THE PORT AS A "NON CONSENSUAL" ORGANISATION - AN IC MANAGEMENT PERSPECTIVE

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Abstract: This paper addresses a gap in the literature concerning the management of Intellectual Capital (IC) in a port, which is a network of independent organizations that act together in the provision of a set of services. As far as the authors are aware, this type of empirical context has been unexplored when regarding knowledge management or IC creation/destruction. Indeed, most research in IC still focus on individual firms, despite the more recent interest placed on the analysis of macro-level units such as regions or nations.

In this study, we conceptualise the port as meta-organisation, which has the generic goal of economic development, both for itself and for the region where it is located. It provides us with a unique environment due to its complexity as an "organisation" composed by several organisations, connected by interdependency relationships and, typically, with no formal hierarchy. Accordingly, actors' interests are not always aligned and in some situations their individual interests can be misaligned with the collective goals of the port. Moreover, besides having their own interests, port actors also have different sources of influence and different levels of power, which can impact on the port's Collective Intellectual Capital (CIC).

Consequently, the management of the port's CIC can be crucial in order for its goals to be met. With this paper we intend to discuss how the network coordinator (the port authority) manages those complex relations of interest and power in order to develop collaboration and mitigate conflict, thus creating collective intellectual assets or avoiding intellectual liabilities that may emerge for the whole port.

The fact that we are studying complex and dynamic processes, about which there is a lack of understanding, in a complex and atypical organisation, leads us to consider the case study as an appropriate method of research. Evidence presented in this study results from preliminary interviews and also from document analysis.

Findings suggest that alignment of interests and actions, at both dyadic and networking levels, is critical to develop a context of collaboration/cooperation within the port community and, accordingly, the port coordinator should make use of different types of power in order to ensure that port's goals are achieved.

Keywords: seaport, collective intellectual capital, collaboration, conflict, interest, power, network coordinator

1. Introduction

Academic discussion has been stressing the strategic importance of leveraging and managing IC for improving organizational performance (Schiuma and Lerro, 2008). IC management refers to different activities in identifying, measuring, controlling and developing intangible resources in business (Kujansivu, 2008) and organizations that manage their IC are better able to respond to unanticipated economic and market changes (Tayles, 2007).

Although most research on IC addresses individual organisations (Tan *et al.*, 2008), there has been a growth of literature regarding the study of IC in macro-level units where the role of knowledge resources as source of regional and local development dynamics has been stressed (Pöyhönen and Smedlund, 2004). Despite this trend we consider that still there is a gap in literature when referring to certain contexts, such as the case of seaports. A seaport can be characterized as a complex, multi-functional organisation formed by several other organisations, cooperating to provide a common service. Due to its own organizational specificities, we conceptualise it as a meta-organisation (Vale *et al.*, 2012).

By working in cooperation as a single team, these economic agents can maximise their own performance, as well as the performance of the whole system (Lee and Song, 2010). Cooperation facilitates mutual learning and leads to the production and stabilization of routines by putting members' knowledge into action, i.e. create IC (Pöyhönen and Smedlund, 2004; Lee and Song, 2010). In such context, in order to build sustainable competitive advantages it is crucial for organisations to also rely on the IC of others (Marti, 2004).

On the other hand, network performance (including IC creation) may be limited due to a mix of shared and also firm-level goals, values and experiences (Ketchen and Hult, 2007) with value propositions being developed at both individual and network levels (Ackermann and Eden, 2010). Indeed, a port can be conceptualized as a coalition of actors following their own interests, where sometimes they may have to choose to act (or not) in order to benefit themselves rather than the whole chain (ibid.). Furthermore, besides having their own interests in the port, these actors (public or private) also have different sources of influence and different levels of power (de Langen, 2006). According to their degree of power and interest, they may support (or undermine) the organisation's strategy and performance (Ackermann and Eden, 2010).

Cooperation to achieve collective goals may not always develop spontaneously and thus network leader organisations (usually the port authority) can play a crucial role (de Langen, 2004; de Langen, 2006), namely by orienting members' behaviours towards the whole community's needs and interests (Provan *et al.*, 2007). Therefore, the quality of governance by the port authority is a critical factor (de Langen, 2006), especially regarding the management/development of the port's CIC.

Due to the aforementioned port characteristics, namely the fact that we can find situations of alignment/misalignment of interests and also of power balance/imbalance between the port actors, managing the whole port's CIC can be a complex process. Grounded on a literature review and on a case study, this paper discusses how a network coordinator manages the CIC of a port. The port authority not only has to make collective investments in IC, but also to promote a positive collaboration as well as to prevent or manage situations of conflict.

2. Literature Review on IC management

In a knowledge driven economy, the most important assets of an organisation tend to be intangible and thus IC should be regarded as a crucial and distinctive element for an organisation to create value (Roos and Fernstrom, 2005; Tayles *et al.*, 2007). Managers have been faced with new demands (Tayles *et al.*, 2007), stressing the importance of IC management, defined as *"the deployment and management of intellectual capital resources and their transformations (into other intellectual capital resources or into traditional economic resources) to maximize the present value of the organization's value creation in the eyes of its stakeholders"* (Roos and Fernstrom, 2005, p.42).

Academics have been stressing the importance of leveraging and managing knowledge assets in order to develop firms' performance (Schiuma and Lerro, 2008) and IC management models have been developed, allowing the identification, measurement, management and spread of knowledge (Ramírez *et al.*, 2007; Tan *et al.*, 2008). Several models have been used to manage IC considering strategy as the main reference and allowing the management of IC inputs (specifically human, structural and relational resources) in order to improve the outputs (Marti, 2004; Ramírez *et al.*, 2007). There are several

advantages for assessing and managing IC in organisations, namely to develop new business models, improve organizational performance and value creation dynamics, develop knowledge to support the growth of the organizations' competencies, and supporting the governance of the organisation (ibid.).

However, most IC management studies focus on value creation regarding individual firms, even though interest for the study of IC in macro-level units such as nations, regions, clusters or local production systems has been growing (Pöyhönen and Smedlund, 2004). Indeed, competitiveness and productivity at these levels may be improved through intangible assets and by adapting the firms' business models to these bigger scopes (Lin and Edvinsson, 2011). Despite this new trend, we consider that some macro-level units, such as networks, are still under explored regarding IC management. Although most knowledge is developed in networks (Pöyhönen and Smedlund, 2004), there has been a lack of research on these contexts, namely at the network level of analysis (Provan *et al.*, 2007). Seaports are interesting examples of territorial economic systems encompassing a complex network of activities (Degrassi, 2001; Alderton, 2005), possessing specific characteristics that differentiate them from other collective organisations. They are formed by public and/or private organizations cooperating as a team in order to provide a competitive collective service (Lee and Song, 2010; de Langen, 2004).

3. Background on IC in seaports

In a seaport, collaboration and cooperation are particularly important forms of collective behaviour between actors that interact with each other in a network (Polenske, 2004). By exchanging knowledge, port members not only can improve their efficiency but also the performance of the whole port (Lee and Song, 2010). Therefore, managing the seaport's CIC can be crucial. When organisations share and co-develop resources and capacities, building long-term resources, they can co-evolve, thus increasing the possibility of obtaining benefits (such as IC) associated with the relationship (Joia and Malheiros, 2009).

In this study we distinguish cooperation from collaboration. We consider cooperation as a more operational concept where two or more actors have only to assist each other and collaboration as a more strategic concept, referring to trust-based relationships grounded on a sense of shared goals, thus being ambiguous and learning intensive, and requiring considerable investment of time and energy (Polenske, 2004; Ketchen and Hult, 2008).

Within a seaport, activities are interconnected with each other and their functions are mutually affected (Lee and Song, 2010). In line with systems theory, we view a port as a meta-organisation, i.e. as an organisation formed by individual organisations, which possesses its own collective goals. Likewise, we argue that in a seaport context two different types of IC coexist and are interrelated: the individual IC (IIC) of each member and the collective IC (CIC) referring to the port as a whole (Vale *et al.*, 2012).

Therefore, port actors may have different interests. Unions seek to maximise employment levels, job security and wages, other organisations such as Transport firms, operators or shippers want low port costs. Environmentalist groups seek for full environmental protection and to avoid negative externalities and local residents don't want to lose their life quality, also aspiring to job creation (De Langen, 2006; Notteboom and Winkelmans, 2002). These are some examples of different interests that may diverge from the port's ones (the economic development of the region) and, in some situations, actors may exhibit non-cooperative or even conflictive behaviours defined as *"the behaviors or feelings of interdependent parties in response to potential or actual obstructions that impede one or more of the parties achieving their goals"* (Bradford *et al.*, 2004, p.182; De Langen, 2006; Notteboom and Winkelmans, 2002).

Although cooperation/collaboration between actors is needed in order to create CIC, their behaviours are driven by their own interests (Notteboom and Winkelmans, 2002) and they may try to benefit themselves even if damaging the whole chain in terms of performance (Cabrita and Bontis, 2008; Ketchen and Hult, 2007). Therefore, the creation or destruction of IC at one level of analysis does not imply the same effect at the other level (Vale *et al.*, 2012). Based on Nielsen and Dan-Nielsen (2010), we consider that the CIC

(at the meta-organisational level) emerge from a process where knowledge at a lower level (at the member level) interact with the environment. According to this rationale, the whole (CIC) is different from the sum of its parts (individual knowledge) (Pöyhönen, 2004; Nielsen and Dan-Nielsen, 2010).

A seaport's CIC might thus be damaged not only as a consequence of its members' individual actions but also as a result of non-collaboration or even (behavioural) conflict. Conflicts between Unions and other port members, for instance, are frequent in these contexts and can provide us with illustrations of how those conflicts can damage the whole port's CIC (namely its reputation).

In summary, we argue that an alignment of interests between members and also between members and the port as a meta-organisation is needed in order to promote cooperation/collaboration and thus IC creation. On the other hand we consider that misalignment of interests may lead to conflict and thus intellectual liabilities may emerge. Therefore, managing IC in a port can be very complex when compared to individual firms and as long as the authors are aware there is no literature proposing the development of a management model with that specific purpose.

4. IC Management by a Network Coordinator

Organisations' capacity to exchange or share knowledge can lead to the development of new capacities, consequently increasing their IC (Joia and Malheiros, 2009) and the stronger the collaboration between maritime operators, the bigger the probability for them to proactively share information and knowledge (Lee and Song, 2010). However, regarding knowledge sharing, supply chains (within a seaport) may face two dilemmas (Sporleder and Peterson, 2003): how to motivate its members to share valuable knowledge (an organization tends to keep valuable knowledge for itself); and how to overcome the fact that classic collective action problems may emerge (ibid.).

Following a relational approach to the management of IC, the problem is that cooperation/collaboration (and thus IC creation) often don't develop for themselves, automatically (de Langen, 2006). Within this type of context, certain organisations have superior coordination skills and are capable of steering change and influence the performance of the whole cluster (de Langen, 2004). One such organisation is the network coordinator, usually in the form of a port authority, which can be considered the most central actor in this context and whose objective is to improve the quality of collective action regimes in the port (de Langen, 2004). Port authorities not only can solve collective action problems, but also play an important role in several tasks such as the creation of core competencies, i.e. IC, development of information systems or port networking (Notteboom and Winkelmans, 2001).

Network coordination can thus be a crucial element in a seaport context. Coordination takes into account the best interests of the whole system (Belaya and Hanf, 2009). Besides the fact that it can lead to an increase in competitiveness and to the provision of better services (Provan *et al.*, 2007), it can provide a facilitative environment for knowledge transfer and diffusion. It can foster a local culture where members are highly interdependent, and "cultural proximity" can, in turn, facilitate communication and also collaboration by means of increasing trust, awareness and commitment (Forsman and Solitander, 2003).

Nonetheless, a network coordinator may or may not have the legal authority to impose rules to other members of the network. When it does not have this authority, the network coordinator strives to influence the other members to act in line with the network's goals, in order to increase the network performance (Marques *et al.*, 2011). Therefore, a power exercise may be needed in order to align interests and to promote collaboration and thus develop CIC for the whole port. Power can be used as a mechanism to coordinate social relationships between cooperating actors (Belaya and Hanf, 2009). In order to reach their goals, organisations have to manage their stakeholders in an effective way and, thus, it is important to determine who are the key stakeholders (Cabrita and Bontis, 2008; Ackermann and Eden, 2010).

5. The Role of Power

A port is a good example where we can find several different actors not only with different interests but also with different sources of influence (De Langen, 2006). In this context, understanding power relations between the different actors is crucial to understand the port community and therefore issues of power in a seaport should not be neglected when adopting a relational point of view (Olivier and Slack, 2006).

In this paper, we conceptualize power as "as an individual or collective entity's ability to structure and restrain choices and actions of another individual or collective entity by some particular mechanisms that *may be formal as well as informal"* (Chassagnon, 2011, p. 122). Power can thus affect both collaboration and coordination and accordingly, alignment of interests and alignment of actions (Belaya and Hanf, 2009). According to Hardy (1996) power is a multidimensional concept encompassing the power of resources, the power of processes, the power of meaning and the power of the system. Therefore, both coercive (power of resources) and non-coercive types of power can be used with success by a focal actor (the port authority) to manage the network (Belaya and Hanf, 2009).

Although traditionally the power concept has a negative connotation, it can also be approached from a more positive view, where its exercise allows for the achievement of outcomes by promoting collaboration and preventing the emergence of conflict (Hardy, 1996). Here, the focal actor can use power as a coordination mechanism aiming to develop relationships, solve conflicts and increase the performance of the whole network (Belaya and Hanf, 2009).

Although the fact that coercive power may not promote collaboration or even deteriorate relationships, it can be very useful to align action problems and to maintain order (ibid.). On the other hand, non-coercive power may help promote collaboration between members and thus common interests and goals (ibid.).

6. The Case Study – Aveiro's Seaport

The Aveiro's seaport, as any seaport, provides us with a unique environment due to its complexity as an organisation composed by several organisations, each of one having their own individual goals and different levels of power, but connected by interdependency relationships. Therefore, we consider the Case Study as suitable method to develop an understanding of how a port authority manages the port's CIC in order to achieve the meta-organisation goals. Indeed, in this paper we study a contemporary and complex phenomenon within its real-life context (Yin, 2003).

Several informal and semi-structured interviews were made to members of Aveiro's Port Authority (APA) between 2010 and 2013. We stress the ones made to a member of the board, which was fundamental due to his technical knowledge regarding maritime transportation and to the fact that he has been playing an important role in APA's management decisions. Another important interviewee was an APA´s Business Development Manager, whom not only took an active part in the development of the Aveiro's Port Community Association (PCA), but also had a general knowledge about the events we choose to analyse. Finally, we also interviewed an APA's Environment Manager in order to collect information about the implementation and the processes related to the port´s environmental management system
These interviews along with the analysis of documents provided us with the insights needed to develop some illustrations to ground our discussion.

Illustrations and Discussion

In this section we provide and discuss several illustrations in order to depict how a port coordinator manages the port's Collective Intellectual Capital by using different types of power.

The use of Contracts and The Environmental Management System - A Coercive Approach

Within Aveiro' port, several organisations such as the port operators work under licences or concessions agreements. Licences are short term authorizations given by Aveiro's Port Authority (APA), in which operational rules can be stipulated. By using this formal mechanisms APA can either reward or sanction other members. We consider that the use of this mechanism can promote cooperation between members due to the fear that APA will not renew their contracts. In their study, Marques *et al.* (2011) conclude that operators are more motivated to cooperate when their license is near its term. Indeed, according to Belaya and Hanf (2009) procedures, rules and guidelines, such as those contained in contracts are important to improve coordination, despite being a reflex of a coercive power. We consider that this fact can be illustrated by an episode involving some port actors. When APA implemented a new IT system in order to improve procedures and promote cooperation, several shipping agents were initially renitent to share information. However, they came to accept this system. We consider that one motive for this acceptance was the fear of sanctions.

Another example illustrating the use of power in order to manage the port's CIC regards the environmental management system (EMS) implementation. In order to improve the port's environmental reputation, in 2001 APA implemented its own environmental management system (EMS). Behind this initiative there was a broader goal, which was improving the whole port's environmental culture by extending the EMS to the entire port and to sensitize and involve the port community in the adoption of good environmental management practices,

However, because APA could not interfere with each members' individual environmental procedures, organisations were formally invited, in the first place, to join the environmental policy of Aveiro's seaport. Than APA followed a process of making internal audits and annual surveys to the port community in order to detect non-conformities regarding environmental issues. When detected, corrective and preventing actions were defined and recommended to the individual member.

This illustration provide us with a different approach to the use of a coercive power. The EMS illustrates a case where although rules could be not imposed by APA, a coercive power was also exerted. According to an APA's Member of the Board *"The president of the board wanted, at the time, to expand [the EMS] to other companies, although they knew from the start that they would not be forced to do what we* recommended. *What has been the practice is that they do. Why? I think it is for fear of reprisals by the APA and also because they know that it is the right thing to do. There is also an ethical perspective regarding the environment"*.

On the other hand, an APA's Environment Manager claimed that although most port organisations usually try to solve the unconformities detected, after the audits they don't improve their environmental procedures by their own initiative.

Therefore we consider that both illustrations suggest that coercive power can be used to influence actors' behaviours, by controlling and deploying key resources on which they are dependent (in these cases sanctions) (Hardy, 1996). Although the use of coercive power may not contribute to develop a trust based collaboration and thus create a more "sustainable" form of CIC, we consider it more appropriate to align actions between the different port actors (through an operational cooperative behaviour), preventing the damage to the CIC that would accrue if they followed their own interests.

The use of the Port Community Association and the Strategic Plan - A Non Coercive Approach

The Aveiro's PCA was created in 1998 with the aim of developing port competitiveness such as by improving the coordination between port actors and by proposing improvements for the port. The joint promotion of the port and the development of processes are two examples of how IC may be developed. Membership in the association is free and as an association its actions affect the members. On the one hand meetings between members are important for the exchange of knowledge. On the other hand and due to the interdependency relationships between several of its members, these meetings are also an important means to prevent conflict.

This illustration presents us with an example of how, through the PCA, APA can exert a non-coercive type of power in order to achieve their goals and thus create CIC such as the joint promotion of the port and the development of its brand. The PCA can thus be seen as a collective effort of IC creation.

Another illustration regarding the process or developing collaboration and thus CIC is the process of development of the port's strategic plan. In 2005 Aveiro's port authority developed a strategic plan for the whole port, where the main strategic collective goals were defined. APA promoted several meetings with various members of the port in order to determine the main aspects that should be addressed.

Although the strategic plan *per se* can be seen as an investment (by the port authority) in "structural" IC for the whole port, we consider that the process involving the development of that plan had a greater impact. Knowledge was exchanged during that process and the strategic plan was used as a tool to align different interests into one document. Once again we consider this process as a non-coercive exercise of power by APA in order to promote collaboration.

These two illustrations seem consistent with the three 'non coercive' dimensions of power suggested by Hardy (1994). Due to the fact that usually it is the port authority who proposes the issues to be discussed we consider the PCA as a governance mechanism used by APA in order to promote collaborative behaviours between their members. Clearly, the APA manages the processes of discussion and decision-making involved in the PCA, which can be seen as an example of the 'power of processes'. Furthermore, we argue that the strategic plan can be seen as a tool used by APA to legitimise its decisions, namely by consulting several parties, i.e. by making use of the 'power of meaning'. In general, both the PCA and the discussions surrounding the strategic plan are means through which the APA attempts to foster a sense of belonging to a collective with common interests and, in this sense, to instil a culture of collaboration in the organization. This seems consistent with the concept of 'power of system'.

7. Concluding Remarks and Future Development of the Research

IC management in a meta-organisation such as a seaport is a complex task when compared to individual firms. A seaport is an example of a context where inter-organisational relationships are dependent on power, values and members' interests (Rodríguez *et al.*, 2007). Indeed, within a port we may find examples of conflict of interests between members and also between some of them and the port (represented by the port authority). Furthermore, different levels of power may characterise the relationships between the actors. Not only a Port authority has to balance different interests when making decisions, which is a difficult task to achieve (Notteboom and Winkelmans, 2002), but also it may or may not have the capacity to exert power towards other actors such as Customs or other public authorities.

Grounded on a literature review and on the insights provided by the case study, in this paper we suggest that, in order to create CIC or prevent the emergence of collective liabilities, the port authority should focus its IC management initiatives at aligning interests and actions of the various actors. By exercising non-coercive power over other actors, trust based collaboration may be developed in order to create a more "sustainable" form of CIC, besides preventing conflict. Strategic actions such as the development of associations, should thus be promoted. On the other hand, we suggest that coercive power, and a more operational type of actions, should be used namely to promote a more task-oriented type of cooperation not only in order to create CIC, but namely to prevent the emergence of Collective Intellectual Liabilities (CIL). We also suggest that APA can create CIC by investing itself in developing resources. For example, both the strategic plan and the EMS were initiatives from APA that can be considered as collective "structural" capital for the meta-organisation. Also regarding the EMS, APA provided itself environmental training to some actors which were consider to be of "a higher environmental risk". Therefore, the port authority may create value for its stakeholders by developing a collective culture and focusing on CIC generation such as reputation.

The relations suggested in this paper are depicted in the following CIC management framework:

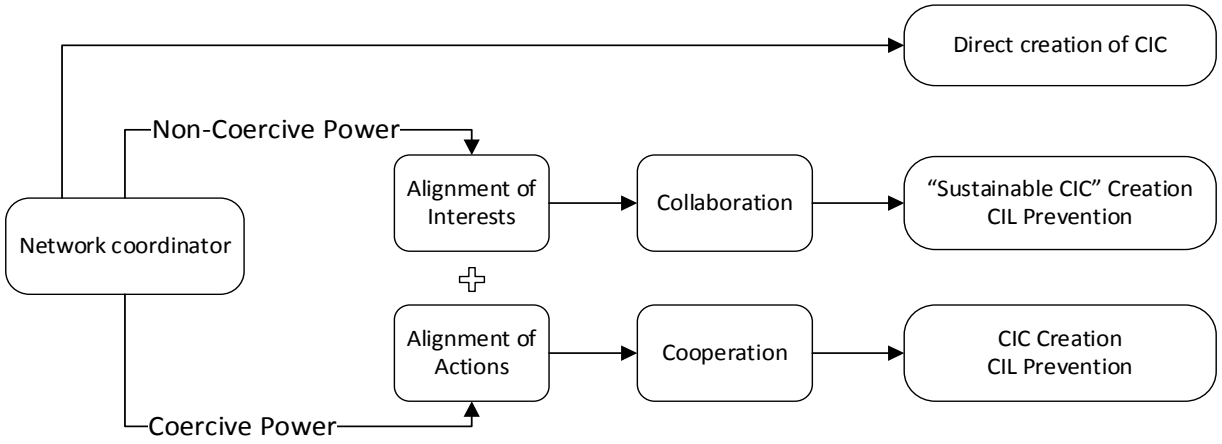

Figure 1 - A CIC Management Framework

Finally, although a port authority may act in order to align interests ant promote collaboration, in certain occasions conflict might prevail, namely when there is a power balance between the involved actors (including the port authority). Port members may have different interests which might result into behavioural conflicts that can deteriorate the CIC. A common example regards to conflicts between Unions and operators. Therefore, future research should address how a network coordinator may manage different types of conflict in order to minimise the effects of a potential collective intellectual liability. Finally we consider that future research should also address similar networking contexts such as airports, where different actors have different interests and levels of power.

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