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ARE NATIONAL SYSTEMS OF INNOVATION CONVERGING? THE CASE OF CEN/TS 16555

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Abstract

According to theories of internationalization and globalization, national systems of innovation (NIS) is in the process of convergence: They tend to become more ?similar? due to globalization of best practice undermining national specificities and institutional arrangements of innovation. In contrast, theories and analysis focusing on NIS predict that national systems of innovation will resist the homogenous pressure in globalization and remain relatively heterogeneous and thus promote and represent different institutional arrangements and their support of innovation processes within firms. Focusing on possibly institutional convergence, this paper analyzes the recent attempts to standardize innovation management at the European level as a de facto test of the degree of internationalization of National Innovation Systems. The paper demonstrates that the efforts made to establish a European ?best-practice? standard for innovation management has been unsuccessful. The main reason is the lack of common ground between European Countries, most members of the European Union, since the conceptions of innovation and innovation management differ too much across national systems of innovation. In line with theory of NIS robustness to internationalization , key actors including Central-European states and European companies, have been eager to retain their room to maneuver in relation to innovation management. This means that the European states still will have their national standard intact and the freedom to develop new standards more adaptable to national conditions, showcasing that NIS is not converging in this institutional domain and that NIS can successfully resist forces of convergence inherent in globalization.

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1. Introduction

In 2013 a new international standard for Innovation Management, also referred to as (CEN/TS 16555), was finalized for the first time in Europe by the European Committee for Standardization (CEN). The standard is designed to support innovation in organizations irrespective of their national origin, type, size or industry. The first part of the standard, (Innovation Management Systems) was published in 2013 and the 6 other parts of the standard will be finalized in 2014 (Strategic Intelligence Management, Innovation Thinking, Intellectual Property Management, Collaboration Management and Innovation and Management Assessment). Based on the experiences of CEN/TS 16555, member countries in ISO, the International Standardization Organization, are undertaking work to create a new international standard for innovation management with a global reach. While this work is on-going, and referred to as ISO/TC 279, these two developments, namely the creation of a new European standard for the management of innovation and attempts to create a global standard, suggest that the *standardization of innovation management* is a new phenomenon that technology managers and other key personnel responsible for the management of innovation in firms need to be aware about. Management standards, like ISO 9000, have been around for quite some time. The links between standards and innovation have also been examined before in the literature (e.g. Mangiarotti & Riillo, 2014) , what is new is the initiatives to standardize the management of innovation itself.

This CEN/TS 16555 standard is brand new and has only recently been designed after negotiations between 32 National members. Negotiations have gone on since 2008 and the end goal has been to “encourage more standards to support a culture of innovation in Europe”.¹ Is this new phenomenon important? Prior research on management standards, like the ISO series, has shown that standards are not another “management fad” that will quickly vanish. Quite on the contrary, such standards “represent a new management technology that may have a profound impact on the near-term evolution of management practice” (Uzumeri, 1997, p. 34). Supporting this view, it has been argued that management standards, for example ISO 9000, are a subset of important voluntary management

¹ CEN/TS 389 Business Plan, 2014-04-22. Innovation Management, Executive Summary.

practices. Their importance for management is illustrated by the fact that they have been referred to as administrative innovations in the literature (Naveh & Marcus, 2005). Thus, by being a voluntary management standard, arguable a new administrative innovation, in the context of innovation management, the CEN/TS 16555 standard has the potential to alter the way companies manage the process of innovation.

The purpose of this paper is to better understand this new phenomenon - the international standardization of the management of innovation and its potential to affect innovation management practices across national borders. According to theories of internationalization, national systems of innovation (NIS) are converging and developing a common approach towards innovation and innovation management across countries (see Carlsson, 2006). Based on this, one could predict that attempts to create international standards on innovation management would be relatively easy to establish.

In contrast, theories of NIS robustness predict that national systems of innovation will resist internationalization, and promote and apply different approaches to innovation and innovation management. According to the NIS robustness theory, one can therefore predict that it will be difficult to agree on international standards that in practice could lead to harmonization of NIS. The recent process within CEN – The European Committee for Standardization is in fact the first attempt to establish an international innovation management standard. We therefore argue that is an highly interesting and relevant case to study of the level of internationalization of NIS at the European level. To a substantial extent, the “battle” between the supranational attempt to create legally binding standardization institution of the very nature of innovation management (an innovation management standard setting national laws aside) and NIS, is in essence a de facto test of the extent to which NIS are converging in the institutional domain.

Further, because a new standard for innovation management may have dire consequences (positive and/or negative) for the ability of firms to innovate, it is important to understand its nature and why such a standard have emerged. We therefore aim to address the work of CEN and analyze the role of different NIS as driving forces creating and shaping the international standardization process of innovation management and the final result of the efforts made to establish an international standard of innovation management. We argue that a better understanding of the origins, nature and evolution of the CEN/TS 16555, is

important to fully grasp the implications of this new standard for theorizing and the practice of innovation management through standardization. Better understanding of how the new standard has come into existence can also aid managers/practitioners to “interpret” the standard and “translate it” to the everyday situation of their firm.

The research in this paper contributes to the literature in several ways. First, and foremost, we address the issue of to the extent to which NIS may be converging. This is an important issue to address as theorizing on NIS has been quite instrumental in the study of innovation. If the relevance of NIS is diminishing, this will have dire consequences for the management of innovation within firms. Somewhat surprisingly, this issue has only to a limited extent been addressed by scholars (Lundvall & Tomlinsson, 2000). For instance Carlsson (2006) argues in his review of the literature on internationalization of innovation systems simply argues that: “More research is clearly needed (p.60). While a few papers have focused on economic convergence and the openness of NIS to inflows and outflows of knowledge (e.g. Niosi & Bellon, 1994), our study focuses on institutional convergence, the most complex issue to deal with when analyzing convergence of NIS (Lundvall & Tomlinsson, 2000). It is argued that since national institutions is key to theorizing on the distinctiveness of NIS (e.g. Lundvall, 1993; Nelson, 1993), it is over core institutional change that the real battle about convergence will take place, between homogenous pressures inherent in globalization/internationalization and NIS resisting these. While this battle is “fought” in many institutional domains (Lundvall & Tomlinsson, 2000), it is argued that the possible establishment of a supra-national legally binding institution of how innovation should be managed within firms is a key de facto test of whether NIS is institutionally converging, or not.

A second contribution is that identify and discuss a completely new important phenomenon, the international standardization of the management of innovation. By doing so, we believe that this paper helps to open up a new field of research on the standardization of the management of innovation itself and in relation to the possible institutional convergence of NIS. As the research in our paper illustrates, this trend towards standardization of innovation management has only just begun. Plenty of opportunities for research will arise in the years to come, independent of whether or not these standardization attempts succeed or fail, as

both success and failure will have important implications for the management of innovation. Our paper is just a small start in this interesting new direction of research.

A third and related contribution is that our research help inform about to what extent innovation management can be effectively internationally standardized, reflecting current attempts within EU and also globally through ISO, to standardize the management of innovation, possibly in a way which set national standards aside. Third, our paper contributes to the literature on management standards by focusing on how countries respond to the standardization of innovation management. Prior research on management standards, especially on the ISO standards, has tended to adopt a firm centric view, neglecting the “bigger picture” in which countries negotiate over the standardization of management practices.

2. Prior research and theorizing

There is a small but increasingly literature examining the relationship between standards and innovation. For instance, Allen & Sriram (2000) concluded in their (conceptual) discussion of the literature, and through case studies, that although standards can inhibit innovation through the codification of obsolete technology, the QWERTY keyboard being an example, standards generally spur innovations directly through the codification of technological experience, forming a baseline that can be used to spur the emergence of new technologies.

Several studies have also analyzed the relationship between quality management standards, such as the ISO 9000 series, and measures of firm performance (including innovation). These studies have shown that the introduction of ISO 9000 standards has a significant impact on the internal processes within firms (Blind & C., 2003), that when firms become certified after the ISO 9000 standard they have a higher rate of growth (Terlaak & King, 2006), that firms adopting the ISO 9000 standards are significantly more innovative (especially within manufacturing) (Mangiarotti & Riillo, 2014). However studied have also questioned the relationship between standards and competitive advantage at the firm level (e.g., Blind & Thumm, 2004; Terziovski, Power, & Sohal, 2003).

While several studies have analyzed the relationship between standards and innovation as well as other measures of firm performance, no prior study (that the authors are aware of) has examined the international standardization of the management of innovation itself. The reason is simple: Until recently, the management of innovation has escaped international standardization. However, this is about to change. The work of CEN standard on innovation management, it is the first attempt by policymakers to explicitly codify and internationally standardize the management of innovation.

2.1 Theoretical expectations

To develop a standard is to develop a model that can be applied to any organization and anywhere, regardless of size, type of sector, product or service. For instance, management system standards provide a model to follow when setting up and operating a management system e.g., for managing innovation (ISO, 2014).

International institutions have an active role in developing, promoting and spreading certain policy models which are considered particularly promising. International standards are one such type of model which aims to promote policy convergence across national borders. International institutions, such as the institutions of the European Union including CEN, are composed by national representatives. In the case of CEN, the members are national standardization bodies (NSBs).² The NSBs function as a “one stop shop” for all stakeholders and the main point of access to the concerted system, which comprises of regional (European) and international (ISO) standardization. It is the responsibility of NSBs to implement European standards as national standards, to distribute and sell the implemented European standards and to withdraw any conflicting national standards (CEN/CENELEC, 2014). The national members of CEN are thus important actors in terms of developing and implementing international standards. For analytical purposes, we address the national delegations to CEN as representatives for National Systems of Innovation (NIS).

Theorizing on National Systems of Innovation (NIS) emphasize how the systemic nature of innovation is strongly shaped by country specific institutional frameworks, modes of

² The members are the national standardization bodies of the 28 European Union countries, the Former Yugoslav Republic of Macedonia, and Turkey plus three countries of the European Free Trade Association (Iceland, Norway and Switzerland).

governance, learning and interactions in the process of innovation (Lundvall, 1993). A NIS has been defined by Nelson (1993, p. 4) as “a set of institutions whose interactions determine the innovative performance of national firms”. Putting details in definitions aside, common to the theorizing on NIS is the idea that countries have specific institutional complementarities shaping interaction among institutions and governing how actors relate to each other, for instance between firms, between firms and actors in the external environment, but also between actors within the firm (Lundvall, 1993). This will give rise to a pattern and process of innovation that differs across countries.

For instance, research has shown that countries such as UK and USA have an institutional framework supporting the formation of generic skills among workers and radical innovation within firms, while workers in a country like Germany tend to invest in firm specific skills fostering incremental and continuous innovation and quality improvement within firms (Hall & Soskice, 2001).

While the innovation process and management of it may differ between countries, each mode of innovation management have its strengths and weaknesses and may be equally effective in driving economic growth, at the firm and country level (Hall & Soskice, 2001). However, due to complementarities between institutions within a country, it may be difficult to introduce institutional elements from a foreign NIS into a home NIS in an efficient way. The reason is that the change in one institutional domain may have repercussions, often unpredictable, radical and/or destructive, on the effectiveness of other institutional domains (Hall & Soskice, 2001). For instance, Freeman (1995) argues that in spite of increasing internationalization of innovation activities, national systems of innovations remains essential and change only very gradually as a result of path dependency. Many of the national specificities of each national system of innovation remain and prove to be resistant to change.

A supra-national management standard represents a “best-practice” view of how innovation should be managed, irrespective of differences in institutional and other contexts. According to Lundvall & Tomlinsson (2000): “The very idea of ‘best-practice’ is in contradiction with a ‘system’s approach’ since it neglects the fact that the systemic context will have a major effect upon what works and what does not work (p.4). Thus, a supranational “best-practice” innovation management standard represents a substantial threat to institutional diversity

underlying the operations and how innovation happen within different NIS. How may NIS be expected to act in the face of such an attempt to foster institutional convergence in the way innovation should be managed?

Since innovation is key to the economic performance and competitiveness of countries (Fagerberg et al, 2005), it may be expected that NIS will not willingly introduce (elements of) an institutional best-practice framework that can harm the innovativeness of their economy. Drawing on this type of NIS theorizing it could be expected that representatives of single NIS will either outright resist the standardization of the management of innovation and/or actively attempt to influence agenda setting and vital decisions during negotiation to secure a good match between standardization efforts and how their own NIS work in promoting innovation. Thus, representatives from the various NIS may be expected to set the interests of their NIS first, and only secondarily be concerned about standardization of innovation management as such. Furthermore, cooperative patterns at the international level will reflect the domestically derived preferences of large countries based on the assumption that market size determines who sets rules and standards. Furthermore, smaller countries tends to be exposed to stronger flows of scientific and technological knowledge and embodies technology crossing their borders, while larger countries appears to be more self-sufficient and less affected by international technological and scientific flows (Noisi and Bellon, 1994).

Based on this, one could expect that the representatives of the various national innovation systems, in this case the members of CEN, will try to influence agenda setting and vital decisions during negotiation to shape the standard according to core national interests. One will expect national representatives to align the standard to the practices of their NIS, in practice inhibiting an effective European standard for innovation. This could produce a result that favors the interests of the strongest strategic actors like the larger European countries and thus a standard that fit these particular national interests on the expense of others.

Alternatively, one could expect actors to behave according to a “logic of appropriateness”, emphasizing the importance of internationalization and the establishment of shared norms, meanings and identities as the fundamental logic of action. The values and preferences of actors develop within international institutions, for instance in European institutions like CEN, through “a relatively stable collection of practices and rules defining appropriate behavior for specific groups of actors in specific situations” (March & Olsen, 1989, p. 11).

Action will in other words become institutionalized through structures, rules and routines reflecting previous action/historical experience. Actors will therefore act in confidence that appropriate behavior according to the regulatory framework can be expected most of the time. Furthermore, experts are assumed to influence interests and contribute to international policy co-ordination by promoting certain meanings and norms (Haas, 1992). The social context will effect perceptions and interests of the actors and international cooperation will develop a shared “regulatory” culture. Pavitt and Patel (1999) e.g., point out that not only have the R & D activities of firms become increasingly internationalized, there are also indication that technology has become increasingly globalized through international networks. This implies that there is an increasing degree of interdependence between innovation systems in various countries and that this is leading to more coherent national innovation systems (Carlsson, 2006).

The fact that the EU is a highly integrated supranational scientific and technological block would lead us to expect a high likelihood of finding a common European approach also in terms of innovation management. Based on this, one could therefore expect that the national representatives will try to act according to perceived common goals that are difficult to oppose or disagree with. This will produce a final result that down plays national differences and favors a common European approach to innovation management.

The empirical literature on convergence of innovation systems is rather inconclusive on this subject matter, highlighting the need from more research on the (institutional) convergence of NIS. This is for instance seen in Carlssons (2006) review of the literature on internationalization of NIS. One the one hand the literature seems to agree that: “the evidence we have from empirical studies of internationalization of innovation systems is not extensive, but it seems to point uniformly to increasing interdependence of innovation systems in various countries” (p. 60). On the other hand, the same set of studies all focus on the fact that “national policies and institutions still play a crucial role (Carlsson, 2006, p. 60). The attempt to standardize a best-practice framework to how firms in Europe should manage innovation represents one crucial institutional domain that can be used as a case to learn more about whether NIS is in the process of institutional convergence, or whether NIS, when faced with institutional reform that may threaten their competitiveness, will successfully resist the attempt.

3. Methodology

To answer our research question, information on the processes surrounding the negotiations over the CEN standard between representatives for the various NIS is needed. This includes data on the position of the various NIS representatives in national delegations, data about the negotiation process and the end result or outcome of the negotiation process. A case study approach was therefore chosen in order to get in-depth knowledge of this unique case that at present is the only attempt to establish an international standard on innovation management by combining different data sources (Yin).

3.1. Data collection

Our methodological approach relies on the use of interviews and document studies. Interviews have been conducted with key actors, in this case members of national delegations to CEN which include representatives from National Standardization Bodies and other stakeholders included in national delegations. Normally, such representatives include actors from the business community, the scientific community, other key stakeholders such as trade unions and public policy institutions related to innovation. We argue that these delegations can be regarded as informants representing different NIS. We have selected 6 of the 33 national members and included three smaller and three larger country-NIS delegations. The selection has been done on the basis of initial information about who were the active and central actors in the negotiation process and also to include members that represent different types of NIS. In total the case study will include about 20 interviews with delegation from 3 smaller countries (the Nordics represented by Norway, Sweden and Denmark) and 3 NIS delegations from larger countries (Central/South-Europe, Spain, France and Germany). The purpose of the interviews has been to get deep and rich insight into the negotiation strategies and views on the standardization attempt among (representatives of) the various NIS involved in the standardization process, including how “far” the various NIS was prepared to go in the international standardization of innovation management. Such information is hard, if not impossible, to collect using other methods. A weakness of interview data is that informants may be influenced by the final outcome of the process when asked to comment on the processes happening during the process. The document studies attempt to avoid, at the very least to, reduce such hindsight bias in our analysis.

The archival data is used to gather information about the standardizations process in “real time”. Of particular importance is documents released by CEN before, during and after finalization of the standardization process as these documents reveal initial status and ambition as well as the final outcome achieved. In particular, documents released before and during the standardization process will enable us to get information about the standardizations process as “it unfolds”, information that are no possible to obtain through interviews with key stakeholders after finalization of the process as such data be by influenced by hindsight bias. The main documents studies are the mandate of the CEN process (The Business Plan), documents about the voting process during negotiation (to be confirmed/application to the CEN-secretariat), and the final documents adopted (the 7 parts of the CEN/TS16555). The work of the CEN committee CEN/TC 389 relates to a crucially important issue: Can the management of innovation be internationally standardized? Although the mandate and the scope of the CEN committee was based on the assumption that innovation management can be internationally standardized, at least at the European level, we will address this assumption by analyzing and comparing the scope of the mandate of the committee (CEN/TS 389) with the outcome, namely the technical specification CEN/TS 16555. Secondly, we will present and analyze the selected NIS perception of the CEN process and results and discuss the interview data against the findings from the document analysis.

In sum, interview and archival data will complement each other and strengthen the validity and reliability of the analysis.

4. Analyzing the initial ambitions and the end result

4.1 The mandate of the CEN committee

The European Unions (EU) economic growth strategy “Europe 2020” constitutes the background setting for the work in CEN (European Committee for Standardization) to standardize the management of innovation at the European level. CEN is one of three European standardization organizations, and is officially recognized by both EU and EFTA

(European Free Trade Association) as responsible for developing and defining voluntary standards at European level.

Building on previous policy discussions and documents where standardization has been highlighted as a key instrument for the promotion of innovation, such as the document “Towards an increased contribution from standardization to innovation in Europe” (COM, 2008), standardization of the management of innovation itself was seen as a way in which innovation could be increased and promoted in European firms, leading to an “innovation culture” that could help realize the ambitions goals in the Europe 2020 strategy.

With this as a background, a technical committee (TC) was formed in CEN, referred to as CEN/TC 389. The scope of the CEN/TC 389 was the “standardization of tools, methods, approaches, processes, that allows companies and organizations to establish and develop their innovation management, including all kinds of innovation and all the related aspects, as well as relations with R&D activities and with other innovation drivers” (CEN, 2014, p. 5).

4.2 The outcome: The CEN/TS 16555

On the 21th of April 2013 the first part of the technical specification (TS) CEN/TS 1655 was approved by CEN. CEN/TS 16555 will consist of 7 parts under the general title Innovation Management: “Innovation management system (part 1)”, “Strategic intelligence management (part 2)”, “Innovation thinking (part 3)”, “Intellectual property management (part 4)”, “Collaboration management (part 5)”, “Creativity management (part 6)” and “Innovation management assessment (part 7)”. Only part 1 “Innovation management system” has been officially approved, the remaining parts are in preparation and pending approval.

The goal of the technical specification (CEN/TS 16555) is to be a guide for organizations for how they can introduce, develop and maintain “a framework for systematic innovation management practices, an Innovation Management System (IMS)” (CEN/TS 16555-1, p.4). The validity of this technical specification is 3 years. Although all member countries of CEN are required to immediately announce the existence of the technical specification, it does not override national standards national standards can still be kept in force. After 2 years members countries of CEN will be requested to give their assessment of whether the

technical specification CEN/TS 16555 can be converted into a European Standard, which will override national legislation and conflicting national standards.

4.3 NIS perception of the CEN process

A central expected benefit of the work to be undertaken and finalized in the CEN/TC 389 committee was the development of “common European tools for innovation management”. The outcome, the technical specification CEN/TS 16555, is far from living up to this expected benefit, as “predicted” by theorizing about national systems of innovation. According to our informants, the committee (CEN/TC 389) was deeply troubled by different perspectives on core concepts including innovation, management and thus what innovation management is. The working groups struggled with agreeing on what activities and actors should be considered the most important in innovation processes, and thus what elements that has to be included in innovation management systems. Normally, standards start by giving an overview of basic terms. However, in the case of CEN/TS 16555, the committee was not been able to produce a final document presenting definitions. The fundamental problem of agreeing about innovation and innovation management haunted the process throughout and there were many difficult revision processes in the various working groups. Furthermore, the committee did not managed to make one integrated document. In fact, there were seven working groups which produced seven different documents representing different schools of thought about the management of innovation. Since members of the CEN/389 committee was appointed by national policymakers, the member countries in CEN, this finding is in line with theorizing on national systems of innovation where a prediction is that the management of innovation is very difficult to standardize internationally, simply because the process of innovation and the management of it differs across national systems of innovation.

Our informants informed us further about how differences across types of NIS made it hard to agree upon a well-defined innovation management system to be formalized in the form of a European Standard: In the committee work the Nordic countries emphasized the role of “on the ground” employees and the importance of strengthening cooperative ties between key personnel and operative management. The Nordic Model, characterizing the national

system of innovation in Norway, Finland, Sweden and Denmark, represents systems where there is close cooperation between employer and employee and strong egalitarian traditions. The Nordic view represented an «Employee- Driven Model for Innovation (EDI), where employees at all levels are perceived as innovation capital or assets (for an introduction to EDI, see e.g.: Kesting & Parm Ulhøy, 2010). Thus, representations of the Nordic National Systems of Innovation argued and worked for a standard of innovation management in line with the EDI model of innovation. Country representatives of Central-European countries like France and Germany promoted on the other hand a more top-down oriented perspectives on innovation management focusing on the vital role of top-level managers and their strategic decisions related to innovation, a way of managing innovation in firms that are supported by the institutions and practices of these national systems of innovation.

The disagreement about core issues among representatives for the different NIS involved in the committee work resulted in a fragmented technical specification without agreement of core concepts nor a basic common understanding of how innovation should be managed. This makes it hard, perhaps impossible, to outline an integrated European standard of innovation management. The 7 documents (or parts) of the technical specification illustrate this well. Although the technical specification is made up of the 7 documents (or parts referred to above), these 7 documents are at best loosely integrated with each other, and are sometimes at odds with each other. The final documents include aspects of several different perspectives on innovation management and do not synthesize them. For instance, Chapter 7.7 of Part I, «Strategic Human Relations», reflects some of the concerns of the Nordic countries focusing on the role of employees in innovation processes and decisions. Part II reflects the French model stressing the concept of so called intelligence management as a vital part of innovation management systems. The “intellectual balance” in the final documents has nevertheless been questioned, e.g., by representatives from the Nordic countries who were not convinced that the CEN-documents properly reflected their “bottom-up” perspectives, but instead gave priority to the role of top-managers and external relations of organizations.³

³ Personal Communication, Norwegian Representatives. 18 August and 17 September 2014.

Several countries also openly stated that they did not want the development of legally binding standards of innovation management at the European level. For instance, France and Germany opposed the development of a standard wanting to keep their existing national standards on innovation management operational. Sweden, Denmark and Norway have discussed the possibility to develop a Nordic (INSTA) standard. However, even this plan to formulate a Nordic standard, among a set of countries which share some institutional similarities, seem not to be realized as Denmark expressed its desire to produce an innovation handbook, while Sweden preferred to develop a common guideline, while Norway opted for the development of a national innovation standard⁴. Norway has decided to make a national standard based on CEN/TS 16555 emphasizing the need to make one integrated document and to adapt the wording to better suit the Norwegian context. The plan is to test-implement the CEN/TS 16555 and to use the results from the pilot study to develop a national standard that can have a higher chance of being adopted by SMBs in Norway.

Thus, national differences play out and “destroy” attempt to create standards of innovation management at a supra-national level. Such attempts seems to be strongly resisted by the national innovation systems and their representatives during negotiation of the standard. Although countries and their representatives can agree upon policy statements and objective, concerns for these issues are quickly thrown overboard when a standard in negotiation has the potential to threaten the way in which innovation is managed in the focal NIS.

In addition to the problem of finding a common intellectual ground, informants told us that the work of the CEN/TS 389 was troubled by the lack of a precise mandate with regard to what type of documents to produce. Normally the type of document to be produced should be clear and agreed on at the outset, preferably a CEN standard. However, if it is uncovered during the process that there is insufficient support for producing a standard, the parties may agree to publish a technical specification instead. CEN standards shall be given the status of national standard in all CEN member countries, who must therefore withdraw any conflicting national standards. Thus, a vital difference between the two types of documents

⁴ However, there is a plan to establish a common project to study the implementation of CEN/TS 16555 in the Nordic Countries.

is that while CEN standards will set aside all existing national standards, while technical specifications allow for national standards, even conflicting ones, to coexist and for new national standards to be developed.⁵ The final product of the process, the technical standard CEN/TS 16555, is thus a substantially weaker form of document where CEN member countries do not lose their freedom and sovereignty, a type of document that the members countries can safely ignore if they want to.

The process of attempting to formulate a CEN standard of innovation management at the European level, by inviting representations of the member countries in CEN to work together in a committee, thus ended with a non-legally binding technical specification for the member countries. Thus, the end result is a document with some guidelines that have few, if any, consequences for the member countries and for how innovation should be managed among the firms in the respective NIS. While the mandate and aim for the committee was in line with the expectations of the “logic of appropriateness”, this was quickly distorted by disagreement among representatives of the various NIS who promoted their own understanding of innovation management, based on country specific practices and institutional support of innovation and its management. The dis-similarities between the innovation systems of the countries involved in the attempt to standardize the management of innovation at the European level thus effectively lead to failure to produce a fully developed CEN standard of innovation management.

Our qualitative evidence and the actual outcome of the CEN work to attempt to standardize innovation management at the European level suggests that such international standardization attempts will be strongly resisted by National systems of Innovation and firms in those NIS wanting to protect the nature of a crucially firm capability, namely how they management innovation. However, the CEN work is not the final nail in the coffin for international attempts to standardize the management of innovation.

ISO has recently initiated work to standardize the management of innovation. This work will be based on the lessons learned from the CEN process. A main objective for ISO is to produce a common platform of terms that can make it easier to communicate and

⁵ See; <https://www.cen.eu/work/products/TS/Pages/default.aspx>, and; http://www.iso.org/iso/home/standards_development/deliverables-all.htm?type=ts

cooperate within the field of innovation management globally. The ambition is to make a template that can be used by companies or other organizations irrespective of type of sector or nationality. Based on the research in this paper the prospects for such an ISO standard, is rather gloomy. Adding more countries and firms and their respective national systems of innovation will arguably not make it easier to create a ISO standard of innovation management which is legacy binding for the member countries in ISO. Based on the research in this paper we predict that the most likely result of this standardization attempt will be a guideline in the form of a technical specification instead of a standard. The reason for this, similar to the situation in CEN, is that many of the members will resist the adoption of a standard that consequently annul existing national standards and block the possibility to development new national standards in the field of innovation management. However, analyzing this is a task for future research.

6. Conclusion

There is a recent trend towards the international standardization of the management of innovation, carried forward by international standards development organizations like CEN and ISO, with considerable supra-national backing by for instance the European Union. The research report in this article has focused on this new phenomenon, the attempt to internationally standardize the management of innovation. What we have asked is whether such initiatives can succeed. Can, in other words, the management of innovation be internationally standardized?

To learn more about this we have focused on a recent attempt by CEN, the European Standard Development Organization, to develop an innovation management standard at the European level. This standardization effort, also referred to as CEN/TS 16555, shows, in line with theories of NIS robustness to internationalization , that attempts to internationally standardize the management of innovation in the form of a standard has been very difficult. The reason is that because the process of innovation and the management of it differs across national systems of innovation, it will be hard, if not impossible, for countries to find enough “common ground” that can converted into an international standard the effectively promotes innovation and its management in organizations of all types and in all contexts.

National systems of innovation are found to be strongly resistant to the outside (supra-national) “injection” of innovation management practices which have little, or no, institutional support, either formally, or in informal practice and “the way innovation happen”, in the focal NIS.

A central task for further research is to analyze how companies relate to the technical specification CEN/TS 16555 and what effects it have, if any, on the firms voluntary adopting and implementing it. Further, some countries, like Norway, will attempt to run pilot studies aiming to document to what extent the technical specification CEN/TS 16555 can be modified and thereafter converted into a national standard. Learning more about these processes will no doubt be helpful as it keys directly into the issue of under which conditions and circumstances international attempts at the standardization of innovation management, even when it is rather unsuccessful, can possibly still have implications and shape the management of innovation in specific NIS.

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