

**Institutional co-entrepreneurship and the
transnationalisation of the EU aerospace sector: a
discourse analytic perspective**

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Institutional co-entrepreneurship and the transnationalisation of the EU aerospace sector: a discourse analytic perspective

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Abstract

The literature on institutional entrepreneurship often appears to fall short of accounting for how institutional entrepreneurs interact, the resources and competences they share, the conditions that enable such interactions and exchanges, and the emergence of co-entrepreneurship. Drawing from an empirical study of the emergence of the Advisory Council for Aeronautics Research in Europe (ACARE), as a trans-national infrastructure for the governance of the EU aerospace Research, Technology and Development, and leveraging discourse analytic perspective, the paper explores the conditions under which co-entrepreneurship emerges and the role of texts in this process. It is anticipated that the study and findings will contribute to nascent empirical studies of institutional entrepreneurship and trans-national governance.

Introduction

Sustained academic interest in both neo-institutionalism and the dynamics of trans-national institutions have, in recent times, given rise to novel research interests in such areas as institutional entrepreneurship and institutional work (Lawrence and Suddaby, 2007). Institutional entrepreneurs are "...organized actors who skillfully use institutional logics to create or change institutions, in order to realize an interest that they value highly" (Leca and Naccache, 2006:634). While the burgeoning literature on institutional entrepreneurship has continued to offer interesting and novel insights to account for the processes of institutional inertia and dynamics, which appear to be black-boxed before now, it has often presented institutional entrepreneurship as outcome of series of activities – involving creation, maintenance and disruption of institutional logics – strategically orchestrated by specific dominant and independent institutional actors. In this regard, the literature often applies a broad brush approach to institutional entrepreneurship with limited tendency to unpack the characteristics of institutional actors, their competences, resources, and skills (Fligstein, 1997). Although the literature also acknowledges that institutional entrepreneurship could involve multiple actors (Leca and Naccache, 2006), it appears to fall short of accounting for how these institutional actors interact, the resources and competences they share, and the conditions that enable such interaction and exchanges. In essence, it tends to take for granted that sometimes

institutional entrepreneurship requires some form of 'complementary assets' (borrowing from Teece, 1986).

The notion of complementarity is well established in the national business system literature (Whitley, 1999). The central principle of complementarity is the emphasis it places on the functional interdependence of activity sets within a given institutional context that enables an institutional configuration to perform effectively. According to the complementarity principle, these activity sets are not optimal in isolation. Borrowing from the complementarity principle, this paper introduces the concept of institutional co-entrepreneurship as a form of institutional change and or institutional sustenance arising from *collaborative actions* of independent institutional entrepreneurs¹. In this regard, co-entrepreneurship is different from both serial institutional entrepreneurship and collective entrepreneurship (Lounsbury, 1998) or collective action (Holm, 1995). Although collective entrepreneurship entails multiple actors, it does not necessarily imply or require specific actor-ship (i.e. asset specificity – Williamson 1985) neither does it suggest complementarity of resources. In this case, building a critical mass of the same resource does not imply complementarity and as such could best describe collective entrepreneurship and not co-entrepreneurship as used in this study. In addition, collective entrepreneurship often implies some form of power relation and dominance of a significant actor, which is not the case in co-entrepreneurship. A key question then is: what counts for institutional co-entrepreneurship and under what conditions does institutional co-entrepreneurship become necessary?

While the notion of dominant institutional actor-ship through collective entrepreneurship could be the case in some instances, this paper argues that trans-national institutional work is most likely to be implicated in interdependent co-entrepreneurship. Drawing from an empirical study of the emergence of the Advisory Council for Aeronautics Research in Europe (ACARE), as a trans-national infrastructure for the governance of the EU aerospace Research, Technology and Development, and leveraging discourse analytic perspective, the paper suggests that creating, maintaining and disrupting of institutional logics are often orchestrated by interdependent actors – in the form of co-entrepreneurship – as opposed to the conventional understanding that these activities are championed by dominant independent institutional actors. Aerospace is a knowledge intensive industry and as such relies heavily on Research, Technology and Development (RTD) to remain competitive, relevant and vibrant. The paper adopts an institutional entrepreneurship lens to examine how the European Commission (EC) and private actors are jointly transforming RTD in the European Union (EU) aerospace sector

¹ Here, independent institutional entrepreneurs refer to entrepreneurs that are able to initiate institutional changes without necessarily depending on resources from other actors within or outside an institutional context. National states would be good examples of such independent institutional entrepreneurs as well as some trans-national corporations. The constant competition between Sun and Microsoft in sponsorship of common technological standards (Garud et al., 2002) is also a good example of independent institutional entrepreneurship – at each point in time, either of the two would have been able to enact institutional change in isolation. They do not necessarily need each other to achieve their goals. Independent institutional entrepreneurs are also capable of serial entrepreneurship on their own.

from one dominated by nation states to one guided by a trans-national governance infrastructure – i.e. the Advisory Council for Aeronautics Research in Europe (ACARE). It problematises the EC and the private actors as institutional co-entrepreneurs with the ability to over time create, maintain and disrupt and even re-create the institutional logics upon which the EU aerospace is founded to meet their objectives for the sector. It does this by tracking the discourses employed by the EU and the private actors through texts since the late 1990s.

A benefit of this approach is that a discursive and interpretative account does not conceptualise institutions as something-out-there, but as an outcome of a negotiated enactment (Garud and Karnoe, 2003; Karnoe, 2004; Smircich and Stubbart, 1985) collective sense-making (Weick, 1995; Boyce, 1996) and linguistically constituted (Berger and Luckmann, 1966; Phillips et al., 2004; Phillips and Hardy, 2002). In this regard, the paper shifts attention to re-examine the practice of reifying institutions, organisational fields and practices in the realist tradition, which appears to be under-explored in the extant literature on institutionalization, and offers a complementary view to our understanding of institutional entrepreneurship, industry practices, isomorphism, and change from a socially constructed perspective, expressed in discourse. In addition, it suggests that trans-national institutional work is a by product of co-entrepreneurship and provides the opportunity to examine institutional entrepreneurship in a situation where no one entrepreneur possesses the necessary and exclusive resources, power and capabilities to change existing institutional logic and create new ones.

The first part of the paper discusses institutional entrepreneurship in the context of trans-national governance infrastructure, followed by a section on the link between discourses and institutions. The paper finally leverages text documents to examine the emergence of the Advisory Council for Aeronautics Research in Europe (ACARE) before discussing the findings and wrapping up. It is hoped that the study will enhance our understanding of the interactions amongst institutions, innovation and emergent interest in discourse analytic perspective (Lawrence and Suddaby, 2007).

Institutions and trans-nationalism

Institutions have been 'objects' of academic debates since the late 1960s primarily as a re-visitation to the understanding of the contextual embeddedness of social activities (Granovetter, 1985). Douglas and North (1980) describe institutions as 'the rules of the game' (North, 1990), operating at differentiable multiple levels – e.g. organisational field, nation state, and trans-national levels. At the organisational field level, studies of institutionalization, de-institutionalization and re-institutionalization (Ahmadjian & Robinson, 2001; Oliver, 1991, 1992) are regularly featured in contemporary management studies and organisational theory. The last couple of decades, for instance, have witnessed the blossoming of neo-institutionalism and structurationism, in particular. Neo-institutionalism, places emphasis on the study of organisational isomorphism, persistence and stability (Hirsch and Lounsbury, 1997;

DiMaggio and Powell, 1991) and seeks to demonstrate these across contexts and time, while structurationism attempts to restore the equivalence in significance attributed to both structure and agency in influencing either the stasis or dynamics of an organisational field (Giddens, 1984; Lounsbury, 2003; Kaplan, 2005). Major examples of this research orientation, in which firms and industry variables, are primary objects of study are mainly North American tradition and include such works as; DiMaggio and Powell, (1983); Granovetter, (1985); Scott (1987); Powell and DiMaggio (1991); etc. At this level, the interest is mainly to account for institutional isomorphism and recently on institutional change. It also focuses attention on intra-organisational inertia and dynamics (Feldman and Pentland, 2005) as well as changes in practices both at the firm and sectorial levels (Holm, 1995; Hoffman and Ventresca, 1999; Hoffman, 2001; Suddaby and Greenwood, 2005; Munir and Phillips, 2005).

Deriving mainly from the influence of European political economy and economic sociology is another stream of literature that goes beyond the organisational field level to account for national differences and embeddedness of economic actors. This stream of literature pays more attention to variations in national governance of economic activities and the level of integration of national systems to foster effectiveness at both the organisational field and firm levels. Such researches include those on varieties of capitalism (Hall and Soskice, 2001); national business systems (Whitley, 1998) and national systems of innovation (Lundvall, 1992; Nelson, 1993). However, this stream of research emphasises the role of private actors over and above the State, which is a marked departure from the traditional view that the State is a major actor in the distribution and re-distribution of economic gains and welfare in the national contexts (Schmidt, 2002). Herein, the level of State participation in management of the economy could be placed on a continuum running from high involvement (co-ordinated markets) to passive involvement (liberal economies). It is assumed that where the State is passive, the market system is strong and therefore has higher potentials of yielding prosperous outcomes. However, there have been calls for the come back of the State in economic coordination. The argument being that the State should not continue to play a passive role but should be active in setting the rules of the game. With the growth in strength of trans-national corporations (TNCs) and the tendency towards misuse of such powers and resources, the thinking nowadays is that market governance through self-governance of TNCs may not be completely adequate to address negative externalities arising from over dependence on the market system (Crouch, 2006). The State, it is argued plays a major role in internalisation of social costs (in form of externalities) arising from market transactions.

This line of argument de-emphasises the traditional divide between the roles of the state and the market in economic governance, and suggests a form of complementarity between the two, instead. With the ever expanding governance space spurred by globalisation, it is becoming obvious that nation States are unable to unilaterally ensure appropriate governance of economic activities, especially those driven by trans-national actors. Therefore, different nation states are continuously forging alliances and collaborations to ensure effective governance and sustained economic growth. A clear example of such trans-national governance entities include

the World Trade Organisation (WTO), NAFTA, United Nations, the World Bank, the European Union and other multinational institutions. Some of these governance infrastructures are championed by the nation States while others are driven by private interests (e.g. Extractive Industries Transparency Initiatives²).

Discursive Institutional Entrepreneurship

Lawrence and Suddaby (2007) broadly categorised institutional entrepreneurship into three 'life-cycle' activities: (a) creating, (b) maintaining and (c) disrupting. Creating entails initiating institutional changes through shifting institutional logics; maintaining involves ensuring a form of stability in an institutional context through reproduction of status quo; while disrupting involves attacking or undermining of mechanisms that lead members to comply with institutions through deinstitutionalisation. Lawrence and Suddaby also suggested that each of these activities is further sustained by series of other sub-activities, as shown in the table below:

² The Extractive Industries Transparency Initiative (EITI) supports improved governance in resource-rich countries through the verification and full publication of company payments and government revenues from oil, gas, and mining. The Initiative works to build multi-stakeholder partnerships in developing countries in order to increase the accountability of governments (<http://www.eitransparency.org/section/abouteiti>)

Creating	Maintaining	Disrupting
1. Advocacy – “the mobilization of political and regulatory support through direct and deliberate techniques of social suasion”	10. Enabling work – “the creation of rules that facilitate, supplement and support institutions”	16. Disconnecting sanctions/Rewards – disconnection of rewards and sanctions from some set of practices, technologies or rules.
2. Defining – “the construction of rule systems that confer status or identity, define boundaries of membership, or create status hierarchies within a field”	11. Policing – “ensuring compliance through enforcement, auditing and monitoring”	17. Disassociating moral foundations – disassociation of practice, rule or technology from its moral foundation as appropriate within a specific cultural context
3. Vesting – “institutional work directed toward the creation of rule structures that confer property rights”	12. Deterrence – “the threat of coercion to inculcate the conscious obedience of institutional actors”	18. Undermining assumptions and beliefs – “to disrupt institutions by undermining core assumptions and beliefs”
4. Constructing identities	13. Valorizing and demonizing – provision of especially positive and negative examples that illustrate the normative foundations of an institution, for public consumption	
5. Changing normative associations – “re-making the connections between sets of practices and the moral and cultural foundations for those practices”	14. Mythologizing – a focus on the past, rather than the present to preserve normative underpinnings of institutions through story	
6. Constructing normative networks – “construction of ... interorganizational connections through which practices become normatively sanctioned and which form the relevant peer group with respect to normative compliance, monitoring, and evaluation”	15. Embedding and routinizing – “actively infusing the normative foundations of an institution into the participants’ day to day routines and organizational practices”	
7. Mimicry – associating the new with the old in some way that eases adoption		
8. Theorizing – “the development and specification of abstract categories, and the elaboration of chains of cause and effect” (quoting Greenwood et al., 2002:60)		
9. Educating – “educating of actors in skills and knowledge necessary to support the new institution”		

Institutional entrepreneurship is a major shift from the mimetic isomorphism that dominated neo-institutional theory for a long time. It has become a powerful and complementary perspective to accounting for institutional change and inertia; and has at the same time necessitated complementary ways of explaining organisational change and inertia (Feldman and Pentland, 2003), strategy and strategizing (Whittington, 2006; Jarzabkowski, 2005), innovation and institutions (Swan et al., forthcoming), and diffusion and translation of ideas (Abrahamson, 1996; Scarbrough and Swan, 2001; Czarniawska and Joerges, 1996) in different sectors, organisations and national systems. However, most of these accounts have been critiqued for rather displaying realist understanding of institutions, and thus "...disconnecting them from the discursive practices that constitute them" (Phillips et al., 2004). It is suggested that discourse analytic perspective, which is embedded in the broader social constructivist epistemology, could complement this realist perspective since institutional vocabularies are the primary means by which institutional logics are articulate and manipulated (Suddaby and Greenwood, 2005:43).

The role of discourse in institutional work has featured heavily in broader social sciences – especially political science and sociology of social movements, as well as in language and communication sciences. Such social movements and social coalitions are to a large argued to be built on sophisticated discourses that mirrored the rhetoric and frames of their time (Snow et al., 2002; Snow and Benford, 1986). Discourses could be in form of texts, speeches, and conversations (Taylor et al., 1996). Discourses aim at creating, maintaining or disrupting institutional logic – i.e. "the underlying assumptions, deeply held, often unexamined, which form a framework within which reasoning takes place" (Horn, 1983:1). Frames and logics are essential components of the discourse repertoire of tools. Frame denotes "schemata of interpretation" that enable individuals "to locate, perceive, identify, and label" occurrences within their life space and the world at large (Goffman, 1974:21 cited in Snow et al., 1986), while "Logics enable actors to make sense of their ambiguous world by prescribing and proscribing actions. Action re-enacts institutional logics, making them durable" (Suddaby and Greenwood, 2005:38).

Vivien Schmidt is one of the major authors that have contributed to the understanding of institutions from a discursive perspective – in what she calls discursive institutionalism. According to her, "To gain a full understanding of the political dynamics of change", which is a form of institutional transformation, there is need to go beyond what she describes as "politics as usual" – "that is, beyond an understanding of the interplay of interests, institutions, and cultures that represent the background conditions to change, to examine what ideas and values are contained in a policy program, how policy elites construct their policy program, and how they convey it to the general public. All of this I consider under the rubric of policy discourse" (Schmidt, 2002:5). However, she acknowledges that:

Showing that discourse exerts causal influence is not simple, since the ideas articulated by a discourse cannot easily be separated from the interests which find expression through them, from the institutional interactions which shape their

expression, or from the cultural norms that frame them. And because of this discourse cannot in any case be seen as the case, or the independent variable, given that it rests, as it were, on top of the other variables. But it could be seen as one of a number of multiple causes or influences – and it may even be the very variable or added influence that makes the difference, by serving to overcome entrenched interests, institutional blockages, or cultural blinders to change. This is likely to do through the re-conceptualization of long-standing notions of self-interests, the reframing of institutional rules and cultural norms, and through the appeal to general interests over narrow self-interest (pp 5- 6).

Despite the hesitation expressed by Schmidt in establishing casual links between discourses and institutions, Philips et al. (2004) is one of the major step changes in management literature linking discourses directly to institutions. Social reality, it is argued, is constitutive of discourses. Without discourse, there is no social reality, and without understanding discourse, we cannot understand our reality, our experiences, or ourselves” (Phillips and Hardy, 2002). Drawing from Parker (1992), Phillips and Hardy (2002:3) define discourse “... as an interrelated set of texts, and the practices of their production, dissemination, and reception, that brings an object into being”. In other words, the goal of discourse analysis is to ascertain the constructive effects of discourse through the structured and systematic study of texts (Hardy, 2001; Phillips and Hardy, 2002). In this regard, language becomes fundamental to institutionalization and institutionalization occurs as actors interact and come to accept shared definitions of reality (Phillips et al., 2004). As such, it is through linguistic processes that definitions of reality are constituted (Berger & Luckmann, 1966). Continuing, Phillips et al., state that “...institutions, therefore, can be understood as products of the discursive activity that influences actions (p.635)”.

According to Phillips et al., actions inform the formative processes of institutionalisation and resultant institutions in turn inform, enable and constrain actions. This interactive process is mediated by texts and discourses. Actions generate corresponding texts; but not every action is capable of generating texts that are widely disseminated and consumed. Phillips theorises that only actions that require organisational sensemaking and that affect perceptions of organization’s legitimacy are more likely to result in the production of texts that are widely disseminated and consumed than actions that do not (p.642). The texts in turn inform discourses which in turn inform institutions. However, not every text is capable of becoming emdedded in discourses, except those “...that are produced by actors who are understood to have a legitimate right to speak, who have resource power or formal authority, or who are centrally located in a field” (644). In addition, “...texts that take the form of genres, which are recognizable, interpretable, and usable in other organizations and texts that draw on other texts within the discourse and on other well-established discourses are more likely to become embedded in discourse than texts that do not” (644) . In the same vein, they argue, not every discourse gives rise to institutions. Discourses that give rise to institutions are “coherent, structured and...supported by broader discourses and are not highly contested by competing discourses” (p.645).

Despite the elegance of these propositions, Phillips et al. fail to account for how institutional entrepreneurship is enacted through discourses. They presented the process of what might be described as discursive institutionalisation and under-emphasised the role of actors (i.e. institutional entrepreneurs) in the process. It could be possible for certain institutional entrepreneurs to enact the process independently under certain conditions – especially where the entrepreneur has the power, resources and legitimacy to produce consumable texts and discourses. However, in situations where the entrepreneur does not possess these capabilities in se, the entrepreneurs may need to access complementary resources (Tece, 1986) in executing their goals and objectives. This situation-specificity in which institutional entrepreneurship is bounded tends to be missed in the literature. A pertinent question that needs to be answered then is: what conditions and mix of entrepreneurial capabilities (resources, legitimacy, power, etc) enable institutional entrepreneurship across the different levels of institutional governance – i.e. firm level, organisational field level, national level and supra-national level? We draw on the case of ACARE to explore this question.

The emergence of the Advisory Council for Aeronautics Research in Europe (ACARE)

This section gives a narrative account of the emergence of ACARE as a result of this institutional co-entrepreneurship. The choice of aeronautics research in Europe is not arbitrary. As earlier stated, the emergence of mass travel due to increase in affluence after the World War II and the low probability of wars at such a scale, led to the growth of civil aviation and reduced emphasis on defence aviation. However, due to high cost of entry and high level of knowledge specialisation and integration required in the aerospace business, the sector is still to a large extent skewed towards monopolies – dominated by North America and Europe – and attracts significant level of national governments' attention. In the United Kingdom for instance, the aerospace sector is seen to be at the forefront of the knowledge economy and the source of national competitive advantage. It is second only to the pharmaceutical in its contribution to national GDP (xxxx). On the other side of the Atlantic, the aerospace sector (particularly Boeing and NASA) is both a source of national pride and confidence.

Following the approval of the European Commission³, the European Aeronautic Defence and Space Company (EADS) – owners of Airbus – emerged in 2000 as a trans-national strategy to reduce the dominance of the USA in global aerospace. Today, Airbus, as a significant part of EADS, has continued to withstand the competition favourably, albeit with some difficulties to sustain the lead over Boeing. Despite the good intentions behind the establishment of an EU aerospace firm, EADS and Airbus are occasionally caught in differences in national economic contexts. For example the liberalisation agenda adopted by the UK in the early 80s by the

³ <http://www.eads.net/800/en/eads/history/chronos/2000.html> visited May 25, 2007

conservatives was not adopted at the same pace by either Germany or France (Schmidt and Radaelli, 2004; Schmidt, 2002). These differences in economic coordination meant that EADS had to respond to the often conflicting demands of these varieties of capitalism (Hall and Soskice, 2001) – for example, it is easier to restructure labour ('hire and fire') in liberalised economies where labour is subject to the dynamics of the labour market (e.g. the UK) than in coordinated economies where the labour market is distorted through strong unions and employee representatives (e.g. France and Germany – Goyer, 2003). As such, Airbus does not always have the flexibility to make certain changes that would have enhanced performance due to institutional constraints, even when such changes are necessary. The need to minimise these economic coordination frictions have led to the establishment of such governance structures as the EU common market, EU parliament, and common monetary system. There is also the recognition that in order to remain competitive in the knowledge economy there is need to coordinate investments in research, technology and development (RTD) from a supra-national level to ensure that all nation States within the Union are carried along and skills developed evenly. One way to do this is through collaborative and trans-national research projects. This awareness is re-enforced by the Louis Michel – the current European Commissioner for Research when he said:

If we are to succeed in making the Union "the most dynamic and competitive knowledge-based economy in the world", we must renew and step up the support for transnational projects, basic research, major technological projects and research infrastructures. *Louis Michel (European Commissioner for Research, 2004 -)*

Investments in RTD would require complementary changes in institutional logic to assimilate new work and practices. One of such logics would be the traditional link between aerospace, national security and secrecy. On one hand, the European Commission – despite its powers, resources and legitimacy – can not initiate and execute these changes independently. Although it has some controls over the Member States to an extent, it is handicapped in interfering in the smooth running of the market. Moreover, the EU has received occasional criticisms and accusations from North America for its protective trade strategies – especially in its provision of soft loans to its aerospace sector, which are deemed to distort the market. On the other, EU Member States have what could be considered as global private players in the aerospace sector individually – e.g. Rolls-Royce and BAE Systems in the UK, Thales in France, Volvo Aero in Sweden, EADS in France, Spain, Germany and UK, and Finmeccanica in Italy to mention but a few. However, these firms, although powerful players in their own right, are not necessarily incentivised to invest optimally in research and development for such reasons as sunk costs, knowledge leakages and spill-over. They will need appropriate conditions to engage with each other in R&D collaboration. Research also shows that inter-firm collaboration is lowest in the aerospace sector in comparison with other sectors of similar size (Hagedoorn, 2002). Despite growth in number of inter-firm collaborations in recent times and interest they have generated (Morris and Hergert, 1987) in other industries; they are resisted and not yet easily accepted in the aerospace sector (cf. Haque and James-Moore, 2005; Dussauge and Garrette, 1995). This may not be

unconnected to the military antecedent of the sector, which is characterised by secrecy and non-cooperation. This creates a situation whereby institutional co-entrepreneurship, through sharing of complementary assets (Teece, 1986) amongst different potential institutional entrepreneurs becomes a possible way out, as reiterated below:

Although the crossover from military research into civil applications is far less than it was a few years ago, there are still areas where Europe will depend on national governments and individual companies for aeronautical research, rather than relying on a wider European strategy (Aerospace America, 2001)⁴.

In the late 1990s the then European Commissioner for Research – Phillippe Busquin – through his office commissioned what he called a “Group of Personalities” in the EU aerospace sector to craft a 30 year vision for the sector. The names of this Group of Personalities, their countries and roles are presented in the appendix section. The Group presented their report titled “EUROPEAN AERONAUTICS: A VISION FOR 2020” to the EU in January 2001, which is a way of revolutionising the sector and lies at the emergence of ACARE.

From text to institution: the European Aeronautics Vision

As already mentioned, discursive institutionalism is a growing aspect of the neo-institutionalism movement (Schmidt, 2002). In this section, we explore how the *European Aeronautics: A Vision for 2020* contributed to the establishment of the ACARE. We do not intend to establish any causal link between text and institution (Schmidt, 2002) but to apply interpretative reflexivity to the textual data – since reality is textually constituted (Phillips et al., 2004). We adopt the view that institutional co-entrepreneurship is a configuration of discourses embedded in texts, narratives, language and actions and in this regard, frames and rhetoric, as discourses, can be of help in understanding and unpacking the complex processes of creating, maintaining and disrupting of institutions. We triangulate information from the *European Aeronautics: A Vision for 2020* document with data from other sources: the internet, news materials, informal interviews, observations and experience (one of the co-authors has spent over 40 years within the sector and his experience provides useful insights in data interpretation). In all we generated estimated text documents of over 3,000 pages⁵. These texts were then thematically coded to unpack the characteristics of the text – since Phillips et al., 2004 argue that characteristics of texts determine whether they contribute to the institutionalisation process or not – the major actors involved, and the dominant discourses employed to orchestrate the emergence of the ACARE. This process generated the first level of data segments which were further coded for dominant frames and rhetoric employed. This second

⁴ <http://www.aiaa.org/aerospace/Article.cfm?issuetocid=83&ArchiveIssueID=13> visited May 15, 2007

⁵ This estimation is based on a loose google search for *European Aeronautics: A Vision for 2020* in the months of April – May, 2007, which returned over 196,000 hits.

level data coding provided opportunity to search for ‘deep structures’ on which institutional vocabularies and logics are founded⁶ (Suddaby and Greenwood, 2005).

Characteristics of the text⁷

The text is unique and meets almost all the conditions highlighted by Phillips et al. (2004) in which texts contribute to discourses and in turn inform institutions and actions. First and foremost, the text is a result of “actions that are novel or surprising and therefore require significant organizational sensemaking and actions that affect an organization’s legitimacy” (Phillips et al., 2004: 641). A summary of the document reads:

European Aeronautics: A Vision for 2020 sets the agenda for the European Aeronautics’ ambition to better serve society’s needs and strengthen its quest for global leadership. The vision has been developed by very senior personalities widely drawn from the industry and other stakeholders. They recommend strengthening and reorganising research and development efforts to improve competitiveness and provide a safe, efficient and environmentally friendly air transport system (emphasis in original).

It also meets the novelty criteria identified by Phillips et al. (2004). Creating a vision for the EU aeronautic sector is a new activity, which would add to the legitimacy of the sector as well as that of the European Commission. In this regard, the former European Commissioner for Research, Phillippe Busquin, said:

“ACARE is the first real step towards a European Research Area in aeronautics. The idea is to get everyone working together, developing the technologies that will answer the needs of our citizens and making Europe a world leader in aeronautics”⁸

Secondly, the text was produced by powerful, legitimate and ‘centrally located’ actors (Phillips et al., 2004:643) and in a form that is easily recognisable, interpretable and usable by other actors. This is, at least, evident in the number of internet hits generated by the text. As if to emphasise the power, legitimacy and centrality of the actors in the EU aerospace sector, the first page of the document bears the signatures of the “Group of Personalities” as shown in the figure below. This practice is inline with the prevalent understanding of signatures as quintessential mark of identity in “...our contemporary sign culture” (Goldman and Papsen, 1996:140). The layout of the document shows clearly indented summaries that aid reading and comprehension. This is evident in the fact that the document has become a household artefact in the aerospace community⁹.

⁶ This is not included in this paper and is a subject matter of another paper being developed. We have restricted analysis in this paper to only the first level data coding since we are mainly interested in understanding the conditions under which institutional co-entrepreneurship emerges.

⁷ The text under consideration here is the *European Aeronautics: A Vision for 2020* document upon which other documentations are generated.

⁸ http://ec.europa.eu/research/leaflets/aeronautics/page_25_en.html

⁹ A google search of the document on May 28, 2007 yielded over 200,000 hits



Group of Personalities


Pedro Argüelles


John Lumsden


Manfred Bischoff


Denis Ranque


Philippe Busquin


Søren Rasmussen


B.A.C. Droste


Paul Reutlinger


Sir Richard Evans


Sir Ralph Robins


Walter Kröll


Helena Terho


Jean-Luc Lagardère


Arne Wittlöv


Alberto Lina

Conditions for co-entrepreneurship

The aerospace sector is traditionally bound to national defence and security¹⁰. Notwithstanding, the European Commission has continued no play a significant role in forging a 'new' aerospace economy that transcends national interests, boundaries and specialisations. It has continued to wrestle the aerospace sector from the traditional grips of national defence sectors in the spirit of "all for one" and "one for all" philosophy of the European Union and the increasing competitive threats to the sector, especially from North America. The EC can exert influences on EU aerospace through multiple avenues – e.g. trade regulations, safety and environmental policies, taxation, internalisation of private R&D costs, et cetera (Neven et al., 1995). In the same vein, private actors within the sector exert significant influences in shaping and restructuring the sector mainly through mergers, acquisitions and national affiliations¹¹.

At the continental regional levels, Boeing controls the North American market while Airbus is a pan-European response to competition threats from North America. Despite its off and on triumph over Boeing, there is still room to grow European

¹⁰ Airbus was jointly held by EADS (80%) and BAE Systems (20%), Europe's two largest defence contractors. BAE Systems sold its 20% to EADS in 2006

aerospace sector beyond national interests and preferences in order for Airbus to remain effectively competitive to North American challenges – or more so to be able to contend when and if South East Asia enters the game. In addition, the emergence of mass travel after the World War II and the low probability of wars as such a scale, have led to the outpacing of the defence aviation business by civil aviation, which has come to assume a prominent role on a global scale. The increasing demand for travels due to increased affluence has further fuelled the market for civil aviation. Due to high cost of entry and high level of knowledge specialisation and integration required in the aerospace business, the sector is still to a large extent skewed towards monopolies – dominated by North America and Europe.

It is thought that a possible way to sustain competitiveness of the EU aerospace sector is to foster inter-firm collaboration – especially in R&T given the dispersed knowledge network of the sector. Inter-firm collaborations have become part of the contemporary world of work. Arguments for their emergence and prevalence have mainly been built on the need to maximize outcomes, minimise transaction cost, and suppress opportunistic behaviour, thereby minimizing risks (Nakamura et al., 1997:156). They have also been recognised as sources of knowledge exchange and learning (Borgatti and Cross, 2003; Dyer and Nobeoka, 2000; Ingham and Mothe, 1998) and used to mitigate externalities of knowledge spill-over, which could inhibit effective appropriation of economic value arising from private R&D investments, for instance. However, neither the European Union nor the private actors can independently sustain the competitiveness of the European aerospace sector against North America and other emergent contenders.

Phillips et al. (2004) framework, however, does not tell us what happens in a situation where the potential entrepreneurs have different but complementary assets, as in the case of the EU aerospace sector. Resources, power and legitimacy can also come from different dimensions. Some of the essential resources required in this case include: financial resources, knowledge resources, economic legitimacy, and political legitimacy. While the EU had financial resources and political legitimacy, it does not have the legitimacy of a private sector actor nor the knowledge resources required to disrupt and recreate the institutional logic and vocabularies. The situation would require institutional co-entrepreneurship between the EU and private actors to attain. In recognition of the importance of co-entrepreneurship in the EU aerospace sector, the emergent ACARE governance infrastructure requires that:

Members will be authoritative individuals with decision-making capability in the sector that are able to contribute with significant advice and to influence the stakeholders in planning research programmes (ACARE membership criteria #2)

In other words, the paper proposes that institutional co-entrepreneurship is likely to emerge in situations where potential independent institutional entrepreneurs would require complementary resources to achieve mutually beneficial outcomes.

Dominant discourses

Leca and Naccache (2006:634) succinctly captured the possible collaborative strategy in institutional entrepreneurial process when they wrote:

“... most institutional entrepreneurs do not have enough resources to act alone and must ensure the support of other actors.... To ensure such support, they must mobilize institutional logics that are likely to match potential allies’ interests and/or values. As such, the strategies used by institutional entrepreneurs are both political and cultural....The selection of institutional logics will depend on the allies whose support is sought. Institutional entrepreneurs will use institutional logics that are likely to be valued by those potential allies, because they support their values and/or their interests. In other words, institutional entrepreneurs will select the structures depending on the context, to ensure that the causal powers of the structures that they intend to use will work.

Institutional co-entrepreneurs, like other forms of institutional entrepreneurship, use different strategies to achieve their goals including discourses (Suddaby and Roy, 2005; Phillips et al., 2004). The discourses in the text are coherent and structured, as well as connected to other broader discourses relevant for the sector such as competitiveness, knowledge economy, collaborative advantage, sustainability and globalisation. Given the turbulence of the EU aerospace sector at the time, it could be argued that these discourses provided appropriate and matching frames (Leca and Naccache, 2006) to reconcile the interests of both the European Commission and the EU aerospace private sector actors, as shown in the table below:

Discourses	Evidence	Rationale
Competitiveness	Without European aeronautics, air travel over medium and long-haul routes would be almost completely dominated by US aircraft (p.2)	The European Commission's primary role is to support research that enhances the competitiveness of European industry and supports the Union's policies, including transport and environmental policy and many others. Nowhere is this approach more evident than in aeronautics where, under the Fifth Framework Programme for Research and Technological Development, a variety of aeronautics projects have been undertaken addressing the needs of both European industry and citizens.
Knowledge Economy	Aeronautics is a key asset for the future of Europe. Its direct contribution to economic prosperity is a measure of its success in pioneering the "knowledge society" that the European Union is now urgently seeking to achieve (p.9)	
Collaborative Advantage	<p>Collaborative networks for R&D have proliferated across borders, broader commercial relationships created and bonds established that have helped to pave the way for mergers, joint ventures and takeovers. Although restructuring of the sector in Europe has lagged behind the equivalent process in the United States, this process of consolidation is creating the platform for maintaining and enhancing its competitiveness over the next couple of decades (p.11)</p> <p>Facilitate greater integration of European, national and private research programmes so that maximum value is obtained from available funds (p.16)</p> <p>European aeronautics is now a cross-border industry, but too</p>	<p>The European aeronautics industry is one where almost all developments are done through collaborative work all along Europe. There is indeed still some progress to be made in this area and in particular in R&D where the strategy is often decided at a national level.</p> <p>Collaborative research in aeronautics has helped to establish Europe as the only serious competitor of the United States in that field. It not only benefits the continent but also reduces costs and enhances the capabilities and performance of private actors in the sector.</p>

Discourses	Evidence	Rationale
	<p data-bbox="436 337 1178 500">much of its research strategy is shaped within national borders without clear reference, or indeed, knowledge of what is happening elsewhere within the Union. The result is fragmentation when we need a more coherent picture, greater awareness and critical mass (p.32)</p> <p data-bbox="436 537 1178 667">Changes in national regulations that are currently obstacles to such partnerships, as well as an adaptation of the EU research instruments, might be required to allow for a better structure of the aeronautics research landscape in Europe (p.23)</p>	
Sustainability and Globalization	<p data-bbox="436 711 1178 808">The industry must rise to this challenge and confront the competitive pressures imposed on it both by the rapid development of globalisation and environmental needs (p.1)</p> <p data-bbox="436 846 1178 906">Meeting society's needs and winning global leadership (on cover page of the document)</p>	<p data-bbox="1199 711 1944 906">The link to sustainability and globalisation highlights current trends confronting not only the aerospace sector but humanity in general. Moreover, the aerospace sector has been discursively classified as one of the major threats to sustainability – particularly environmental and ecological sustainability – through emission of pollutants (Amaeshi and Crane, 2006).</p> <p data-bbox="1199 943 1944 1068">In addition, linking the report to meeting society's needs could be seen as a way of humanising the sector and making it less prone to negative discourses that would ultimately rub-off on the long term sustainability of firms in the sector.</p>

Among its conclusions, the Group stressed the need for a new Advisory Council for Aeronautics Research in Europe (ACARE) whose aim would be to develop and maintain a Strategic Research Agenda (SRA) for aeronautics in Europe. The Group recommends developing a long-term commitment by all stakeholders -the aeronautics industry, airlines, airports, air traffic control service providers, governments and regulators, research institutes and academia- to work in closer partnership and on the basis of consensus with the aim of strengthening and reorganising research and development efforts in Europe. This undertaking would optimise the aeronautics research potential within the Union, materialising the concept of a "European Research Area" in this industrial sector. The mission of ACARE is provided in the appendix section.

Discussion and Conclusion

The understanding of the European Union (EU) as an institutional entrepreneur is well established in the literature. Fligstein (2001:261), for instance, gives an account of how the European Commission acted as an institutional entrepreneur to avoid the impending political crisis that confronted the European Union in the early 1980s – caused by an inability of states to find a set of institutional arrangements that were in their collective interest – by producing the Single Market Program as a project, helping build a political coalition to support its basic tenets, and finally reorganising the preferences of state actors. In a similar direction of thought, Fligstein and Sweet (2002:1206) develop and test a theory of European integration which focuses on how the European Community, traders, organised interests, courts and the European Community's policy-making organs, over time, produce a self sustaining causal system that has driven the construction of the European market and polity. At a sub-regional level, Perkmann and Spicer (2007) illustrate how the EUREGIO and the Association of European Border Regions (AEBR) – an interest organization that played a substantial part in propagating the Euroregion model – over time engaged in collective institutional entrepreneurship to institutionalise cross-board cooperation among contiguous local or regional authorities across national borders in Europe.

The EU is a good example of a trans-national governance infrastructure, which has begun to attract fresh attention in both governance and institution literature – especially in political science and economic sociology (see Djelic and Quack, 2007 for details). This fresh attention is an attempt to bring back the State in the debate and understanding of institutions and institutional work (Schmidt, 2006). The relegation of the State as a passive actor and the instalment of the market system as an actor par excellence – i.e. in terms of driving economic growth – is one of the major corner stones of contemporary capitalism (Fligstein and Sweet, 2002). With the demise of communism and the persistent institutional complexities of our time (e.g. challenges in accounting for the simultaneous occurrence of institutional inertia and dynamism), the capitalist system has turned upon itself only to realise that it is also

unable to account for the expanding governance space at different levels of institutional configurations – i.e. organisational field, national and trans-national – and how these different levels interact. The dynamic interactions across these multilevel governance infrastructures remain a black-box (Djelic and Quack, 2007) in need of explanation from different schools of thought; one of which is the growing interest in accounting for institutionalization through discourse – the argument being that discourses, as talks and or texts, are precursors to institutions.

Based on a discourse analysis of texts produced by the different actors studied (i.e. European Commission, UK National Government, and Aerospace firms), 12 month period of ethnographic observations, shadowing and 40 years of work experience in the aerospace sector, the study provides insightful interpretations of the emergence of institutional co-entrepreneurship in the EU aerospace sector and the discursive role played by texts in this process. Findings from the study, for example, explain how inter-firm collaborations in new product development in the EU aerospace are created and maintained by the overarching discourse of ‘sustained competitiveness’ of the sector by such actors as the European Commission and the private actors. The study links this discourse of ‘sustained competitiveness’ to other major discourses on globalization, knowledge economy and the new way of work promoted by the European Commission. The success of the EU in fostering convergence and collaboration in EU aerospace sector is evident in its pioneering role in research and technology development (RTD) in the Euro region aerospace sector, especially through the Framework Programmes (FP) – the ENHANCE (Enhanced Aeronautical Concurrent Engineering) (FP5) and VIVACE (Value Improvement through a Virtual Aeronautical Collaborative Enterprise) (FP6) projects which have seen major actors in the sector come together to negotiate, agree, develop, standardise and harmonise work practices to ensure better integration and efficiency necessary for global competition in the aerospace sector are excellent exemplars of the EC role.

For instance, the VIVACE integrated research and technology project, which is coordinated by Airbus, was set up by the European Union with a budget of around 74 million euros, as one of its objectives to addressing its aeronautic Vision 2020 objectives. To foster collaboration in the sector, the budget is shared between 63 companies and institutions that are co-operating in the project. The goal of VIVACE is to achieve a 5% cost reduction in aircraft development and a 5% reduction in the development phase of a new aircraft design, combined with a contribution to a 30% reduction in the lead time and 50% reduction in development costs respectively for a new or derivative gas turbine. It is expected that VIVACE will deliver a virtual product design and validation platform, based on a distributed concurrent engineering methodology supporting the virtual enterprise. The main result of VIVACE will be an innovative Aeronautical Collaborative Design Environment and associated processes, models and methods. This environment, validated through concrete Use Cases, will help to design an aircraft and its engines, providing virtual products to the aeronautics supply chain operating in an extended enterprise, which has all the requested functionality and components for each phase of the product-engineering life cycle. It is also expected that the new approach of working developed by VIVACE would be made available to the aeronautics supply chain via

existing networks, information dissemination, training and technology transfer actions.

However, the changes in the European aerospace sector are co-entrepreneurial driven by the private sector actors and the European Commission. Given the nature of the industrial sector, it would be extremely difficult for each of the two co-entrepreneurs to initiate these changes independently. In the first instance, the sector is embedded in national defence infrastructure that would have been extremely difficult for the EU to access without cooperation of private actors in the different EU national spaces. On the other hand, the private actors, despite their market authority, lack the 'political authority' (Fligstein and Sweet, 2002) to foster such changes at the EU level. More so, the aerospace sector despite its strong network in the region (see figure below) is still struggling to harness the dispersed knowledge in its network effectively to compete with North America. As such, both the EU and the private actors need to work hand-in-hand to initiate changes in institutional logics. The changes only emerged from the complementarity of resources (Teece, 1986) between the co-entrepreneurs. Unfortunately, this issue of resource complementarity amongst institutional actors have received less attention in the extant literature on institutional entrepreneurship and institutional work. It is also a situation where the different entrepreneurs are equally powerful and capable but would require recombinant strategies (Crouch, 2005) and some degree of resource complementarity (Teece, 1986) to achieve their aims and objectives.

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Appendix

Group of Personalities List

ARGÜELLES	Pedro	Mr.	Chairman of the board and CEO, AENA	ES
BISCHOFF	Manfred	Mr.	Chairman of the supervisory board, DaimlerChrysler Aerospace AG	DE
BUSQUIN	Philippe	Mr.	EU Commissioner for Research (Chairman)	EU
DROSTE	B.A.C.	Mr.	Chairman of the board – NIVR , Netherlands Agency for Aerospace Programs	NL
EVANS	Richard	Sir	Chairman, BAE Systems	UK
KRÖLL	Walter	Mr.	Vorsitzender des Vorstandes, DLR , Deutsches Zentrum für Luft-und Raumfahrt e.V.	DE
LAGARDERE	Jean-Luc	Mr.	President, Groupe Lagardere	FR
LINA	Alberto	Mr.	Vice Chairman and CEO, Finmeccanica	IT
LUMSDEN	John	Mr.	Assistant Secretary, Department of Public Enterprise, Aviation Development and International Relations Division	IRL
RANQUE	Denis	Mr.	Chairman and CEO, Thomson-CSF	FR
RASMUSSEN	SØREN	Mr.	President and CEO, Rovsing Dynamics	DK
REUTLINGER	Paul	Mr.	CEO – S Air	CH
ROBINS	Ralph	Sir	Chairman Rolls-Royce plc	UK
TERHO	Helena	Ms.	Senior VP. Kone, Member of the Board, Finnair	FIN
WITTLÖV	Arne	Mr.	Executive Vice President, AB VOLVO	SW

ACARE Mission

1. ACARE's primary mission is to establish and carry forward a Strategic Research Agenda (SRA) that will influence all European stakeholders in the planning of research programmes, particularly national and EU programmes, in line with the Vision 2020 and the goals it identifies.
2. To this purpose, the activities of ACARE will include:
 - a) Launch and approve the SRA and update it periodically;
 - b) Make strategic and operational recommendations as well as commission studies for implementing the SRA and achieving the 2020 Vision;

- c) Evaluate the overall results and benefits of the SRA for Member States, the Commission and stakeholders groups (see point 5);
- d) Recommend measures for optimising the use of existing research infrastructures and achieving cost-effective investments;
- e) Recommend measures for improving educational policies to attract the scientists, engineers and other skills that the sector needs;
- f) Develop and implement a communications strategy to promote awareness of the SRA (within the stakeholders community as well as to larger public audiences) and to disseminate information on stakeholders' research programmes for facilitating consensus on priorities.