The construction process of a cluster: Changing the rules to adapt to new problems

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Résumé :

This paper studies the construction of a French competitiveness cluster ("pôle de compétitivité"). We question the appropriation by the actors of the public policy regarding French competitiveness clusters, by proposing a new interpretation built on the Theory of Social Regulation (Reynaud, 1989). This framework considers the public policy as a control regulation, and the effort from the actors to seize this cluster policy as an autonomous regulation. This work is based on a qualitative research conducted from January 2010 to March 2012 and takes the form of a case study analysing the history of the French cluster iDforCAR. This approach helps to clarify the emergence and the construction process of a French competitiveness cluster by showing the appropriation of the public policy by the recipients of this national cluster policy. The uniqueness of these clusters is then illustrated, each cluster being built from singular problems that give rise to a singular project. This also allows to enrich the Theory of Social Regulation by applying it in a meta-organisation such as a cluster.

Mots-clés : Emergence of a cluster, clusters, Theory of Social Regulation, collective action, French competitiveness clusters ("pôles de compétitivité")

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Introduction

Created in 2005 at the initiative of the national government, French "competitiveness clusters" ("pôles de compétitivité") aim to make private businesses, research laboratories and training institutions collaborate in a specified area. These actors are invited to work together on collective innovation projects in order to support local development, and thus enhance the competitiveness of companies and create jobs.

French clusters fit into a worldwide phenomenon of "clusterization" (Pecqueur, 2005): clusters have been increasingly widely used around the world as part of regional development strategies (Lundequist and Power, 2002: 685). The World Bank identified 266 clusters around the world in 2000 (in Lundequist and Power, 2002); five years later, 1,400 cluster initiatives were listed in the 2005 Global Cluster Initiative Survey (GCIS).

Clusters have therefore been widely studied over time. However, Wolfe and Gertler highlight a lack of consensus over their emergence (2004: 1073), as do Teigland and Lindqvist (2007: 767) and Fornahl *et al.* (2010), identifying a gap in literature on emerging clusters. In this paper, we want to contribute to filling this gap by analysing the construction process of a cluster. We have observed a recent cluster to trace its construction process and its evolution, in order to understand how clusters emerge and how they evolve. This work is based on a qualitative research conducted from January 2010 to March 2012 and takes the form of a case study analysing the history of the French competitiveness cluster iDforCAR[1].

We show how the project starts with only a few people involved, who seize the call for projects initiated by the government to solve their competitiveness problem. These parties must then establish rules in order to cooperate, thus gaining the autonomy to assimilate and take ownership of the cluster policy established by the government. New parties willing to join the cluster around this initial coalition must voluntarily accept the rules that have been established. When new problems arise, the rules must evolve, making the cluster evolve. This

[1] http://www.id4car.org/en/join-us-cluster-pole-id-for-car.aspx
[2] CIFRE : convention industrielle de formation par la recherche

perspective enables understanding of the uniqueness of clusters although they all emerge within the frame of a national cluster policy.

We begin by presenting the emergence of clusters (1). We then suggest the use of the Theory of Social Regulation to analyse this emergence (2), before introducing the French competitiveness clusters policy (3). The case of one of these French clusters, cluster iDforCAR, is then presented, along with the methodology used to collect data (4), prior to the empirical results and their implications (5). Final conclusions are drawn with proposals for further research.

1. The emergence of clusters

Clusters are not a recent phenomenon. The first clusters identified were the industrial districts originally highlighted by Marshall in 1890. They were defined as concentrations of a large number of small independent businesses specialized in the same production, combining their resources to allow for large scale production. In these districts, the coordination is done by the market and by reciprocity, unlike the technical division of labour within a large company (Benko et al., 1996). Marshall showed how those districts, thanks to the concentration of businesses of the same type in the same locality, allow lower production costs and agglomeration economies (Marshall, 1919). Spatial proximity promotes the division of production processes; external economies, mutual trust, traditional know-how and the "industrial atmosphere" also lead to incremental innovations (Marshall, 1890).

In the 1980s and 1990s, scholars brought the cluster concept back up-to-date and confirmed its advantages (Piore and Sabel, 1984; Saxenian 1994; Martin and Sunley 2003). The work of Porter in particular (Porter, 1990; 1998; 2000) had a considerable impact. He demonstrated that clusters increase productivity and innovation, and that location remains central to competition even in a globalized market. He defined clusters as "geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions (e.g., universities, standards agencies, trade associations) in a particular field that compete but also cooperate" (Porter, 2000, p. 16). Although he considered that clusters were originally most often a private initiative and built in a bottom-up manner (Porter, 1998; 2000), he pointed out the new role to be played by governments in helping existing and emerging clusters, as a new tool for economic policy. From then on, many

governments around the world initiated clusters policies, in a phenomenon of "clusterization" (Pecqueur, 2005).

Clusters are now considered as the basis of local, or even national policies in many countries (Torre, 2006:16), to cope with globalization and competition between countries and regions by obtaining recognition of their specificity: "government agencies, local authorities and private sector actors alike have been rushing to uncover, discover, invent and reinvent 'clusters' as an attempt to improve their sectors' and regions' competitive position" (Lundequist and Power, 2002: 685). The question is no longer about knowing if cluster policies should be set up, but about knowing how to set them up (Sölvell et al., 2003), as clusters have become "*increasingly widely used and recognized as an essential part of regional development strategies and thinking*" (Lundequist and Power, 2002: 685).

Clusters have therefore been widely studied in the past decades. However Wolfe and Gertler highlighted a "striking lack of consensus over how clusters are started and to what extent their emergence can be set in motion by conscious design or policy interventions" (2004: 1073). For Porter (1998; 2000), clusters are most often of private initiative and built in a bottom-up approach. He even considers that clusters can be spontaneous phenomenon, which can go unrecognized. Members of a cluster may then be unaware of being part of it (Porter, 1998: 79). Fromhold-Eisebith and Eisebith (2005) differentiate this type of emerging and implicit initiatives, which are organized and financed bottom-up by groups of firms, from explicit cluster policies implemented top-down by regional authorities. In both cases, they consider clusters as a voluntary construction, whether from the authorities or from a group of firms, that gives birth to a collective.

Few researches focus in fact on emerging clusters: Teigland and Lindqvist (2007: 767) noted: "*while research on clusters is abundant, research specifically focusing on these emerging organizations 'i.e., cluster initiatives' is scant to date*". Later on, Fornahl et al. (2010) still identified a gap in literature on emerging clusters. The emergence of clusters has since been analysed, to detail the factors and mechanisms of cluster emergence (Brenner and Mühlig, 2012), to understand how the emergence conditions of technological clusters affect their viability (Crespo, 2011), or to illustrate the emergence and growth of particular clusters (Zamborsky, 2012). This paper aims to continue filling this gap on emerging clusters by analysing the construction process of a cluster. We observe the way a cluster emerges and evolves, analysing the role of cluster managers, also considered as understudied (Ingstrup,

2010: "*asking what the role of cluster facilitators is in the cluster and management literature, the answer is simple: until now, the role has been almost non-existent*" (2010: 30). Provan and Sydow (2008) had already observed that there were few empirical studies on the cluster management, which was later confirmed by Lefebvre (2013), although the European Commission (2008: 10) considers than most cluster policies lead to the creation of cluster organisations with cluster managers. Sölvell et al (2003) and Menu (2012) pointed out a request for strong leadership by cluster members in terms of a vision or strategy, calling for strong cluster management. It then seems relevant to study the role of cluster managers. This paper will highlight the way a cluster is actually built, in other words the way a group of organizations turns into a unit to create a cluster, analysing the role of cluster managers.

Romanelli and Khessina had partially answered this question by identifying the issue of cluster identity in 2005. Beebe et al. recently (2013) demonstrated how identity is a key to cluster development and success. They have shown that cluster identity formation is the result of internal developments and external validation. This study adopts a complementary perspective, analysing at a micro level the process by which the parties involved can actually build a collective identity, and the role played by cluster managers in this process. We suggest a theoretical framework based on the rules necessary for action, built on the Theory of Social Regulation (Reynaud, 1989; 2003), which precisely analyses the way rules constitute the identity of a collective unit.

2. Analysing the emergence of clusters with the Theory of social regulation

According to Theory of Social Regulation (Reynaud, 1989; 2003), regulation is the ability to take initiatives and to develop rules. In this perspective, actors willing to undertake social action must decide on rules by which they will later have to live: rules will allow their action, while also constraining it. The regulation process that will be necessary to establish common rules will constitute the identity of the collective actor. When many theories believe that coordination between actors in a cluster relies solely on the market and reciprocity, the Theory of Social Regulation allows considering that coordination relies on the actors themselves and on the rules they implement, as they will be able of performing collective action only if they establish rules to allow that action.

The Theory of Social Regulation recognizes two sources of regulation:

- A control regulation, which corresponds to the rules imposed to define the

aims and methods of action of the collective;

- An autonomous regulation, which (1) shows that the actors subject to control always have a degree of autonomy allowing some opposition to the control regulation, and (2) is also a way of adjusting and adapting to the incompleteness of rules (Reynaud, 1989).

In this perspective, a rule is not by itself a control rule or an autonomous rule: control and autonomy refer to the use of the rule, not to its nature (Reynaud, 2003). For instance, a rule initially defined independently by a group of actors in order to undertake social action, as an autonomous rule, will later constrain actors willing to join the group, therefore turning into a control rule.

Autonomous regulation and control regulation meet and influence each other: the rules implemented in the collective action emerge indeed in the encounter between the different sources of regulation (*id*.).

In this social regulation approach, actors first get together when facing a problem (De Terssac, 2003), which leads them to start a regulation process to define rules in order to find a solution. Three steps can be identified in this regulation process:

- First, an actor facing a problem mobilises other actors to find a solution. They elaborate autonomous rules to allow collective action in order to reach this solution. This is the emergence step, involving an initial coalition of actors.
- This initial coalition then tries to enlist other actors into the regulation that has been established. Actors that identify the same problem and accept the solution proposed can join the group: the autonomous regulation initially established then becomes a control regulation. This second step is a step of generalization of the coalition.
- When new problems are identified, the solution initially proposed is challenged. New coalitions emerge, and enter the same regulation process. This third step is a transformation step, as the coalition evolves into various coalitions, which each enter a new emergence step (Bossard-Préchoux, 2013).

The Theory of Social Regulation was initially developed to analyse work situation at a micro level (Reynaud, 1989; 2003). It was then applied to organisations (for instance Desreumaux and Bréchet, 2009) and to the market (Le Velly and Bréchet, 2011). We suggest the use of this theoretical framework to analyse meta-organizations (Ahrne and Brunsonn, 2008) such as

clusters, as the encounter between the autonomy of actors and the control regulation appears as an interesting way to better understand the construction process of clusters from the identification of a problem, through the rules established by the actors in order to work together. We will now apply this theoretical framework to French competitiveness clusters.

3. The emergence of French competitiveness clusters

France did not escape the phenomenon of "clusterization" (Pecqueur, 2005): in 2005 the French government, drawing on former cluster policies and foreign experiences, initiated a call for projects for competitiveness clusters. The objective was to make private companies, research laboratories, and universities or other training organizations, collaborate on a specified field and area. These actors were invited to work together on collective innovation projects in order to support local development, and thus enhance the competitiveness of companies and create jobs. The clusters were selected through a top-down process via a call for projects initiated by the French national authorities. 71 projects were approved all over the French territory, covering many kinds of activities and sectors.

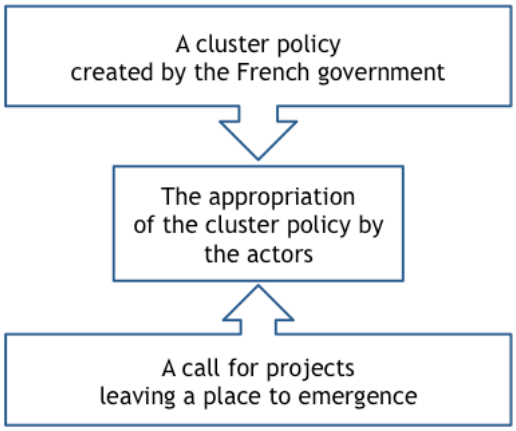
As Wolfe and Gertler (2004) questioned the way clusters are started, the literature on French competitiveness clusters reveals a great indecision over the direction of this policy. Some scholars consider that these competitiveness clusters are imposed by the state on the actors involved (private companies, research laboratories and universities) and are therefore top-down clusters (e.g. Mendez and Bardet, 2009). Others consider that the call for projects generated bottom-up clusters built by locally concerned actors (e.g. Menu, 2012).

On the one hand, French competitiveness clusters appear indeed as part of an explicit top-down cluster policy: the state promoted the cluster policy, selected the clusters, defined their operating procedures and provided funding. As part of these procedures, each cluster must hire an operational team (with public funding), in charge of selecting innovation projects. These projects are at the heart of the French cluster policy: they are selected locally by each cluster's operational team, then go through a national call for projects launched twice a year by the government, which in turn selects some projects for funding.

On the other hand, this cluster policy can also be considered as a bottom-up approach: the use of a call for projects to select clusters intended to generate new initiatives. Some clusters were indeed created with no former basis, to take advantage of the resources made available. Other existing clusters seized this new opportunity to broaden their objectives. There is therefore an

emerging dimension in the competitiveness clusters. Moreover, local actors had to take ownership of the cluster policy, in order to achieve the objectives of competitiveness, local development and employment set for the clusters. They had to decide on the subject of the cluster, as no guideline had been given. Clusters therefore took up on many subjects, such as finance or biotechnology. However, these initiatives took place within the framework of a top-down cluster policy, implying the appropriation of this policy.

Figure 1: The appropriation of the cluster policy



The Theory of Social Regulation can then enlighten competitiveness clusters' emergence: the cluster policy can indeed be analysed as a control regulation, and the effort from the actors to seize it as an autonomous regulation. Observing the regulation process can then explain how local actors take ownership of the cluster policy.

4. The case of a French competitiveness cluster: iDforCAR

4.1. Methology of the case study

Clusters can take diverse forms with vague organizations and unclear boundaries (Martin and Sunley, 2003). They never appears as a stabilised organisation, as members are always joining or leaving the cluster. Observing a cluster is then an uneasy task: the cluster has no place to live or existence of its own, apart from the living areas of the operational team. Following the theoretical framework based on the Theory of Social Regulation, this study involves an analysis of the regulation work organised by the operational team. It is based on a qualitative research conducted from January 2010 to September 2012 and takes the form of a case study

approach of the French competitiveness cluster iDforCAR. The objective of this research is to contribute to the knowledge of clusters rather than to test a theory (Eisenhardt and Graebner, 2007).

I was hired as a member of the operational team of this cluster, as part of a French industrial research training agreement[2]. I met the general manager of the cluster iDforCAR through the French clusters' observatory[3]. She had no particular expectations, but was interested in having a researcher in social sciences work with the cluster, and appreciated my research topics regarding the cluster's construction process. I therefore entered the cluster with a large freedom and decided on a case study.

"The research case [...] is an in-depth analysis describing in detail an organizational phenomenon, sometimes spanning several years [...]" (Giroux, 2003: 47). The case study seemed appropriate for this analysis of clusters, as they remain a recent phenomenon (*id.*, p. 45). The objective of this research was indeed a quasi-ethnographic exploration, in order to develop in depth understanding of the "cluster" object.

I wanted to propose new theoretical conceptualizations and proposals, which could then be tested, in a process of certain inference (Charreire-Petit and Durieux, 2007: 64).

I did consider a comparative case study, before preferring to gain in-depth knowledge of the cluster studied. IDforCAR is only one among 71 competitiveness clusters, and I was rapidly aware of its uniqueness. Therefore, the objective was not to make it a "typical" or "representative" case (Yin, 1994), but to concentrate on a singular empirical situation through a case study (David, 2003). It is this uniqueness that I wanted to study, to "reveal a phenomenon that is not uncommon but was previously inaccessible to the scientific community" (Royer and Zarlowski, 2007: 219). My recruitment within the animation team of iDforCAR, as the first research contract attached to a cluster, precisely gave me a new access to clusters.

My recruitment as a member of the operational team of iDforCAR, their expectations towards my research and data collection, made primarily by participant observation, could have pointed me to a research action, as proposed by K. Lewin in 1946, or to intervention-research (David, 2000). But every participant observation is not necessarily intervention research or action research.

[2] CIFRE : convention industrielle de formation par la recherche
[3] Observatoire des pôles de compétitivité, www.observatoirepc.org

In action research, the researcher starts from the present situation and from the representations that actors have of this situation to help them build and lead a process of transformation, using relational devices (working groups, interviews). In intervention research, the researcher is involved in the research field to help, possibly by offering or designing himself a number of tools (David, 2000).

Expectations of the operational team of the cluster and of cluster's members towards my field research have certainly led me to propose new tools for the cluster's actions, particularly in the context of the preparation of the assessment. My research has contributed to allow stakeholders to act more effectively (Allard-Poési and Perret, 2003, p. 94). I allowed the members of the operational team to realize the lack of formalization of their actions, I offered them tools to address them, such as an action plan. I contributed to the debate on the adequacy of the expertise of the operational team and the expectations of stakeholders. I have made recommendations with regard to the operational team of iDforCAR and against managers of clusters in general. This research, like all research in management sciences, sought to produce results that would directly or indirectly allow a transformation of the system studied, especially since in social sciences, objects are also subjects, meaning that actors are able to seize the results of the research for their own projects (David, 2000).

However, unlike postures of action research or intervention research, I did not intend to transform in order to measure effects. Action research and intervention research relate to the idea of a change introduced voluntarily. They involve "dual research and intervention" (Detchessahar *et al*., 2012). They respond to a specific request from the field, which faces a particular problem and expects the researcher to implement a solution. The research problem is thus constructed from the problem and the proposed solution.

The problem of this research was not built from "questions of managers" or difficulties (Allard-Poési and Maréchal, 2007: 48), but in the encounter with my concerns with those of the research field. These managers did not actually express any specific request about this research, but my questions came to meet theirs.

I was considered from the very beginning as a researcher, this role being recognized and accepted by all. The operational tasks were thus limited to topics directly related to the subject of the research. This provided me with a privileged position of participant observation, which promoted access to the field: I spent 130 days within the cluster, observing and collecting data. I could therefore observe many and varied situations: "ordinary" workdays, meetings in

small groups, meetings of the operational team, plenary sessions with most members of the cluster, thematic meetings, workshops, formal and informal exchanges between members of the operational team, between members of the cluster, *etc.* These observations led to the transcription of detailed notes and "memos", in order to "*accumulate observations taken from life and ideas still in their 'initial freshness'*" (Kaufmann, 2011: 77). Some situations (strategic workshops and meetings) resulted in recordings, which were analysed. To complete these observations, 27 semi-structured interviews were performed with members of the operational team and with members of the cluster.

- 9 interviews with iDforCAR's general manager;
- 9 interviews with other members of the operational team;
- 8 interviews with members of the cluster (two members of the cluster were together for one of these interviews);
- 1 with the consultant in charge of iDforCAR audit in 2012.

These interviews lasted between one and two hours. They were mainly conducted on a non-directive mode, a conversation mode, in line with the inductive character of this research, in order to collect a wide range of data. I indicated at the beginning of the interviews what I was working on, and then let people talk, only asking a few additional questions at the end of the interview. From these interviews and meetings, over 70 hours of recordings were collected and analysed. I listened to the recordings and faithfully transposed all the interesting data, immediately starting the theoretical development process (Kaufmann, 2011: 58).

Data was also collected by exchanging e-mails with cluster members. According to Kaufmann (2011: 57), exchanges by e-mail are similar to an interview situation, and provide a large amount of data in a short period of time. They allow "immediate and permanent conceptualization". While the usual survey separates the collection phase of the material and its treatment, here both are simultaneous and feed each other. The face-to-face "suggestive stuttering and impulsive spontaneity" might be lost, as well as the "poetry of oral formulations", but the concentration of information is improved (*id.*). I thus collected very large amounts of data. Literature reviews (clusters' websites, iDforCAR internal documents, documents Observatory clusters, etc.) and the participation to various seminars on clusters completed these field data.

The types of data collected can be summarized as follows:

Chart 1: Data collected

130 days of participant observation, with the writing of memos
Various formal and informal restitutions within the operational team and with members of the cluster.
27 interviews (1 to 2 hours each)
E-mail exchanges
Literature review

From this data, I could very accurately identify the actions of the iDforCAR cluster operational team, and enlighten the regulation work. This mainly led me to formalize an action plan, representing an inventory of actions made by the operational team. Identifying these actions was an interesting way to access the regulation work, as I could understand the process behind each action taken by the operational team.

4.2. The iDforCAR cluster

The iDforCAR cluster was created in January 2006 as a non-profit association, initially called "up-market cars cluster" ("Pôle automobile haut de gamme"). The cluster's aim was to develop innovation and competitiveness of the up-market automotive industry in Western France[4]. The choice of up-market relied on the individual strategy of a local company, PSA Peugeot-Citroen, one of the two major French automotive manufacturers, whose activity in this territory was geared towards large and high-end vehicles.

The "up-market cars" cluster emerged from a former cluster called "Performance 2010", created in 1994, already involving PSA Peugeot-Citroen. This cluster carried the project to be acknowledged as a "competitiveness cluster", as a response to the call for projects from the French government. The up-market cars cluster project was acknowledged as a "competitiveness cluster" in January 2006. The cluster then came to life and developed a project, to restore the competitiveness of the automotive industry in Western France. The parties involved decided on strategic activities that were to be covered.

Many parties joined the up-market cars cluster in the early years: the memberships went from

[4] The territory of the cluster covers three administrative regions: Brittany, Pays de la Loire and Poitou-Charentes.

61 in 2006 to 106 in 2008. Renault, the other major French automotive manufacturer, joined in 2008. Each new member brought new questions to the operational team, who had to adapt to these new questions. The relevance of the premium positioning was soon questioned. These doubts were supported by the results of the national evaluation of competitiveness clusters, organized in 2008 by the government, which concluded that the cluster was only "partially successful".

The buds of a new strategy had arisen in the early years of the up-market cars cluster, based on the activities and skills of local actors. The cluster's territory hosted several manufacturers of recreational vehicles and professional and light commercial vehicles, which are often leaders in their markets (coach builders and car body designers, motorhomes, fire trucks, light electric vehicles, etc.). On the territory of Western France, over 90,000 jobs (900 companies and 235 laboratories) were involved in these issues. Studies around the automotive industry of Western France pointed out the many businesses in the area and the many jobs, in businesses that were not single-chain. Beyond up-market cars, it appeared that what actually drew these parties together was a set of skills around small series of vehicles. The "specific vehicle" concept then emerged as a common denominator between the different actors: the cluster then rethought its strategy on this basis, changing its name from "up-market cars" to "iDforCAR" and henceforth focusing on specific vehicles.

From the deployment of the new strategy in 2009, the membership increased by 18% in 2009 (19 new members) and 24% in 2010 (30 new members), to reach over 200 members in 2012 (63% of them being private companies). The number of approved collective projects increased as well: when only four projects had been certified and financed through public funding in 2008, 10 were funded in 2009, 23 in 2010 and 17 in 2011.

5. Reading the emergence of a cluster through the Theory of social regulation

The iDforCAR cluster fits into an already well-established story and collective project. In Brittany, the presence of PSA Peugeot Citroen had long initiated a collective dynamic: PSA Peugeot Citroen needed qualified suppliers and relevant parties, and local companies were seeking market opportunities. All of these parties were willing to interact, which was both a choice and a constraint. However, these interactions did not, at first, exceed the classical framework of customer-supplier relationships. The creation of the cluster Performance 2010

formed a coalition of actors willing to also interact around of quality development, performance, technical innovation, and people management, therefore establishing a collective project (Bréchet, 1994; Desreumaux and Bréchet, 2009).

The opportunity offered by the French government through the call for projects for competitiveness clusters changed the situation. Actors belonging to the Performance 2010 cluster, but also other actors concerned in the field, could access new resources: the cluster policy organised funding, the recruitment of an operational team for each cluster, a national "competitiveness cluster" quality label, *etc*. These new resources could help broaden the objectives of the cluster, and aim for a European or international recognition. This was the change that triggered the regulatory process.

Some actors from Performance 2010 chose to consider this offer from the government, and initiated work to understand the control regulation proposed by the government and contemplate their involvement. For Reynaud, understanding is taking over, it is "reinventing". It is "a cognitive approach", "the first step in coming into play" (Reynaud, 2003: 406). These actors then sought to mobilize other actors.

They chose to respond to the call for projects for competitiveness clusters. They engaged in a collective action and sought to cooperate and coordinate. They were constrained by the cluster policy set by the government, which applied to them as a control regulation, but they sought to appropriate this policy, in other words to "*reinvent*" (Reynaud, 2003: 406), in order to solve their common problem of competitiveness.

However, at that point, the cluster was only an idea, carried by an initial coalition of actors willing to work together. They had to define rules in order to do so (Reynaud, 2003; de Terssac, 2003). As part of the cluster policy, they adopted internal rules, making the choice of a niche strategy focused on up-market cars. These rules were established on the basis of their knowledge: they considered that following the strategy of PSA Peugeot-Citroen on this territory, focused on large and up-market cars, was a way to defend competitiveness, through innovation projects oriented towards high-end automotive industry in Western France. They took ownership of the cluster policy by establishing their own rules to achieve a common solution to the parties involved, thus seeking to "*establish a way of living together*" (Reynaud, 2003: 322). These were autonomous rules regarding the incomplete control rules of the cluster policy: the call for projects did not indeed specify how to achieve competitiveness. The initiative was left to local parties to define how their activities were to be implemented,

leaving a place for autonomous regulation within the frame of the cluster policy. Each cluster project therefore had to establish its own regulation, to define locally how their activities were to be implemented, and whether other value-creating processes could be added to the agenda of the cluster (Fen-Chong, 2009: 141). Each cluster project appropriated the cluster policy in a singular way, in order to respond to local problems, therefore leading to singular clusters, although they were all built within the frame of the same national policy. There was a place for autonomous regulation in the cluster policy.

As part of the cluster policy rules, they hired an operational team. Together with the members of this team, they decided on their operating rules: they established the strategic business areas that they would cover, printing their vision on the collective. The members of the operational team largely influenced regulation. For instance, special attention was paid to embedded systems as part of up-market car equipment, because one of the project managers hired had considerable experience and a strong network regarding this technology. A thought process was also started on the uses and functions of cars as a way to innovate, because the cluster general manager was particularly interested in this subject. These were part of the rules established for the up-market cars cluster. It was the emergence stage of the cluster as a coalition.

This initial coalition then tried to mobilize other parties that also recognised a competitiveness problem and were willing to work collectively on up-market car innovation projects to solve it. The operational team started prospecting the territory. However the new parties joining the cluster "*[were] not subject to a higher authority which might compel them to take part in such a collective action*" (Michaux et al., 2011). They had to accept the project and the rules defined by the initial coalition during the emergence stage, and had to pay a fee to enter the cluster. These parties recognized a common competitiveness problem, and accepted to work as a team on up-market car innovation projects to solve it. When accepting these common rules, they took part in a collective action. However, these rules then had to evolve to include these new parties and their problems, as actors would only join the cluster if they approved the solution proposed. The operational team of the cluster therefore had to make the necessary changes to the rules to include these parties. For instance, several actors joined the cluster with a need for help on individual research and development projects, which were not foreseen in the cluster's regulations, nor in the national cluster policy's regulations. The operational team then dealt with the incompleteness of the established rules (Reynaud, 1989),

and defined a new rule consisting of guiding individual research projects as a first step towards collective projects. The members of the operational team were the ones dealing directly with these new members and their problems, and therefore had to set up the regulation work required to include the new parties in the overall regulations. They were responsible for regulation, and had to select problems in order to guarantee cohesion. The cluster then came to life as a collective. This was the generalization stage.

As new parties joined the collective, they brought new problems and made the rules evolve. The up-market positioning was soon questioned: although it was defined as a collective rule, it had always been "*difficult to justify*", admitted the former president of the cluster. "*The high-end seemed scary, small businesses felt left out*" (a small business manager). Local parties had trouble taking ownership of a strategy defined to answer the call for projects, in which they were not involved. They felt the cluster strategy was not congruent with their activity and they questioned the initial cluster project. Many companies came to the cluster operational team with problems that were unrelated from the high-end automotive thematic, but they thought their problems related to competitiveness and could be answered through innovation projects. The cluster operational team started to deal with these problems, defining new autonomous rules regarding the overall regulation initially defined. This was the transformation stage: a new coalition emerged and a new strategy was defined. Some parties left the coalition, either because their initial problem had been solved or because they did not accept the new collective solution, and others joined. New problems were considered. The "up-market cars cluster" became "iDforCAR", henceforth focusing on specific vehicles. The cluster entered a new emergence stage, led by its operational team. This transformation was made possible because the operational team was able to evolve and accept new parties and new problems, changing the regulation of the cluster. Cluster members considered it to be a result of the extensive fieldwork and regulation work conducted by the operational team, which is able to include more actors. Indeed, the rise of memberships from the deployment of the new strategy seems to confirm that the new regulation offers a solution to more problems, and to more parties, and appears as a better solution to the competitiveness problem: "*since we are called iDforCAR, we begin to see the emergence of projects, such as vehicle of the future, electric road train ... They are very innovative projects with high added value*" (iDforCAR general manager).

Conclusion

This study suggests a theoretical framework based on the Theory of Social Regulation (Reynaud 1989) to enlighten the emergence and the construction process of a French competitiveness cluster. It shows how local actors seize the top-down cluster policy in order to solve their competitiveness problem. They then establish rules in order to work together and reach competitiveness, taking ownership of the cluster policy. As new actors join the cluster, the operational team needs to adapt the rules in order to answer their problem.

Reading the history of this cluster with the Theory of Social Regulation allows a new perspective, showing that a cluster is under a permanent construction process, reorganising and adopting new rules when new actors join, to answer new problems. The role of the operational team is therefore essential to make sure that the rules established fit into the collective project, in order to defend the cohesion of the regulation. This perspective also permits to understand the singularity of clusters: although they are built within the frame of the same national policy, they each take ownership of this policy in a different way, in order to respond to local problems, therefore leading to singular clusters.

Moreover, this paper also contributes to the Theory of Social Regulation. This theory was initially developed to analyse work situation at a micro level (Reynaud, 1989; 2003). It had been applied to organisations (for instance Desreumaux and Bréchet, 2009) in an intra-organisational context, and to the market (Le Velly and Bréchet, 2011). This paper shows that the analyse in terms of control and autonomy is also relevant to understand inter-organisational phenomenon such as clusters.

In this paper we have deliberately focused on the overall coalition of the cluster. The Theory of Social Regulation however makes it obvious that a cluster is not only this overall coalition. Each research project held within the cluster is in itself a coalition, as is each problem brought to the cluster, since these projects and problems lead to the construction of a collective in order to solve them. In each of these groups, rules are set up to define the aims and methods of action of the collective. The operational team then ensures the consistency of these local rules and coalitions with the overall regulation and the overall coalition. Further work can be done to analyse the regulation work within this various coalitions and to show the role played by the operational team to ensure overall cohesion. This study is also over a restrictive period of time, and should be taken further to identify the next steps of the regulation process.

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