefore, the purpose of a network approach is to facilitate discovery of common understanding and a strategic direction in which all parties can apply their resources.

5. The organizational field of Notified Bodies in the European railway business system: empirical evidences of allomorphism
The empirical part of this work consisted of a comparative case study, as this approach was considered useful in gaining in-depth, holistic understanding of the phenomenon studied, and in general is a preferred method when an organization finds itself in a rare or extreme situation, and special characteristics of this situation are to be studied. Case study was considered useful because the phenomenon under scrutiny could not be readily distinguished from its context, and there was little control over the events. (Ghauri and Gronhaug 2002; Yin 1984; Yin 1993). In the latter case, the context contained important explanatory variables and the boundaries between phenomenon and context were not clearly evident (Yin 1993).
The research focused on analyzing the organizational forms of some of the main notified bodies in UK, France, The Netherlands, Germany and Italy. In particular, two notified bodies were considered as in UK, one each in the remaining countries.

In the organizational setting under scrutiny, European directives play themselves the role of building institutions that regulate and exert conditioning actions within the organizational field. This vision is coherent with the vision positing that institutions are themselves derived by explicit rules. Thus, public policies, laws, and ethical standards represent institutions, and in particular with North’s (1996: 344) definition of institutions as “formal constraints (rules, laws, constitutions), informal constraints (norms of behavior, conventions, and self-imposed codes of conduct), and their enforcement characteristics”.

The aim was trying to understand the actual consequence of regulating pressures stemming by EU on Notified Bodies acting within the railway industry, with the underlying reminder of taking in stock the isomorphic pressures to Notified Bodies exerted by the EU directives 96/48 and 2001/16. Coupled with this question, there was also the need to shed light on the factors that may have an influence on the form of these organizations that regulate. As mentioned in par.1, European directives have entered into details in defining tasks and characteristics of Notified Bodies, applying a typical regulative pressure on the organisations that had to be created as a consequence of directives’ enforcement course of action.

Notified Bodies could therefore represent an instantiation of organisational field: it only makes sense on a European dimension, as its overall purpose is ensuring the interoperability and the mutual recognition of certificates on a continental scale. To wit, Notified Bodies entertain a complex pattern of relationships among all actors within the European railway industry\(^2\). They certify products realised by manufacturers, interact

\(^2\) The European railway equipment industry is one of the EU’s largest exporters of durable goods. European manufacturers, hold a significant share of the world market due to superior technology and a lead in project management. According to a market survey conducted by Vossloh AG and SCI Verkehr (Germany) in 2003, the current worldwide rail market is estimated at €56.7 billion per year and annual growth of about 4 \% per annum is expected over the next five years. According to the same survey, western Europe will remain the most significant market for rail industry products.

In spite of this generally positive market outlook, the railway equipment industry is experiencing a period of great change. This has led to large-scale restructuring and, since the second half of the 1990s, the industry has seen: a concentration of the number of leading companies; players becoming global organisations through mergers/takeovers and/or through the establishment of subsidiaries; strengthening of technical and commercial innovation; significant cost reductions (10% to 30\% on new products according to Fédération des Industries Ferroviaires, UNIFE); productivity gains of 5\% to 8\% annually (UNIFE data).
with railway companies to ensure the respect of parameters of the network infrastructure, compete among each other on services they offer.

To understand the organizational forms of the Notified Bodies as an outcome of this process of institutional building it was necessary an intermediate theoretical dimension to be located between institutional pressure exerted by the EU regulations and the organizational form that is the object of the analysis. We adopted therefore the intermediate level of analysis inherent to the system of stakeholders that have an influence on the process of development of Notified Bodies’ organizational forms in coherence with the position assumed in the previous paragraphs. Such an intermediate dimension was interpreted drawing on the concept of policy network.

In fact it resulted from the case study analysis that each Notified Body undergoes several specificities within each country and it is concretely mediated by policy networks, composed by actors claiming a stake in their setup process. Key elements of the different policy networks are:

a) the role of regulator (most often the Minister of Transport) in each country in the process of acknowledgment and implementation at national level of the EU directives;
b) the role of suppliers of products and services within the railway business system;
c) the role of organizations providing the railway transport (railway products’ buyers).

In this light, the organizational form of Notified Bodies is to be considered both the outcome of EU normative pressure and the consequence of modalities deployed to implement such rules inherent to the different policy networks identified in each country. The differentmodalities with which these roles have been played in policy networks and the different beliefs in respect of the policy issue have exerted an influence on the organizational form of Notified Bodies, which can be distinguished in six models different among each other, as explained in table.1.

In fact the poor adequateness of isomorphic approaches put forward should be seen in close connection with the inherent nature of the Notified Bodies as being themselves regulation entities. Such organizations then have been conceived as the expression of a public policy; the EU normative content is mediated by a process of interpretation led by a system of stakeholders that the policy network allows to understand.
Table n. 1 The organizational models of the Notified Bodies

<table>
<thead>
<tr>
<th></th>
<th>Ws Atkins</th>
<th>Bombardier</th>
<th>Certifer</th>
<th>Railcert</th>
<th>EBC</th>
<th>Sciro-TUV</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Organizational model</strong></td>
<td>Division of a rail transport business consultancy</td>
<td>Division of a rail manufacturing company</td>
<td>Public administration</td>
<td>Joint venture between rail industry consulting companies</td>
<td>Organizational unit of German network infrastructure owner</td>
<td>International consortium between German-Italian rail consulting company</td>
</tr>
<tr>
<td><strong>Position within the network</strong></td>
<td>Close to the railway industry</td>
<td>Close to the railway industry</td>
<td>Close to the Minister of Transport</td>
<td>Close to the owner of network infrastructure</td>
<td>Independent</td>
<td></td>
</tr>
<tr>
<td><strong>Working units</strong></td>
<td>Project teams made up of internal and external</td>
<td>Project teams made up of professionals from the mother company</td>
<td>Permanent committees plus external assessors</td>
<td>Project teams made up of internal and external</td>
<td>Internal assessors plus external technical advisors</td>
<td>Internal assessors plus external technical advisors</td>
</tr>
<tr>
<td><strong>Nature of the founding subject</strong></td>
<td>Private</td>
<td>Private</td>
<td>Public-Private</td>
<td>Public-Private</td>
<td>Public-Private</td>
<td>Public - Private</td>
</tr>
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6. The Notified Bodies in the UK

In the UK, organisations wishing to be appointed as a Notified Body should be submitting their application to the United Kingdom Accreditation Service (UKAS) and to the Strategic Rail Authority (SRA) which is acting on behalf on the DLTR (Department for Transport, Local Government and the Regions).

UKAS will undertake an assessment of the applicant against the criteria and report to the SRA on that assessment. However, it should be noted that meeting the minimum criteria for appointment will not automatically lead to appointment, as appointment remains at the discretion of the SRA on behalf of the Secretary of State.

Once UKAS has submitted its report, the SRA will then make a decision on appointment on the basis of all the evidence. Once acceptance of the conditions of appointment has been received, the appointment will be confirmed and the SRA will advise the DTLR which will notify the European Commission and the other Member States of the
appointment. The SRA will advise UKAS if, for whatever reason, a Notified Body has its notification suspended or withdrawn. In terms of competences to be deployed, they are then closely defined by the government offices through SRA and the DLTR.

Several notified bodies have been appointed in the United Kingdom. The two bodies here considered have been renamed as WS Atkins and Bombardier.

WS Atkins is one of Europe’s leading suppliers of technical and managed services for the built environment. It provides the focus for all rail activities performed within the group's extensive network of regional and overseas offices. WS Atkins has developed through organic growth and strategic acquisitions following the privatisation of British Rail. Beginning with the acquisition of civil engineering capability, and further enhanced by that of signalling, rail vehicles and electrification, it has built a consultancy office into a large international multi-disciplined organisation. A designated head of the Notified Body reports directly to a Director of the company and has full responsibility for the activities of the Notified Body. The independence of staff responsible for inspections, as requested in the Directive 96/48/EC, is guaranteed through the facts that staff of carrying out inspections are drawn from WS Atkins Notified Body which is an independent technical consultancy, and that the staff recognise that Notified Body work undertaken by WS Atkins must be fully independent from the design, manufacture, construction, marketing and maintenance of the interoperability constituents or sub-systems.

In terms of organisational units, WS Atkins is then a division of the global WS Atkins company, in which are employed around ten permanent specialists and certification teams that may well draw the professionals needed from other divisions of the global WS Atkins company.

Bombardier is a subsidiary of Bombardier Inc., a diversified corporation composed of autonomous operating groups, which is the global leader in the rail equipment manufacturing and servicing industry. Its wide range of products includes passenger rail cars and complete rail transportation systems. It also manufactures locomotives, freight cars, propulsion systems and provides train control systems. It has a major presence in Europe, employing around 27,000 people in 17 countries. In the UK it employs 5,200 people. Within the Notified Body there are employed around nine permanent specialists.

The technical competence of the management is such that the management is able to carry full responsibility for the Notified Body activities through a reporting line totally independent of the product business units. The reporting line is totally separate from that of the product design and production units. The independence of staff responsible for
carrying out assessments, is guaranteed through the fact that the core team of the Notified Body is part of Bombardier and detached from Bombardier Inc. There is a reporting line to the CEO that is totally independent of the product production units; further guarantees of independence are represented by the fact that no staff employed by Bombardier on Notified Body work undertaken in assessing a company product will be from the product unit that created the product, but will be from another part of the company or an outside organisation; and by the fact that the staff recognise that any Notified Body work undertaken by Bombardier employees must be fully independent from the design, manufacture, construction, marketing and maintenance of the interoperability constituents or subsystems being assessed.

Competence within this field is available in WS Atkins as the design and manufacture of rolling stock forms its core business. It will normally call on independent expertise from within the company to carry out the work of the Notified Body supplemented when necessary by sub-consultants. How the work is managed will depend on the work load and availability of resources at the time.

In the UK case the relevant policy network sees the intertwined intervention of both public and private actors. Public organisations (Strategic Rail Authority, United Kingdom Accreditation Service, Department for Transport, Local Government and the Regions) have a role in accrediting the Notified Body and qualify its organisation as able to provide its own services all over Europe. But private businesses are left alone with reference to the decision of offering the certification service and structuring the organisational unit devoted to this task. In turn, such organisational unit is seen as coherent with the mother organisation from which it emanates, and therefore the organisational form assumed varies as a consequence of the business units and working procedures already in place in the mother organisation.

7. The Notified Body in France

In France, the notified body CERTIFER was created drawing upon the directive 96/48/EC as a non profit organisation. Very precise regulations have been issued centrally by the Minister of Transport to discipline its working procedures and organisational structure.

The directors are drawn from three distinct sources: operators and managers of the infrastructure, industrialists, experts from independent organisations in the surface transport. The staff responsible for the checks must possess: proper technical and
vocational training; a satisfactory knowledge of the requirements relating to the checks that they carry out and sufficient practice in those checks; the ability to draw up the certificates, records and reports which constitute the formal record of the inspections conducted. The independence of the staff responsible for inspections is then by no means guaranteed by the fact of being a ‘third party’ actor in the railway business system. No official may be remunerated either on the basis of the number of inspections performed or of the results of those inspections. The administration ensures that the body must take out civil liability insurance unless that liability is covered by the State under national law or unless the inspections are carried out directly by that Member State. The staff of that body are bound by professional secrecy with regard to everything they learn in the performance of their duties (with the exception of the competent administrative authorities in the State where they perform those activities) in pursuance of this Directive or any provision of national law implementing the Directive.

In France the relevant policy network is heavily conditioned by the government decision to keep the certification activities in public hands, for national interests. Therefore the role of private sector organisations is the one of complying to the scenario envisioned at central level by government, collaborating with the Notified Body and providing upon request the necessary expertise. The organisational form of the only active Notified Body then is designed with exclusive reference to the quality and safety of certification procedures, regardless of any commercial considerations.

8. The Notified Body in the Netherlands

In the Netherlands the Notified Body we analysed (Railcert) is the output of a joint ventures among two mother organisations, combining more than 165 years of railway engineering know-how with the experience of one of Europe's largest testing and assessment institutions. Parent organisations are a leading international testing and certification player, and a consulting company with engineers for public transport and rail infrastructure, which in turn has its grassroots in the Netherlands Railways, a leading specialists in the complete design and execution of large and complex railways. As an independent organisation Railcert can guarantee that the assessments carried out are free of any influence by third parties. The lead assessors are completely independent in their judgement. They have access to all experts and expertise of the originating companies.

The activities within Railcert are organized around processes. The permanent structure is made up of 4 people: two head of operations and two administrative assistants. The head
of operations have the task of constituting working teams that carry out the certification activities by drawing on employees of the mother companies.

In the Netherlands the Minister of Transport has a propulsive role in setting up Notified Bodies and involving private partners. The actual policy network envisions a future proactive role of private organisations endowed with certification expertise, in order to finally get to a more competitive and open scenario with several accredited Notified Bodies competing among each other.

8. The Notified Body in Germany

EBC is the only body in Germany notified in relation to the Directive 96/48/EC. Other possible candidates like private certification organisations have not applied to become Notified Bodies in Germany; instead they are now partners of the EBC. In agreement with the German Federal Ministry of Transport, Building and Housing EBC is officially empowered by the German Eisenbahn-Bundesamt to audit the structural and operational of railway products and to declare its conformity or suitability. EBC is functionally separate from the Eisenbahn-Bundesamt. EBC is organizationally implemented within the mother organisation: it is a professionally independent organisational unit. Technical responsibility lies with the head of EBC alone. This means that he is not subject to influence concerning EBC’s professional decisions. The work of EBC is supported by an advisory board. The advisory board includes members of Deutsche Bahn AG, Eisenbahn-Bundesamt, plus other private companies active in the certification business. The advisory board express recommendations to EBC.

The independence of staff responsible for inspections is guaranteed through the fact that staff of the EBC carrying out inspections are government officials, technical independent and, therefore, are not subject to any external influence; the fact that the EBC is an organisationally and technically independent body within the Eisenbahn-Bundesamt (EBA). Independence in this respect is guaranteed through the fact that the EBC is only subject to the EBA for organisational supervision. EBC is financially separate from the EBA and this will be supervised and audited by the Bundesrechnungshof. The Bundesrechnungshof is the supervisory authority and is an independent financial control body subject only to German law.

The German Federal Ministry of Transport, Building and Housing (BMVBW) must not give any advice to EBC as an independent Notified Body in respect to any interoperability certification related to Directive 96/48/EC. Independence is also
strengthen by the facts that EBC is not a railway operator nor a manufacturer of interoperability components or sub-systems, that the EBC will not utilise staff on a particular scheme who have been involved in the design, construction or implementation of that project.

Competence of EBC is guaranteed through the fact that it can rely on the knowledge and competence available within the Eisenbahn-Bundesamt and on the knowledge and competence of its partners, The technical competence of the EBC shows itself from long-standing experience in the field of technical permission and of the operation of railways of the EBA.

The relevant policy network in Germany is characterised by the peculiar collaborative relationship among public controlled organisation (EBA) and private service players, that have partnered with EBA to provide upon request expertise necessary for certification activities. Such an approach finds consensus among the railway industry as well, that may benefit from clearer definition of a counterpart for its certification needs, having as a drawback a potential monopoly (at present) of these services.

9. The Notified Body in Italy

In Italy the notified body under scrutiny in this research will be here renamed Sciro TUV. It has originated in summer 2000 from a joint venture between a leading Italian consulting firm and a German certification body, as a response to the ever growing demand, within the Italian and the international railway market, of assessment and certification services offered by qualified and competent bodies. It is the first Italian entity, born from a private initiative, entering the railway certification market endowed with a deep knowledge of the guided transport world and of its technical and operational peculiarities.

Technical competence and evaluation independence have then been achieved through the setup of an organisation employing 35 people, mainly railway engineers with years of experience in the field. The organisational form may be depicted as a typical functional structure, with one staff unit (‘quality’) and three line units (‘marketing’, ‘production’, ‘general administration’).

In Italy the policy network is still in its infancy, as private organisations are trying to enter the market of certification services but public actors could favour the diffusion of such competences also within historically public subjects (RFI, Trenitalia, Universities).
solution towards a more definite investment in the field, when the public strategies will appear clearer.

10. Conclusions
Stemming from the same directives 96/48/EC and 2001/16/EC, the case study analysis demonstrated that the requisites and features of notified bodies have been interpreted differently in each state.
In fact, relying on different political orientations, on the development of the railway industry and of the entrepreneurial initiatives carried out by the actors within national railway systems, it is possible to articulate an analysis drawing on different reference models corresponding to policy networks in which actors have pursued different behaviours (table n. 2).
In Britain, there are several notified bodies that do intend to offer their services within the market, in a competitive setting. WS Atkins is the evident outcome of this policy and is characterized by being a business unit of a leading consulting company which is specialized in the rail transport industry. Bombardier Notified Body instead is a division of the conglomerate Bombardier Transportation and was set up in order to improve the internal competence regarding the new rail interoperability standards.
In France the certification activities are seen as a service to be offered centrally by a purpose built organisation endowed with the necessary technical competence and business experience. Certifer appears to be a typical public administration whom the monopoly of this kind of certification services was attributed.
In the Netherlands there are meant to be several Notified bodies, but until 2004 the central government has relentlessly pushed towards the setup of at least one of them, given the lack of available competences on the national scene. Railcert appears to be a typical entrepreneurial endeavor developed in order to catch up with this opportunity.
In Germany the only existing Notified Body is the expression of an explicit willingness to cooperate between EBA (the owner of the network infrastructure) and private certification organizations in order to improve the functioning and the development of the national railway system.
The Italian situation may be depicted as a setting in which there could be potentially a plurality of notified bodies, some from the private sector, others born spinning off from other actors in the railway business (RFI, Trenitalia, Universities). Sciro TUV appears as
a commercial initiative relying on the exploitation of internal competences in terms of
railway products certification acquired by its founding organizations.

In conclusion, it might be said that the reasons why in the various EU member states
different visions of notified bodies’ role were adopted depend both on the normative
pressures that are exerted on such organisations by the EU and the policy network
specificities that finally had influenced the organisational form.
Table n. 2 – Comparing policy network specificities underlying Notified Bodies’ organisational models

<table>
<thead>
<tr>
<th>UK: competitive setting among Notified Bodies</th>
<th>France: centralisation of certification activities</th>
<th>The Netherlands: a few Notified Bodies pushed by government</th>
<th>Germany: public-private cooperation</th>
<th>Italy: potential openness to several Notified Bodies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strengths</td>
<td>Weaknesses</td>
<td>Strengths</td>
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<td>Strengths</td>
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<tr>
<td><strong>Regulator’s perspective</strong></td>
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<tr>
<td>Broadening the availability of technical competences for certification</td>
<td>Potential conflict of interests between Notified Bodies’ activities and railway industry</td>
<td>Highest impartiality</td>
<td>Possible lack of technical competences</td>
<td>Allows the support of the Minister of Transport in supporting the creation of Notified Bodies</td>
</tr>
<tr>
<td><strong>Railway industry’s perspective</strong></td>
<td></td>
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<tr>
<td>Certification as a business</td>
<td>Lack of technical competences within some organisations</td>
<td>Only one counterpart for certification activities</td>
<td>Avoiding the development of certification as a business</td>
<td>Possibility of considering certification as a business</td>
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<td><strong>Railways’ perspective</strong></td>
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<tr>
<td>Lowering certification costs</td>
<td>Lower guarantee of reliability of Notified Bodies</td>
<td>Highest guarantee in carrying out certification activities</td>
<td>High certification costs</td>
<td>Lowering certification costs</td>
</tr>
</tbody>
</table>
11. References


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