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A COLLECTIVE ACTION PERSPECTIVE ON TECHNOLOGICAL INNOVATION IN BUSINESS/GOVERNMENT NETWORKS

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Abstract

A major challenge for European governments is solving the dilemma of increasing security and control of international trade, while at the same time reducing the administrative overhead. The EU focuses on the introduction of paperless IS to tackle this. In order to really bring benefits for both parties and address the dilemma, it becomes increasingly important that governments and businesses look for alternative innovative solutions that go beyond simply replacing paper-based systems with IT. However the EU works with a predefined, long-term agenda which is linked to the EU legislation. Even if such alternative innovative solutions are developed, they are doomed to fail, if a network of powerful actors is not (or is inappropriately) mobilized to bring the desired change up to the legislative level. There is only limited understanding about how such networks can be mobilized. In this paper, we investigate the Beer Living Lab (Beer LL) pilot project applying the collective action model of institutional innovation of Hargrave and Van de Ven. The model appears to be an interesting lens to analyze the eCustoms developments.

Keywords: eGovernment, ICT adoption, EU, institutional innovation, collective action, dialectics

1 INTRODUCTION

Governments are key players in the arena of cross-border trade. The customs and taxation offices are mostly concerned with defining the regulations towards the businesses, controlling the flow of goods and collecting duties. In the European Union, one of the key objectives is to improve the competitiveness of European businesses in international trade. However, businesses often consider interaction with the public sector as an administrative burden (Fountain and Osorio-Urzuu, 2001). At the same time, EU governments are concerned with issues of health, safety and security, and fraud prevention. Constantly, new customs procedures and documents are introduced, a latest example being the strict security requirements as a result of 9/11, which pose an additional burden on companies. This reflects one of the major dilemmas of the EU governments i.e. how to reduce the administrative overhead, while at the same time preserving the control and security requirements. Two stated long-term goals of eCustoms development in Europe, the introduction of Single Window and Authorized

Economic Operators, are central in solving this dilemma (see e.g. COM, 2003; DG/TAXUD, 2004). Single Window (SW) services are intended to enable businesses to conduct all interactions with customs via one point (preferably online). Authorized Economic Operators (AEO) are certified businesses that because they can constantly show that they are secure, are granted simplification of their Customs interactions. These measures should lead to significant reductions in the administrative load, improved customs' control procedures, and open up possibilities to make e.g. improved risk analysis to secure and enable cross-border trade.

Process redesign and use of ICT are widely perceived as key components of a solution for public sector institutions (Andersen, 2004). If we look at the long-term plans of the EU, numerous EU-wide systems are already being developed and will be introduced in the near future. Although the vision of SW and AEO are on the political agenda, the current practice is often that such EU-wide systems for cross-border trade are implemented only for the purpose of reporting to the authorities and do not serve any commercial purposes. As such, they introduce marginal improvements rather than substantial gains in reducing the administrative burden and preserving the control and security.

It becomes increasingly important that governments and businesses jointly look for alternative innovative win-win solutions. Such cooperation however is hardly visible in the eCustoms practices in the EU, where government is usually imposing the rules. The main problem is that even if such innovations are developed bottom-up, the EU legislation is often a major barrier for their subsequent adoption. Furthermore, the EU works with a predefined, long-term agenda for the development of eCustoms systems, which is very difficult to influence or change. Thus even if alternative innovative solutions are developed, they are doomed to fail, if a network of powerful actors is not (or is inappropriately) mobilized to bring the desired change up to the legislative level. *The main objective of this paper is to provide insights into how to understand how such a network is mobilized as an attempt to institutionalize an eCustoms innovation.*

To address this problem, we use the collective action model of institutional innovation of Hargrave and Van de Ven (2006), which is based on the dialectic motor of change. The dialectic motor focuses on how an established thesis is confronted with an anti-thesis to lead to a synthesis, which becomes the thesis for the new dialectic cycle (Van de Ven and Poole, 1995). The model is applied in an empirical setting which we label the "Beer Living Lab" (Beer LL). The goal in the Beer LL is to come with innovative ideas and solutions as to how to solve the eGovernment dilemma. Overall, this exploratory paper focuses on gaining an understanding of whether and how the collective action model of institutional innovation proposed by Hargrave and Van de Ven (2006) can be used to make sense of the interactions between governments and businesses to bring about eCustoms innovations. We will address some initial practical implications emerging from our analysis, but our main contribution here lies in bringing an alternative dialectical perspective into the field of eCustoms.

The remainder of this paper is structured as follows. In part two, we provide a brief overview of the IT innovation literature and we propose to take a more recent perspective on studying innovation by using the collective action model. In part three, we discuss the Beer LL pilot. Building on this specific case, we are able to gain better understanding of how collective action is mobilized. We end the paper with reflections on the suitability of the collective action model for gaining insights in eCustoms development and implementation.

2 LITERATURE REVIEW

2.1 IT innovation

The concept of innovation and the adoption of innovations is extensively explored in the IS research (see for example Iacovou *et al.*, 1995; Fichman, 2004). We cannot provide an all-encompassing overview here, but we will highlight elements to build our case for applying a collective action

perspective. A widely accepted definition of an innovation is "... an idea, practice, or object that is perceived as new by an individual or other unit of adoption" (Rogers, 2003, p. 12). Especially the concept of innovation as a practice and in particular changes in practices caused by IT innovation adoption has caught the attention of (IS) researchers since decades. Prominent examples include the organizational adoption of a financial accounting system (Markus, 1983), the adoption of CT scanners in the American hospital environment (Barley, 1986), and the study of the massive diffusion of BPR in the 1990's (Newell *et al.*, 2000). In these cases it has been recognized that the concept of innovation might not be as stable as suggested by Rogers (2003). We concur that innovations are not fixed entities but that they are subject to interpretation, evolve over time, and require interactions among different counterparts, where the innovation gets shaped by its adopters (Newell *et al.*, 2000, Walsham and Sahay, 1999).

IT innovations are predominantly studied from an economic-rationalistic model (Attewell, 1991, Fichman, 2004). Alternatively, based on an extensive literature study on IT innovations, Fichman (2004) proposes several qualitative perspectives that can be taken, including management fashions (c.f. Abrahamson, 1991) and mindful innovating (c.f. Swanson, 2004). Investigations from a communications and learning perspective concentrate on informing and influencing people regarding the innovation, and learning about it (Attewell, 1991). The focus is - similarly to for instance Soft Systems Methodology - on creating and sustaining shared understandings. We acknowledge that communication and learning are important. However we also would like to stress that in the context of eCustoms, where legislation plays a crucial role for the adoption of the innovation, it is essential to include an additional perspective in the analysis, which acknowledges that it is essential to achieve collective action as well. This is a different process and deserves separate treatment and attention.

Furthermore, eCustoms innovations take place in an inter-organizational network but unlike the innovations studied from an industrial network perspective (e.g. Hakansson and Waluszewski, 2002), obviously government-business interactions are a crucial aspect here. There are studies that focus on the role of government in the diffusion of innovation. For example, King *et al.* (1994) identified six types of institutional intervention that the public sector may employ to stimulate adoption and diffusion of innovations. Although the public sector plays a central role in the diffusion of eCustoms by issuing rules and regulation, we find that the framework of King *et al.* (1994) is limited to explain the developments that we observe in eCustoms, as it is unidirectional in the sense that the assumption is that government sets the agenda for institutional change by issuing rules and regulation which adopters adapt to.

To reveal the complex interactions that take place in eCustoms innovation where both business and governments form part of the inter-organizational relationships we find useful to adhere to the notions of social construction of technology approach (e.g. Pinch and Bijker, 1987) which stresses the multiplicity of social groups¹ involved in the process of technological development and the diversity of meanings they attach to technology. A major critique to this approach is its emphasis on consensus, which implies that conflicts are dysfunctional phenomena, something to be avoided or resolved. Yet, controversy and conflict can also be seen as the basis of innovation. Benson (1977) provides some abstract pointers in this direction, as he argues that dialectical conflicts enable people to identify limits and opportunities and the conflicts can be a source of creative tension as well.

In dialectical processes, the current thesis of institutional arrangement (A) is challenged by an opposing group espousing an antithesis (Not A) which sets the stage for producing a synthesis (Non Not A). This synthesis becomes the new thesis as the dialectic process recycles and continues (Van de Ven and Poole, 1995). Dialectical conflicts in terms of both interests and understandings are highly

¹ Actor Network Theory stresses the notion of *actants* which includes non-human actors and more distinctively focuses on heterogeneity, agency, and power relations (e.g. Law, 1992). In our present analysis we put more emphasis on how parties were linked and less on how technologies got embedded in the network. However, we do consider it useful for further research to pay more attention to the technological embedding.

likely to occur in relation to eCustoms innovations. Because for instance legal forces interplay with the ways in which innovations are developed and diffused, the pre-existing legal basis needs to be challenged. The complexity of this is tremendous because customs-related legislations are built on consensus of the EU's member states. In our situation, where the solution is developed outside the direct influential sphere of the EU, the complexity is even greater.

The need to escape the paradoxical situation of both the on-going dialectics and the need for collective action sparks our interest in a recent paper in which Hargrave and Van de Ven (2006) propose an interesting perspective which takes into account such multiplicity of actors in the processes of mobilizing collective action for institutional innovation.

2.2 The collective action model of institutional innovation

In their review of the literature on institutional innovation and change, Hargrave and Van de Ven (2006) conclude that although the scholars have extensively examined how organizations adapt and conform to institutional environment pressures in order to achieve legitimacy there is still little understanding about the generative processes of collective action through which institutions or institutional norms based on innovations are created. We encountered similar issues when we tried to understand eCustoms innovations, as we observed that the legal changes are of prime importance for an innovation to succeed. To fill this gap, Hargrave and Van de Ven (2006) introduce the collective action model of institutional innovation. The model is based on the technology innovation management and social movement literature.

The primary concern of the collective action model of institutional innovation is how new institutional arrangements emerge from interactions among interdependent partisan agents. The collective action model "examines the construction of new institutions through the political behaviour of many actors who play diverse and partisan roles in the organizational field or network that emerges around a social movement or technological innovation" (Hargrave and Van de Ven, 2006, p. 868). The collective action model builds on the dialectical theory of change.

There are four central elements in the collective action model, (1) *the framing contests*, (2) *the construction of the networks*, (3) *the enactment of institutional arrangements* and (4) *the collective action processes*. The framing contest calls attention on the creation and manipulation of the meaning of issues. Hargrave and Van de Ven (2006) give examples from social movement theory where they illustrate that the success of the activists depended on how they have positioned and framed their solution. The construction of the network discusses the organizing forms and resources that the activists have employed to pursue change. It is argued that it is important to focus on both bottom-up and top-down organizational processes and that the engaging of a network of operational actors is as important as ensuring the political support and commitment. The enactment of institutional arrangements refers to the efforts of activists to challenge and alter "political opportunity structures". The political opportunity structures are further seen as formal and informal political conditions that encourage and discourage the movement activity (Campbell, 2002). Finally, with insights from the technology innovation literature, Hargrave and Van de Ven discuss the collective action processes, which describe the contested political process through which new technologies emerge. Based on the dialectic theories, Hargrave and Van de Ven argue that innovation occurs when challengers gain sufficient power to confront and engage incumbents. Furthermore, Hargrave and Van de Ven argue that conflict, power and politics are central to the dialectical theory of change. Conflict is seen as the core generating mechanism of change, power is the necessary condition for the expression of conflict and political strategies and tactics are the means by which parties engage in conflict. Furthermore, the authors concur with Coser (1957), that conflict does not only generate new norms and institutions but it also stimulates economic and technological development.

3 METHODOLOGY

The case study presented here is the “Beer Living Lab” pilot project (Tan *et al.*, 2006). It falls within an interpretative, processual tradition (Markus and Robey, 1988, Walsham, 1993). The Beer LL is part of the EU-funded ITAIDE² research project. Its goal is to propose innovative solutions for eGovernment in the context of cross-border trade. Four European Living Labs provide the real-life settings in which the eCustoms solutions are developed and their broader influence on diffusion and adoption will be investigated. Whereas the driving players of each Living Lab are based in the same country, they also involve a broad international EU network.

In the Beer LL, the Dutch brewery is a large multi-national company exporting both within the EU and across European borders. The Dutch Tax and Customs is very proactively involved in the development of other EU-wide systems and members are involved in the EU strategy and legislation. The main technology provider is a large multi-national and its different sites in Europe were involved in the development of the Beer LL solution. A Dutch university has the role of principal investigator in the Beer LL. Furthermore, the Living Labs draw upon each others experiences and an international group of technology providers, businesses, government organizations and researchers take part in the project.

The main data collection was done in the period February - September 2006. Data were collected from different sources in order to gain a comprehensive picture of the case: participation in full-day brainstorming sessions, individual interviews with the Beer LL participants, observations and document analysis. Texts reviewed ranged from EU policy documents, EU documents on export of excise goods, internal reports of DTA, project reports from the Beer LL, to mention a few. Over the period of the data collection, 16 semi-structured interviews were carried out lasting between 1 and 3 hours each. The goal of the interviews was to gain a better grasp of the problem area and situations perceived by the different participants, and to obtain historical data about the pre-Beer LL stage. Based on the interviews, a report was produced which was sent back to the participants to verification and feedback. In addition 7 general meetings including all the Beer LL participants were attended, each lasting between half a day to one day. Two of the authors of this paper were actively involved in the Beer LL and maintained frequent (weekly) interactions with the other Beer LL participants via face-to-face meetings, telephone and e-mail. Almost all general Beer LL meetings and formal interviews were recorded and meeting notes or minutes of meetings were made. Due to the large number of meetings and recorded material, these were only partially transcribed. The combined detailed materials were used as a basis for the analysis.

Table 1 summarizes the Beer LL case in general terms of the collective action perspective on institutional change of Hargrave and Van de Ven (2006). The table reconfirms the idea that it is suitable to investigate the Beer LL using the collective action model, as dimensions relate closely to the developments that we observe in the case.

The goal of the data analysis was to see whether the model proposed by Hargrave and Van de Ven is applicable to explain some of the eCustoms developments that we observe in the Beer LL. To summarize, the theoretical constructs of the model are: *framing contests*, *construction of the network*, *enactment of institutional arrangements*, and *collective action processes*. For the data analysis we used these constructs as a ‘sensitizing device’ (Klein and Myers, 1999). We subsequently also used them to structure the presentation of the case analysis (see Section 4).

Our materials provided us both with “empirical flesh” and a manner in which we could investigate the usefulness of the theoretical model for understanding eCustoms innovations. In the analysis and the presentation of the findings, we have aimed to apply the guidelines of Klein and Myers (1999), though

² ITAIDE stands for “Information Technology for Adoption and Intelligent Design for E-Government” and is an EU-funded project from the 6th framework program.

space prevents an elaboration on this here. We acknowledge that investigating the innovation processes in the Beer Living Lab with one perspective necessarily entails ignoring others. During our analysis we identified examples where the constructs of the collective action model may sometimes be insufficient and we propose some further extensions. In our broader research context of the ITAIDE project, we have established a set of interrelated themes and theories that we combine to yield a more holistic perspective. That can give us elaborate insights in the nature of eCustoms innovations within the setting of a public-private partnership like the Living Labs (cf. Van de Ven and Poole, 1995). The paper presented here is part of this broader research setting.

Dimension	Collective action	The Beer Living Lab
Question	How do institutions emerge to facilitate or constrain social movements or technological innovations?	Our central research question How does the Beer LL emerge as a new power base (along with the EU and national administrations) to try to challenge the existing approaches for development of EU-wide Customs and Taxations systems.
Focal institutional actors	Networks of distributed and partisan actors in an inter-organizational field who are embedded in a collective process of creating or revising institutions	The Beer LL network consists of the following key players: - a large beer producer - the Dutch Tax and Customs - technology providers - a university The network works on revising/shaping the current rules and approaches to customs and excise procedures and the role of IS. It aims to challenge the current approach for EU-wide system development for cross-border trade.
Generative mechanism	Recognition of an institutional problem, barrier, or injustice among groups of social or technical entrepreneurs	Recognition that the current approach for EU-wide systems development does not bring the sufficient reduction of the administrative burden and benefits for neither the companies nor the public administration The Beer LL network works towards creating an IS-driven win-win situation
Process: event sequence	Collective political events dealing with processes of framing and mobilizing structures and opportunities for institutional reform	The collective political events dealing with processes of framing the Beer LL solution, mobilizing the wider network of supporters of the Beer LL ideas and mobilizing the current political opportunities to institutionalize the Beer LL solution. A confrontation between the EU approach (the thesis) and the alternative approach proposed by the Beer LL (the anti-thesis).
Outcome	Institutional precedent, a new or changed working rule, an institutional innovation	Not yet identified, because the Beer LL is still in process. In our analysis, we provide an overview of how the Beer LL currently develops towards a new synthesis.

Table 1. Characterization of the Beer LL along the dimensions of the collective action perspective on institutional change (adapted from Hardgrave and Van de Ven, 2006).

4 ANALYSIS OF THE BEER LIVING LAB

The focus in the Beer LL is to analyze how ICT solutions can support the administration of export of excise-free goods (excise goods are special taxed goods like alcohol and tobacco, but in certain situations companies do not have to pay the excise). EU reports indicate that there is huge fraud with the export of excise goods, amounting to approximately 8-9 % of the total annual excises (COM, 2006). It has been concluded that the current paper-based system does not work well and it is recommended that a computerized system is set up to deal with this (DG/TAXUD, 1998).

4.1 Thesis and anti-thesis: EU approach vs. Beer Living Lab approach

The European Commission has initiated the development of a new information system solution, the so-called Excise Movement and Control System (EMCS). The EMCS is intended to satisfy two goals: first, to be a high-level specification of a national database for excise data in each European country; second, to be an international message standard for exchanging data between all the EMCS compliant

systems in member states. The changes to the excise legislation to accommodate for the computerised system, as well as the EMCS system specifications are developed at EU level with representatives of the Customs and Tax offices from all 27 member states. Each member state administration (MSA) will need to implement an EMCS system according to the EU-defined specifications. In the Netherlands, there is already a project team in place at the Dutch Tax and Customs Administration (DTCA). The project members are involved at the EU level, making decisions about the legislation and requirements with respect to the EMCS, and they are responsible for the national implementation. The implementation is planned to be realized about 2 years from now (2009).

There are fundamental differences in the way the Beer LL approaches the problem, as well as the solution that it ultimately proposes. The EU applies a traditional top-down mode of regulation where businesses have no decision power. In contrast, in the Beer LL, businesses (a large beer producer), the authorities (Dutch Tax and Customs Administration, DTCA) and the technology providers work closely together and jointly contribute to the decision-making process.

While the EU approaches the problems by each time introducing a separate system for changed legislations, the way of thinking in the Beer LL is to follow a more holistic approach. The main starting point is that the information provided to the authorities is often to a large extent similar for each transaction. The Beer LL questions the assumption that you need a separate system for VAT, for transit, for excise etc. and argues that a company should supply the information once, and then access to this information can be provided to all the interested authorities. This solution is very much in line with the EU vision of Single Window. In principle the innovation could make the EMCS obsolete, but that is not the goal. We will elaborate on that next, when we discuss the key constructs of the collective action model in more detail.

4.2 Towards a synthesis: Collective action in the Beer LL

4.2.1 Framing contests

Framing contests call the attention on the creation and manipulation of the meaning of issues (Hargrave and Van de Ven, 2006). Previous research shows that framing can concern not only the outcomes or proposed solutions, but also the approach with which such outcomes are achieved (Maguire, 2002). In the Beer LL, framing contests are observed at two levels. The first one is related to the fundamental basis for the process of developing solutions and the second one is related to the proposed solution as a result of the development process.

It is argued in the Beer Living Lab context that the new EU-wide systems like EMCS simply replace paper with electronic messages and that this only leads to marginal improvements which are insufficient to solve the problem at hand. It is advocated that close collaboration with businesses is needed, in order to get real simplifications and benefits from introducing the technology. The Beer LL also questions the lack of decision power of the businesses in the development of such EU-wide systems.

The Beer LL engages in framing of the proposed solution as better than the EMCS. First, it offers to use one solution, with which businesses can communicate both with the authorities, as well as with other business partners; it is argued that such a solution is more general and has higher impact in reducing the administrative burden. Second, Beer LL partners also claim that the solution is better able to ensure the control and security over the movement of the goods (part of the solution is a secure container lock, which can signal unauthorized opening of the container). However, instead of framing the solution as making the EMCS obsolete, the Beer LL innovation is reframed as a supplementary solution which could be used by specific companies. It is propagated as a solution for various procedures (VAT, excise, etc), while EMCS handles one procedure only. This reframing is important as the Beer brewer first expressed opposition against the EMCS whereas DTCA, being involved in its

development, supported it. Now, they work towards the same goal again, especially where the expectations are that “high-end” organizations, i.e. large multi-nationals, will be allowed limited use of the EMCS. This way, the Beer LL attempts to work with the fact that the EMCS is a “running train” that cannot be stopped, but may be “jumped on”. We will come back to the framing contests later in this paper, to reflect on how they link to some of the other concepts of the collective action model.

4.2.2 *Construction of the network*

Hargrave and Van de Ven argue that the construction of the network is a second important issue that plays a key role in institutional innovation change processes, as it refers to the mobilizations of the resources for starting up a collective action. It is argued that the engagement of a network of operational actors is as important as ensuring the top level political support and commitment.

In the Beer LL we see the construction of a very complex network and mobilization of processes, dynamic and continuous in nature. In our initial analysis, we found that the general category “construction of networks” as proposed by Hargrave and Van de Ven is too abstract to help explain the developments observed in the Beer LL. Therefore we propose several additional analytic categories. First of all, we propose to use different levels of actors. Similar ideas for multi-level analysis have also been addressed in the IOS literature (e.g. Gregor and Johnston, 2002). For the purpose of this analysis we distinguish between three levels of analysis:

- 1) The level of the Beer LL, where only specific actors from different organizations are involved;
- 2) The level of the different organizations, which participate in the Beer LL;
- 3) The wider network, to which the organizations participating in the Beer LL have access.

Furthermore, to be able to trace the dynamics of the mobilization of actors, we propose to use the notion of horizontal and vertical interactions. We talk about a horizontal mobilization of networks when it concerns actors from the same levels and we talk about vertical mobilization, when the construction of the network crosses different levels. Let us provide some examples to illustrate the mobilization of the network in the Beer LL, using the concepts of horizontal and vertical interactions across the three levels.

The interaction between high-level decision-makers of the Technology Provider with high-level decision makers of the Beer producer is an example of a horizontal interaction at the level of the organizations involved in the Beer LL (level 2). These interactions are considered very important, as they attempt to ensure the commitment of the top management in the organizations involved in the Beer LL. This is of key importance for the adoption of the Beer LL solution in the organizations involved in the Beer LL and possibly in the wider commercial and governmental context.

We observed that the people from Dutch Tax and Customs Administration (DTCA) that are involved in the Beer LL have real commitment to spread the results from the Beer LL and to use them as a tool to bring change in the way DTCA works at the moment. They play a very active role in bringing awareness and getting the attention of people in the top management of DTCA. This is an example of vertical interaction between level 1 and level 2. Furthermore, good contacts and collaboration are being established with key players from DTCA, who are directly involved in the setting of the legislation and developing the systems at the EU level. For example direct interactions with people from the Directorate General for Customs and Taxation of the European Commission (TAXUD) have already been established. This illustrates one path of involvement through vertical interactions of the wider political network, across all three levels.

4.2.3 *Enactment of institutional arrangements*

The third element of the model is the enactment of institutional arrangements. One of the major concepts to which Hargrave and Van de Ven (2006) refer when they talk about enactment of institutional arrangements is political opportunism. Political opportunity structures can be viewed as

formal and informal political conditions that encourage, discourage, or in any way affect the movement activities (Campbell 2002). Reflecting on the Beer LL, we see the concept of political opportunity structures can very well capture and explain some of the developments. If we look at the EMCS developments, the European Commission opened several consultation rounds concerning the EMCS specifications and the EU directive on excise. However, the businesses have no decision power but only a consultative role. Though there is a sense of disappointment on the side of businesses about how their advice is taken into account, it does suggest favourable political conditions for change. Furthermore, if we look at the wider political context and some of the EU strategic reports, we can clearly see that the EU acknowledges the need for change in the direction of improved control and security and reduced administrative burden, by introducing Single window and AEO. This indicates that there are favourable political conditions which encourage innovation developments.

In the Beer LL we see a clear linkage between the political opportunity and the way the solution in the Beer LL was framed. By linking the framing of the solution to the political opportunities provided by the long-term EU goals, the Beer LL increases its chances of being heard and that the proposed Beer LL solution is considered to be relevant. Further, it has a strong position to claim that for specific types of companies (like AEO) the solution developed in the Beer LL is better suited than the solutions that are currently proposed and developed by the EU itself. As mentioned, this is toned down by reframing the Beer LL solution as complementary.

We consider that it is very important that the link between the concepts of framing contest and enactment of institutional arrangements is further explored.

4.2.4 *Collective action processes*

The fourth issue that Hargrave and Van de Ven (2006) address is the collective action processes. To recall, building on the technology innovation literature, the authors define the collective action processes as the contested political process through which new technologies emerge. At this moment we know how the solution is currently framed, we see how the network of actors is involved and we were able to discuss the political opportunity structures that exist at the moment. We can identify several efforts from the Beer LL participants to bring awareness about the solution. This is done by disseminating the Beer LL ideas via the existing networks of the Beer LL participants. The Beer LL participants also provide regular feedback to TAXUD about how it sees that the proposed solution can bring benefits for SW and AEO. The Beer LL solution is now in a pilot phase. We still have to see whether it will be adopted, first of all in the organizations which directly participated in the Beer LL and as a next step, whether this solution is adopted on a wider scale.

On the legal side, any adoption of the solution developed by the Beer LL will also depend on whether the EU legislation will be adjusted to accommodate for the changes. The EMCS is currently under development and its implementation is envisaged two years from now, around 2009. It may happen that the Beer LL remains as a pilot project and has only secondary effects, provoking new way of thinking about the problems by the different actors engaged within the constructed networks. In a more optimistic scenario, however, it may be possible that the legislation includes special provisions for AEOs. In such a case it may be possible for these companies with an AEO status not to implement the EMCS system but to ensure the provisioning of the information in an alternative way (where the Beer LL solution can be one alternative). Another option is that the innovation is used as an add-on to the EMCS. All these scenarios illustrate a synthesis, which is neither the thesis nor the anti-thesis, but something new.

With respect to the wider adoption in the business we can also only speculate at the moment. For example, interesting questions are: even if the legislation is adjusted, would the other brewers who were not involved in the Beer LL agree to adopt the solution as well? For instance, the network of the Brewers of Europe is very heterogeneous itself, with only a few large partners and numerous small breweries. Promotion of innovations throughout this network is not an easy task. And what about other companies that deal with export of other excise goods? This also seems to bring us back to the notion

of framing: Is the current framing of the Beer LL solution only targeting the EU or does it also contain a valuable message to the businesses? And perhaps if we aim for adoption in a network with such heterogeneous actors and interest (EU, national authorities, businesses), it may be necessary that the solution is framed in such a way so that it is considered relevant by the diversity of stakeholders? How could that be achieved? These are only a few questions, the exploration of which will remain for further research, when we actually observe the real adoption (or lack thereof) of the Beer LL solutions in practice.

4.3 Reflection on possible conflicts

The central dialectical conflict that we explore in this paper is the confrontation between the proposed EU approach and system (EMCS) against the alternative approach and solution proposed in the Beer LL and we are interested how a collective action is organized to bring the Beer LL innovation further. Despite the fact that this dialectic cycle is the main focus for our analysis, we observe that many other conflicts and dialectic cycles may be active, which may enable or hinder the collective action processes. We argue that these conflicts need to be identified and further considered. There may for instance be a conflict between the technology provider and the network of his competitors; a conflict between DTCA and the wider EU policies regulations; or a conflict between the beer producer involved in the Beer LL and the other beer producers. These types of conflicts may affect the adoption of the Beer LL solution beyond the network of organizations, involved in the development of the Beer LL solution. This illustrates that although we have one focal dialectic cycle that we want to follow, there may be other different types of conflicts.

What we observe in the Beer LL is that, similarly to the mobilization of the network, we need to use concepts which would allow us to make a finer-grained analysis of such possible conflicts. To do that, we propose that the levels, as well as the horizontal and vertical interaction analysis can help to identify the variety of such possible conflicts. The anticipation and mitigation of such conflicts may be an important factor to consider when mobilizing collective actions to bring institutional innovation.

5 CONCLUSIONS AND FURTHER RESEARCH

In this paper, we have provided an analysis of mobilizing a network for collective action in the context of eCustoms innovation for cross-border trade. We have discussed an extension of studies on eGovernment, in particular to those that look at public/private partnerships, providing an investigation on IS-based innovation and change using the dialectic perspective. We have made use of a novel theory, recently presented by Hargrave and Van de Ven (2006) to investigate developments in the setting of the Beer Living Lab, a pilot within the ITAIDE project. The collective action model proved helpful as a theoretical lens. It provided an important means for us to make sense of the empirical data. It also stimulated us to think and formulate a number of questions that can be explored further, in the context of our broader ITAIDE research as well as in other settings. Based on our analysis, we came to a number of insights which may be used to further develop the collective action model.

The data suggest that the Beer LL proposes approaches and solutions (the anti-thesis) that are quite different from EU approaches and proposed solutions (the thesis). We analyzed the processes for mobilization of collective action in the Beer LL to reach a new synthesis. Although there may be one focal dialectic cycle which is in the centre of the analysis here, at the same time we need to be aware that there may be many other dialectic cycles running at different levels, which may hinder or enable the collective action processes.

Based on the case, we also recommend to pay particular attention to the linkages between the different elements in the framework. For example concerning “framing contests” and “construction of networks”: the framing of the innovative solution may be very well suited to reach the EU officials and legislators, but not attractive for the business actors, which may affect the possible adoption of the

solution from the business actors. In the specific networks that we explored in the Beer LL it is not sufficient that only one type of actors commits to the solution. Rather, all the actors involved in the transaction will need to have at least some level of commitment in order to facilitate the change. The case also suggests a clear linkage between the categories “Framing contests” and “Political opportunity structure” (the latter being part of “Enactment of institutional arrangement”), future research may investigate the proposition that innovative solutions have a better chance to be institutionalized if they are properly framed according to the existing political opportunity structures.

We observed that the notion of construction of networks proposed by Hargrave and Van de Ven is very general. The distinction between the different levels in the network as well as the two types of interactions (within and across these levels) helps us to provide an additional insight for analyzing both conflicts and how the network is mobilized. This can help in the further exploration of the construction of networks. One can e.g. zoom in on analyzing only one specific actor and the strategies that this actor used in his vertical and horizontal interactions to contribute to the construction of the network. This type of more detailed studies can bring awareness of the types of strategies that the actors use or can use to mobilize the network.

All in all, we would like to conclude that the collective action model, building upon the notion of dialectics, appears to be a suitable alternative and novel perspective for analyzing eCustoms. We consider that it will be interesting for future research to elaborate on the collective action model, specifically on the interrelationships between the model’s different constructs. Future explorations of such linkages seem particularly promising as they may provide additional insight in strategic choices that can be made when mobilizing collective action for cross-border trade innovations.

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