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**FELLOW TRAVELERS: AN ETHNOGRAPHIC STUDY OF  
THE DYNAMICS OF INTER-ORGANIZATIONAL  
COLLABORATION**

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## THEORETICAL BACKGROUND

### The wide lens

Recent debates on how companies push innovations have focused on opportunity scanning and control issues in so-called innovation ecosystems (Nambisan and Baron, 2012): innovation ecosystems are conceivable as ecologies formed by organizations and individuals that co-evolve through organizational learning and create new forms of value creation and appropriation by aligning investments (Williamson, De Meyer, 2012).

The theoretical basis of ecosystems date back to the work of Moore (1996) that points to the importance of collaboration as an overarching dynamic characterizing these ecologies; but whereas Moore's work is mostly focused on the organizing principles of ecosystems and on the general presumption that ecosystems can pop up in the economy from scratch (p. 106-136), little is known about their path-dependent dynamics of emergence into a complex, global and connected world<sup>1</sup>: do they emerge naturally or are the result of purposeful action driven by companies? In the latter case, what kind of organizational action is suitable and to what extent? Is there an array of collaborative practices and governance forms that firms are able to put place in such respect? Are ecosystems of innovation just a rhetorical formula or a novel form for organizing value networks and industries?

Two streams of research have been particularly vibrant in trying to elucidate either theoretically or empirically the scientific rigorousness of innovation or business ecosystems: in the strategy

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<sup>1</sup> Also, the biological origins of the term and its etymology (eco- from the Greek word "oikos", i.e. home/family, and – system from *sun*, i.e. together, and *stema*, i.e. to stand) makes it an allusive rhetoric tool that inspires hopeful gathering between different species of life.

literature, Adner (2006) has pointed to the need of aligning a company's innovation strategy with the array of entities composed by the product complementors and suppliers: indeed, when innovative products need to be complemented by supporting elements, the challenge for the focal firm goes beyond the traditional risks associated to innovative projects to include also the coordination of interdependencies and the risks associated to the integration of different parts of the value chain that are not under the focal firm's control (p. 2-3). Adner's caveat to companies is to consider cautiously the risks associated to innovation ecosystems: they must make sure that all partners are on time in delivering their offerings and this suggests a modest though realistic consideration of the orchestrating abilities of the focal firm (Iansiti and Levien, 2004). Firms can have more returns in delaying product development and let other players catch up (Adner, 2006), so to "bypass the risks of entering large markets by offering a simpler product to a smaller market (2006: 3)".

The resulting uncertainty must therefore be assessed through a "wide lens" that permits to scan and monitor the whole picture of supporting elements (Adner, 2012), thus shifting the rationales for value co-creation from bilateral exchanges (Brandeburger and Stuart, 1996) to the level of industry architecture (Jacobides, Knudsen, Augier, 2006). Following Adner's conceptualization Kapoor has noted that the construct has been used "as a way to make interdependencies more explicit" (Adner and Kapoor, 2010) and in approaches aimed to "understand the coordination among partners in exchange networks that are characterized by simultaneous cooperation and competition (Brandeburger and Nalebuff, 1996)". He studied extensively the challenges related to the management of interdependencies in the semiconductor industry (Adner and Kapoor, 2010) and distinguished between components (upstream or supplier firms) and complements (downstream or complementors) (p. 309).

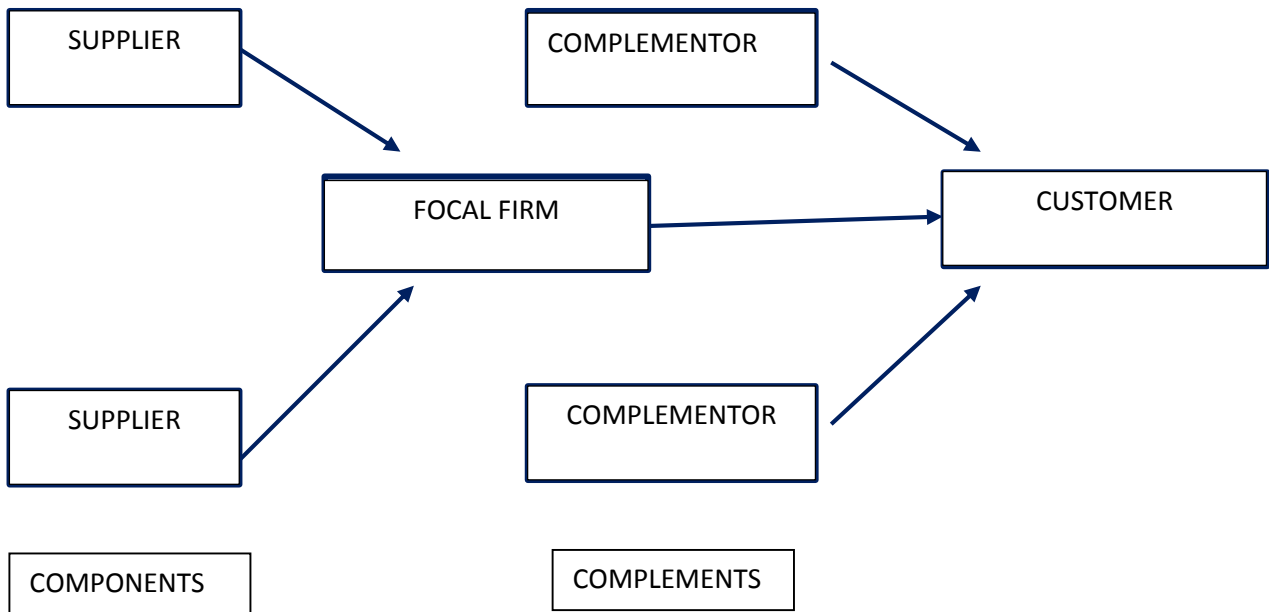


Figure 1. Generic schema of an ecosystem (from Adner and Kapoor, 2010)

On the other side, the ecosystem construct is much in debt with the platform strategy literature (Gawer and Cusumano, 2002; Gawer and Cusumano, 2008), where the ecosystem is conceived as an intermediate ecology between the supply chain and the industry: therefore, at a broader level in respect to how Adner and Kapoor depict them and closer to a network form of organizing. The platform is a “shared set of core technologies and tech standards underlying an organizational *field* that support value co-creation through specialization and complementary offerings (Thomas, Autio, Gann, 2014).” Indeed, in their recent literature review on platforms and architectural advantage, Thomas et al. (2014) have stressed the sub-division of the platform studies in four streams: platforms can refer to different layers of organizational focus: the internal transfer platform, the supply chain platform, the 2-sided markets platform and the platform-as-ecosystem. For each layer there is a different logic of value generation:

- in the internal transfer the platform is used to coordinate the transactions internalized within the organization; the platform is devoted to control the internal transfer of exchanges in a logic of minimization of the costs of transaction (Coase, 1937; Williamson, 1985);
- in the supply chain platform the logic is the optimization of the economies of scale and scope and the platform serves to organize the array of external actors composing the firm's supply chain;
- in the 2-sided markets platform the logic is to govern the economies of complementarity that characterize 2-sided or multi-sided markets (Eisenmann, Parker and Van Alstyne, 2006) and such loose orientation is connected to the flexibility required to drive economies of innovation;
- the platform-as-ecosystem: the more external orientation of platforms is connected to ecosystems and the authors underline that research on this platform conceptualization stresses the possibility for platforms to take advantage of all three previous logics of value creation, i.e. transaction, production and innovation.

As depicted in Figure 2 taken from Thomas et al. (2014), the platform-as-ecosystem is at the center of the different layers: the fact that it's at the center must not be equivocated, because the sense of the model is to stress the fact that studies of platform-as-ecosystems contain also elements of the different and more internally focused systems of relations and exchanges.



**FIGURE 2**  
**Model of Architectural Leverage**

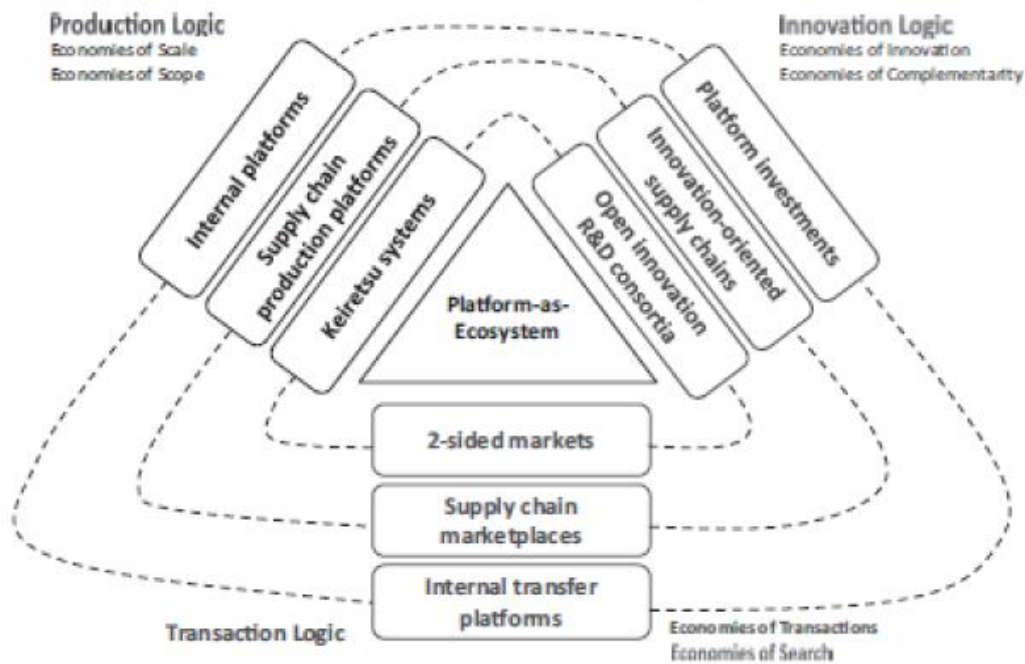


Figure 2. Architectural leverage and platform-as-ecosystem (Thomas, Autio, Gann, 2014)

Thus, the model resulting from this study solves many of the contradictory uses of the ecosystem construct that afflicted studies on the topic. Thomas et al. focus their assessment of the ecosystem construct on the issue of control of the interdependencies more explicitly, although for them what makes ecosystems especially puzzling is the combination of many different and contrasting logics: indeed, studies on ecosystems include elements of product families' platforms such as architectural design, interfaces and modularity (Baldwin and Clark, 2000) and elements of platforms that conceive the platform as a hub of exchange for two- or multi-sided markets (Eisenmann, Parker and Van Alstyne, 2006). How the combination of these different logics within the same strategy is conceptualized? Thomas et al. (2014) underline the possibility to “cumulate” them in a strategy of

architectural advantage: this means that the possibility to obtain disproportionate returns, given by economies of scale/scope, economies of complementarity or manipulation of pricing in market intermediation, is strongly associated to the level of openness of the architecture that ultimately defines what is the external horizon of the platform strategy and who are the external actors involved.

### **The issue of openness and knowledge**

Paradoxically, openness means involvement of third parties and disaggregation of the value chain that becomes structured in a way different from how it used to be conceived previously by industry players: therefore, the emphasis on collaboration and openness that is normally associated to ecosystems obscures the cold fact that concerns over control and knowledge appropriation are at the heart of the hurdles experienced by ecosystem participants. This becomes particularly problematic in knowledge-based industries where the control of the intellectual property generated is crucial and the pace of technological innovation particularly high by definition. Indeed, Leten, Vanhaverbeke, Roijackers, Clerix and Van Helleputte's work (2013) on the mechanisms of knowledge control and appropriation in the nanotechnology field has pointed to the fundamental role of the Intellectual Property model in determining and guiding the logics of value co-creation and appropriation in multi-party settings: through Industry affiliation programs the IMEC research center induces collaboration from partners but its novel feature is constituted by the management of the foreground Intellectual Property that is generated during the program: thanks to an *ex-ante* bilateral agreement between the participant and the research center, the foreground knowledge is identified and distinguished from the background knowledge, whose ownership is not associated to increasing returns (p. 56, Leten et al., 2013); during the program, part of the knowledge generated is retained

by the center in order to become background and, once the affiliation program is concluded, made available to the whole ecosystem of partners of IMEC (p. 56, Leten et al., 2013).

Two theoretical implications arise from the dynamics of collaboration harnessed by the IP model: first, the catalyzing object in ecosystems is likely to be the manipulation and refinement of knowledge in a broad sense, so that the knowledge can be embodied in technological artifacts but can be also relational or contextual knowledge; second, although the IP model is highly informative on how to regulate appropriation concerns, the IMEC research center basically advocates redistribution in the ecosystem from a semi-regulator stance, therefore embodying the public interest for an industry or field of knowledge to activate initiatives of value co-creation and appropriation. Little is known about the operations of a private entity claiming such leadership from a self-interested position and the possible options: the basic motivation of this work is that many insights can be explored when a focal firm relinquishes control over an established chain of suppliers and complementors. Such operation is called in managerial jargon “opening up the ecosystem” and underlines the willingness of the focal firm to modify its strategy toward a platform-oriented one. Why should a firm open up its precious stock of partners? For open innovation theorists this can be a wise strategy if the knowledge made available can be complemented externally in order to ensure value co-creation; very often this is done because the firm has found itself trapped in an industry bottleneck where the price to pay for the high commoditization of the offering is particularly severe.

To sum up, the sharing of the knowledge created is often the unique way to generate momentum at the system level, that must be “opened up” with a strong emphasis on exploration of novel issues rather than operational ones. In exploration, activities are inherently inefficient (March, 1962) and

control rests on sociological and institutional devices rather than property rights (Thomas et al., 2014).

The hurdles related to learning and the management of the knowledge created in inter-organizational projects of value co-creation led to consider the following research questions: what are the micro-dynamics of collaboration when the boundary between the collective goal and the individual interest is fuzzy and ill-defined? We try to clarify theoretically this research question by investigating empirically the individual and group level dynamics that characterize projects of collaboration for value co-creation. Also, what are the connecting practices performed by participants? In considering such practices, we try to understand how much these can be used as paths for value co-creation and what type of knowledge is eventually recombined. Finally, how and what type of order emerge? In tackling a more structural puzzle on ecosystems of innovation, we try to develop a framework that can integrate the micro-dynamics investigated and the connecting practices with the whole industrial and technological fields of reference of the present research. The potential contribution of the findings rests on building theory of strategy making at the interorganizational level: following Burgelman's work and the extensive corpus of knowledge on intra-corporate venturing the present work adapts the strategic initiative construct to an interorganizational, though collaborative, setting.

## **Logic of the research and structure of the thesis**

Therefore, the problematic we stress is somewhat antecedent to Adner's caveat on time of entrance described at the beginning of the chapter: our concern is directed to understand what are the micro-dynamics characterizing the convergence of value co-creators at the ecosystem level and what are the practices used to coordinate and control their actions.

We think that to understand such dynamics is necessary not only the consideration of Adner's caveat cited at the beginning of the chapter but also to scrutinize the activities of would-be partners from an episode that constitutes a potential inception of an "open ecosystem" strategy: by inception we mean one or more episodes that are able to attract the interests of different parties toward a market opportunity. In this sense we are not excluding its eventual path-dependent or serendipitous origin nor the possibility that the object around which the interests gravitate is simply an idea or the outcome of many years of work in the lab, eventually retrieved and put in the marketplace (Cattani, 2006): instead, and questioning Moore's conceptual basis of ecosystems popping up from nowhere, we consider both the voluntary side of such strategy and its co-evolutionary origin at the industrial level.

From a theoretical point of view, the stream of research mostly pointing to a potential co-existence of autonomous and induced behavior in processes of change is related to the work of strategy making scholars (Burgelman, 1983, 1991, Noda and Bower, 1996, Floyd and Lane, 2000, Lovas and Ghoshal, 2000, Canales, 2015). A central tenet of this stream is that the strategy process is enacted to link the organizational action to the environment through a combination of autonomous and induced behavior (Mintzberg and Waters, 1985): the outcomes of the strategy process will either be routines (Nelson and Winter, 1982), in which inertial activities are seen as driving forces

of action, and capabilities, which emphasize the learning and forward-looking drivers of action (Gavetti and Levinthal, 2000). Capabilities are the resources mostly apt to typify selection, especially when “dynamic” (Teece et al., 1997, Winter, 2003), and determine strategic renewal, that is “mindful” or conscious adaptation (Floyd and Wooldridge, 2000). However, challenging Burgelman’s skepticism over the ability of inertial forces to act as a source of renewal, this stream of research has underlined the co-existence of autonomous and induced behavior within the same strategy process, as suggested by Mintzberg and Waters (1985). Organizational renewal is therefore seen as an alignment of the organization with the environment and its demands, occurring through successive convergent iterations towards a complementarity of stability and change (Burgelman, 1996; Floyd and Wooldridge, 2000; Nelson and Winter, 1982, Noda and Bower, 1996). A second tenet of the strategy making stream is the concept of strategic intent, that is the wish or organizational goal set up and formulated by top management and towards which the organizational action is planned and enacted for, with the intervening role of the strategy making process enlarging the view of the analysis to comprehend both planning and execution. As found by Lovas and Ghoshal (2000) and Canales (2015), the strategic intent “constitutes a selection mechanism and the selection operated feeds back validity to the strategic intent (Canales, 2015, p. 4-5).” Finally, a construct parallel but different from the concept of strategic intent identified by strategy process scholars is the so-called organizing principle: this is seen as the *ex-post* rationalization of the selection mechanism that makes the members of the organization capable to express explicitly “what do we do, as an organization”.

At inception of co-creation projects, and differently from space of interaction where different fields and different kinds of knowledge have an encounter such as “Interstitial spaces” (Furnari, 2013), private parties’ interests over the object are competing and kept behind the scenes: what’s on stage

is the fact that different interests are gravitating around the same issue/opportunity. Once the interests holders decide to collaborate a minimal agreement between the parties determines the onset of an **umbrella strategy** (Mintzberg and Waters, 1985). We expect a loose though minimal structure of relations and governance stemming from the agreement which will be likely to focus on the “meeting of multiple demands simultaneously” (Poole and Van de Ven, 1989) in the making. Indeed, as suggested by the work of Wareham, Fox and Cano Giner (2014), one of the most intriguing features of ecosystems is the potential orchestration of different partners under the same strategic intent: orchestration means “activation” of performers and this is usually done by turning latent issues salient and worth of attention (Ocasio, 1997). At the same time, we expect the agreement to act literally like an umbrella in order to bound a space for collaboration and shield it from environmental erosion such as inter-organizational distrust and fierce competition.

We hypothesize that within an umbrella strategy actors’ initiatives can be particularly **disconnected** one with the other because flourishing from private interests highly heterogeneous (these are the blue arrows in the figure below); at the same time, they are apparently converging around one or more issue: as a result, they can be conceptualized within the boundaries of an **umbrella strategy** (the black lines containing the flow of unconnected strategies).

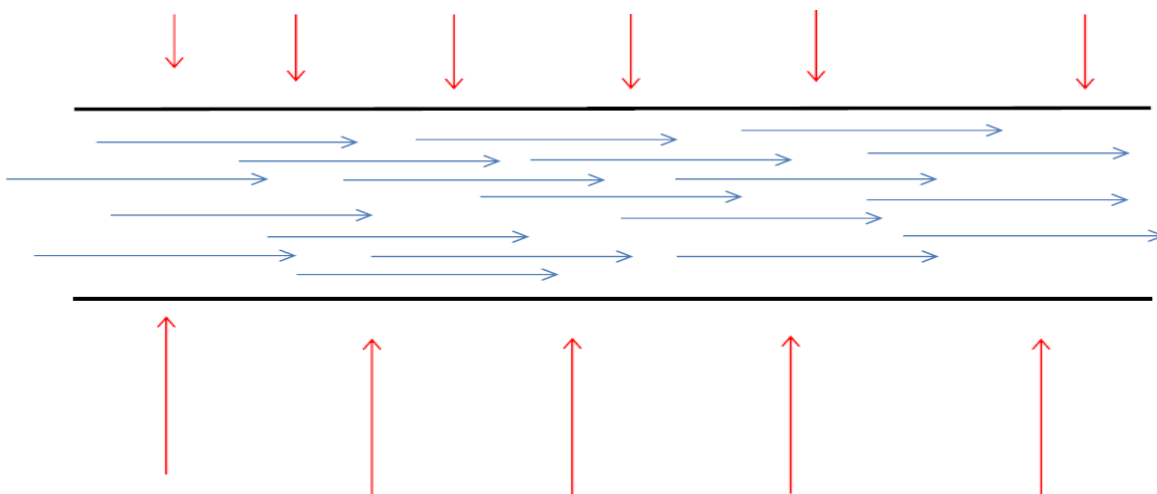


Figure 3. The flow of strategy making (adapted from Mintzberg and Waters, 1985)



A third element is given by the **environment** that imposes on an evolutionary basis modifications to the boundaries of the umbrella, either expanding or restricting the opportunity space created by the umbrella (these are the red lines touching the black boundaries of the umbrella).

In this part of the work the aim is to understand what influences the organizing principle in order to build theory on the strategy making literature at the inter-organizational level: the main difference with this stream of literature is that the focus of the present work is at the inter-organizational level and aimed to understand dynamics of value co-creation at such level, while the traditional focus of the strategy making stream is on intra-corporate venturing. Thus, the theoretical and analytical leap is done by adding to the existing knowledge of the strategy making literature a model of nested interests: this can help us in understanding the genesis of the selection mechanism in inter-organizational projects of co-creation, the mutation of the organizing principle and the process of organizational change entailed. We argue that a drift of the organizing principle may occur not only because of the constructive confrontation that usually drives the selection of initiatives but also because the knowledge allowing adaptation may be highly heterogeneous; this can lead to a balkanized process of learning that fuels the ambiguity over the organizing principle and its adaptability to members' interests.

In the second part, we ground our reasoning under a co-evolutionary logic of technological convergence: indeed, many dynamics of innovation occur through recombination of pre-existing knowledge bases that tend to survive processes of vertical disintegration or commodification of industries. Therefore, although companies and managers are not inert in the structuration of the task environment, engaging an opportunity race may be perceived as necessary only when basic assumptions on firm's organizing principles or ability to survive are challenged by exogenous processes of creative destruction (Schumpeter, 1934). Burgelman and Grove (1996) have referred to

that moment of disruption in terms of “strategic inflection point”: this may be related to competence-enhancing or competence-destroying technological change but our interest is more on the fact that it entails a change in how oneself role is conceived within the evolving inter-organizational environment. Therefore, the presentation of such co-evolutionary logic is purposed to frame through a wider and dynamic perspective the opportunity space in highly unstable fields such as the one of Telecommunications where the importance of mediating technologies makes network externalities particularly relevant and likely to drive attempts of orchestration of many actors at the same time.

Finally, a model capable to explain the most relevant effect of the dynamics studied is proposed, along with a discussion and the implications for each research question posed. In particular, we try to develop a model that can explain how the organizing principle in collaborative settings is modified, what factors are influential and to what extent the model is valid.

## CONTEXT OF THE RESEARCH

### PART 1

#### **The alliance inception**

In order to investigate empirically the research questions, I conducted an ethnographic study on the early operations of a multi-party and global consortium, set up by 12 companies in September 2012 and composed by almost 100 organizations in March 2014, called In-Location Alliance<sup>2</sup>.

The consortium was initially formed by a group of global and local companies that met to take advantage of the advancements of Nokia in technologies for indoor positioning: the building block of Nokia's invitation for collaboration was the possibility for allies to work together on the system architecture for indoor positioning with Bluetooth specifications and protocols and harmonize it with Wi-fi protocols; concurrently, part of the agreement was based on the wish to set up a pilot program for members and promotion efforts to increase market adoption at an industrial level of the potential services enabled. The system architecture for indoor positioning is a system of specifications and interfaces between different components of the system, it can be represented in the different modules composing it and in the connections between such modules. In the context of the ILA, it was particularly important to work on the architecture of the system in order to ensure interoperability among partners and the market players eventually interested to embark in the project. The modification towards an interoperable system of specifications was hypothesized to be sourced openly and in a democratic way, i.e. each member of the ecosystem composing the alliance was supposed to have requirements to propose for insertion in the architecture. Once the

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<sup>2</sup> From here forward ILA

modifications were assessed, they would be proposed to a standardization body in order to grant interoperability and foster the adoption of the technology.

Most part of the allies were semiconductor firms, handset manufacturers and telecom carriers: their industrial positions were resembling the basic vertical structure of a potential offering for indoor positioning but two requisites for such goal were necessary: first, the work on the system architecture had to be done in order to accomplish the desired harmonization of Bluetooth and Wi-fi technologies; second, the assessment of the industrial landscape not only in terms of members' roles in the downstream or upstream part of the value chain but also in terms of the market connections that could be established: most of the partners were former complementors or spin-offs of Nokia and Nokia itself was not present as a device maker but with a division specifically focusing on indoor maps (Nokia Here) and a spin-off (Quuppa) specialized in chips for positioning. The complete list of partners taking part to the whole project is enlisted in the table below with information on the country of the headquarter, the areas served, the age in years and the size measured according to the number of employees.

**Table 1. List of ILA companies (name, country, areas served, age, employees)**

<b>COMPANY</b>	<b>HEADQUARTER COUNTRY</b>	<b>AREAS SERVED</b>	<b>AGE (years)</b>	<b>EMPLOYEES (nr.)</b>
ACCENTURE UK LTD	UK	WORLDWIDE	26	319000
ACTION-E-MACHINES OY	FINLAND	NATIONAL	10	NA
ACTIVELIFEVILLAGE	FINLAND	NATIONAL	7	NA
AGAIDI OY	FINLAND	NATIONAL	5	NA
AIRPORT LIFE	USA	NATIONAL	3	1
AISLE411	USA	NA	7	NA
ARUBA NETWORKS	USA	USA/ASIA/EMEA	13	1200
ATANDT LABS, NETWORK TECHNOLOGIES	USA	NATIONAL	32	243000
BARNES AND NOBLE - NOOK MEDIA	USA	NATIONAL	3	NA
BEIJING MOBISTONE INFORMATION TECHNOLOGY	CHINA	NA	NA	NA

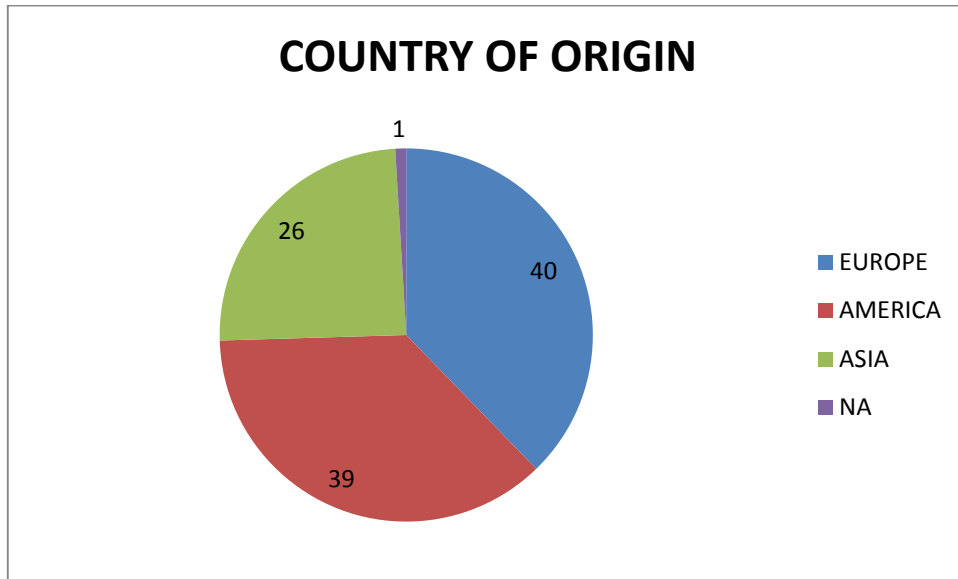
<b>COMPANY</b>	<b>HEADQUARTER COUNTRY</b>	<b>AREAS SERVED</b>	<b>AGE (years)</b>	<b>EMPLOYEES (nr.)</b>
BEIJING WOASIST TELECOMMUNICATIONS	CHINA	NATIONAL	8	NA
BYTELIGHT INC.	USA	NATIONAL	4	NA
CELIZION INC.	SOUTH KOREA	NATIONAL	13	NA
CENTIGON SOLUTIONS	USA	NATIONAL	8	NA
CISCO SYSTEMS	USA	WORLDWIDE	31	74000
COMBAIN MOBILE AB	SWEDEN	NA	6	NA
CONVERGE LABS LLC	INDIA	NATIONAL	NA	NA
CSR PLC	UK	WORLDWIDE	17	2130
DECAWAVE LTD	IRELAND	WORLDWIDE	NA	NA
DIALOG SEMICONDUCTOR	UK	ASIA	34	573
DIO INTERACTIVE CO. LTD	SOUTH KOREA	WORLDWIDE	8	50
EPTISA	SPAIN	NATIONAL	25	NA
ERISMA TECHNOLOGIES	SWEDEN	NATIONAL	17	50
ESRI	USA	WORLDWIDE	46	2700
FORMOSA WIRELESS TELECOMMUNICATIONS	TAIWAN	ASIA	13	NA
FRAUNHOFER PORTUGAL RESEARCH	GERMANY	WORLDWIDE	66	20000
GALILEO SATELLITE NAVIGATION LTD	ISRAEL	WORLDWIDE	9	NA
GARMIN INTERNATIONAL, INC.	USA	WORLDWIDE	26	9200
GE LIGHTNING	USA	WORLDWIDE	104	17000
GENASYS	SPAIN	EUROPE/AMERICA	15	50
GEOMOBILE	SPAIN	EUROPE	6	NA
GNSS TECHNOLOGIES INC.	JAPAN	NATIONAL	8	NA
GPSYSTEMS	NETHERLANDS	EUROPE	5	3
GREENWAVE REALITY	USA	WORLDWIDE	7	200
HTC CORPORATION	TAIWAN	WORLDWIDE	18	16900
HUAWEI TECHNOLOGIES CO.	CHINA	WORLDWIDE	28	150000
INDOORS GMBH	AUSTRIA	USA/EUROPE	5	30
INDRA	SPAIN	USA/EUROPE	22	35730
INDUSTRIAL TECHNOLOGY RESEARCH INSTITUTE (ITRI)	TAIWAN	ASIA	42	NA
INNORANGE	FINLAND	NATIONAL	1	10
INSITEO	FRANCE	EUROPE	6	50
INTEL	USA	WORLDWIDE	47	107600
ISEELOC	USA	NA	1	8
IVIU TECHNOLOGIES	USA	NATIONAL	4	50
KOREA TRADE NETWORK (KTNET)	SOUTH KOREA	NATIONAL	26	NA
LAMBDA:4 ENTWICKLUNGEN	GERMANY	NATIONAL	11	NA

<b>COMPANY</b>	<b>HEADQUARTER COUNTRY</b>	<b>AREAS SERVED</b>	<b>AGE (years)</b>	<b>EMPLOYEES (nr.)</b>
GMBH				
LG ELECTRONICS (MOBILE COMMUNICATION)	SOUTH KOREA	WORLDWIDE	57	82000
MAPPEDIN	CANADA	AMERICA	4	19
MARVELL SEMICONDUCTOR INC.	USA	WORLDWIDE	20	7500
MEDIATEK	TAIWAN	WORLDWIDE	18	7000
MICROSOFT CORP.	USA	WORLDWIDE	40	128000
MOBIWORK	USA	AMERICA	6	NA
NAVANU	USA	NATIONAL	4	10
NETCLEARANCE SYSTEMS INC.	USA	NATIONAL	4	10
NEXTNAV, LLC	USA	NATIONAL	8	NA
NOKIA	FINLAND	WORLDWIDE	150	61000
NOMADIC SOLUTIONS	FRANCE	NATIONAL	12	10
NORDIC SEMICONDUCTOR	NORWAY	EUROPE/US	32	185
NORDIC TECHNOLOGY GROUP	SWEDEN	NATIONAL	NA	NA
NOWON	FINLAND	WORLDWIDE	1	NA
PAL ROBOTICS, S.L.	SPAIN	WORLDWIDE	11	NA
PALMAP PLUS	NA	NA	NA	NA
PHILIPS	NETHERLANDS	WORLDWIDE	124	121000
PNI SENSOR CORPORATION	USA	WORLDWIDE	28	NA
POINT INSIDE INC.	USA	WORLDWIDE	6	200
POLARIS WIRELESS	SINGAPORE	WORLDWIDE	16	150
PRIMAX	TAIWAN	WORLDWIDE	31	2700
PURPLE FORGE CORP	USA	NATIONAL	7	50
QISDA CORP	TAIWAN	WORLDWIDE	31	9000
QUALCOMM	USA	WORLDWIDE	30	26000
QUUPPA	FINLAND	EUROPE	3	10
RED POINT POSITIONING	USA	WORLDWIDE	1	50
RNIB	UK	NATIONAL	62	NA
RUCKUS WIRELESS	USA	WORLDWIDE	11	900
RX NETWORKS	CANADA	NATIONAL	13	NA
SAILS TECHNOLOGY	TAIWAN	NA	NA	NA
SAMSUNG ELECTRONICS	SOUTH KOREA	WORLDWIDE	27	326000
SENSEWHERE	UK	NATIONAL	6	NA
SENSOR PLATFORMS	USA	WORLDWIDE	11	50
SEOLANE INNOVATION	FRANCE	NATIONAL	8	NA
SHOPPER TRAK	USA	WORLDWIDE	20	NA
SK TELECOM	SOUTH KOREA	ASIA	31	21000
SONY MOBILE	JAPAN	WORLDWIDE	14	7100
SPECSEATS	USA	NATIONAL	22	NA

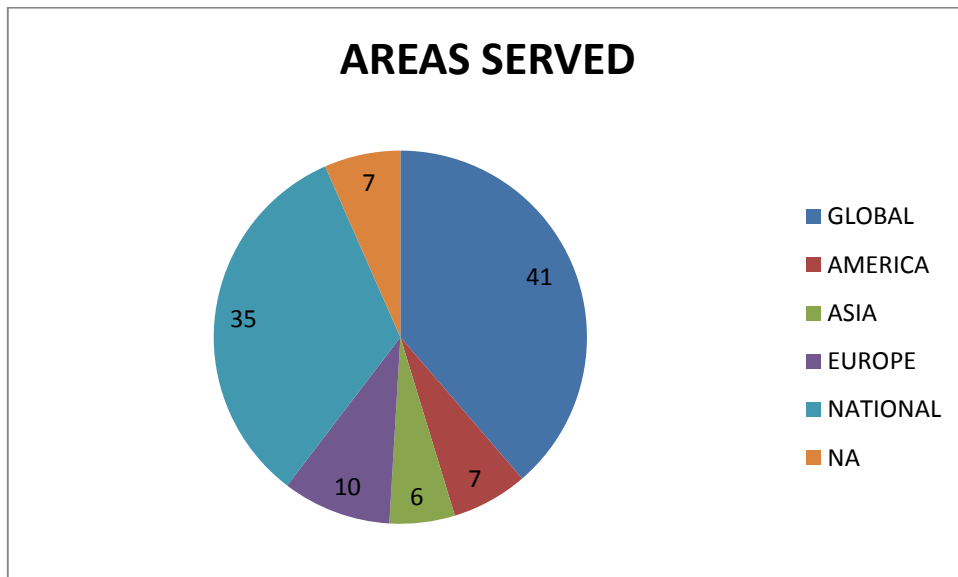
<b>COMPANY</b>	<b>HEADQUARTER COUNTRY</b>	<b>AREAS SERVED</b>	<b>AGE (years)</b>	<b>EMPLOYEES (nr.)</b>
SPECTRACOM	USA	WORLDWIDE	43	NA
SPIRENT	UK	USA/ASIA/EUROPE	79	1500
TCL MOBILE LTD	CHINA	WORLDWIDE	34	50000
TEAM ACTION ZONE	FINLAND	NATIONAL	NA	NA
TELECOM ITALIA	ITALY	EUROPE/SOUTH AMERICA	21	65000
TELECOMMUNICATION METROLOGY CENTER OF MIIT	CHINA	NATIONAL	55	1200
TELECOMMUNICATIONS SYSTEMS	USA	WORLDWIDE	NA	NA
TEXAS INSTRUMENTS (TI)	USA	ASIA/EUROPE/US	64	35000
TIETO FINLAND OY	FINLAND	EUROPE/RUSSIA	16	14000
TOMTOM	NETHERLANDS	EMEA	24	3500
TOPCON POSITIONING SYSTEMS	JAPAN	WORLDWIDE	83	NA
TRIMBLE NAVIGATION	USA	USA/ASIA/EUROPE	37	6600
TRX SYSTEMS	USA	NATIONAL	11	50
UBISENSE LTD	UK	EUROPE/USA	13	NA
UBLOX	UK	WORLDWIDE	18	NA
VISIOGLOBE	FRANCE	WORLDWIDE	10	NA
WIFARER	CANADA	WORLDWIDE	5	NA
W-OASIS TELECOMMUNICATIONS LTD	CHINA	NA	8	NA
ZENESIS NETWORKS	INDIA	NATIONAL	NA	NA

The following tables contain classifications of the alliance members according to country of origin, areas served and number of employees.

Graph 1. ILA companies classification: country of origin (headquarter)

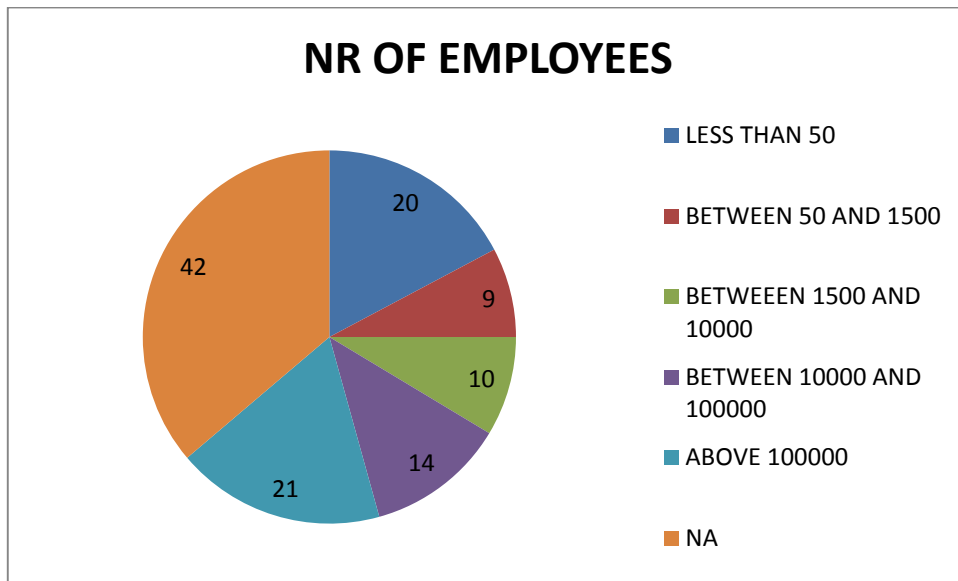


Graph 2. ILA companies classification: areas served





Graph 3. ILA companies classification: number of employees



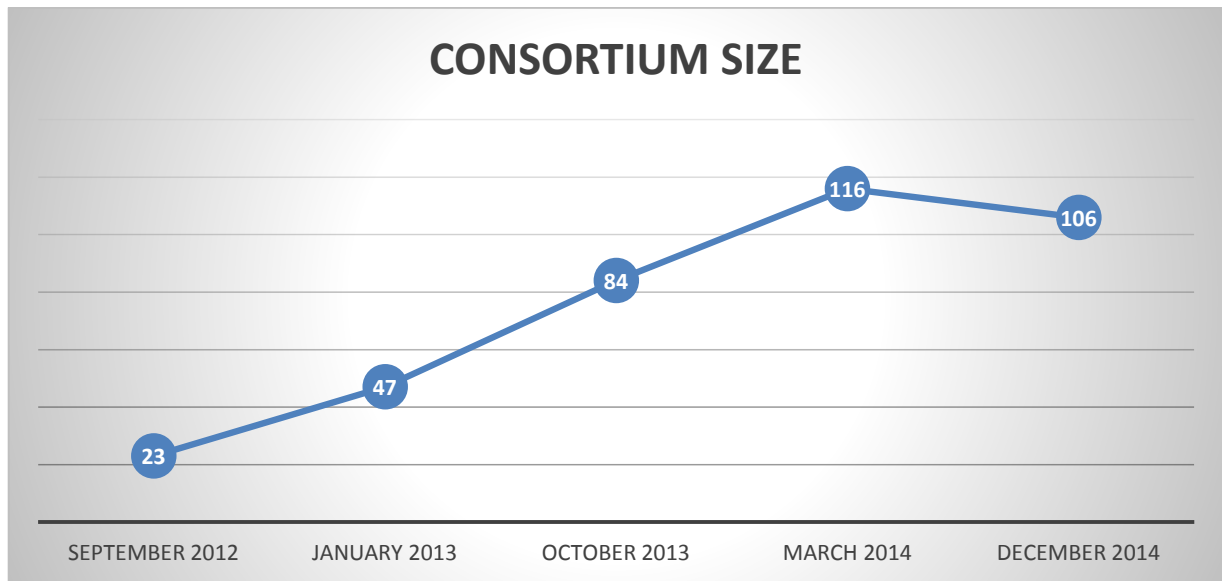
In the following page is listed the broad set of partners selected according to the overall amount of active participation in the consortium's operations: the amount of participation has been induced from a close inspection of field notes, meeting minutes and archival documents. The information on each company is specular to the previous table enlisting the totality of partners with the addition of the number of employees staffed for dealing with the consortium's operations:

Table 2. selection of ILA companies

COMPANY	NATIONALITY	AREAS SERVED	AGE	AGE	EMPLOYEES	STAFF
ACCENTURE UK LTD	UK	WORLDWIDE	1989	26	319000	2
ATANDT LABS, NETWORK TECHNOLOGIES	USA	NATIONAL	1983	32	243000	2
BROADCOM	USA	ASIA/USA	1991	24	10650	1
CISCO	USA	WORLDWIDE	1984	31	74000	1
CSR PLC	UK	WORLDWIDE	1998	17	2130	1
DIALOG SEMICONDUCTOR	UK	ASIA	1981	34	573	1
ESRI	USA	WORLDWIDE	1969	46	2700	1
FRAUNHOFER PORTUGAL RESEARCH	GERMANY	WORLDWIDE	1949	66	20000	1
GENASYS	SPAIN	EUROPE/AMERICA	2000	15	50	1
HUAWEI TECHNOLOGIES CO.	CHINA	WORLDWIDE	1987	28	150000	1
INDOORS GMBH	AUSTRIA	USA/EUROPE	2010	5	30	2
INDUSTRIAL TECHNOLOGY RESEARCH INSTITUTE	TAIWAN	ASIA	1973	42	NA	NA
INSITEO	FRANCE	EUROPE	2009	6	50	NA
INTEL	USA	WORLDWIDE	1968	47	107600	10
ISEELOC	USA	NA	2014	1	8	1
LAMBDA:4	GERMANY	NATIONAL	2004	11	NA	4
LOCUSENSE AB	SWEDEN	NATIONAL	2013	2	4	1
MARVELL	USA	WORLDWIDE	1995	20	7500	1
MEDIATEK	TAIWAN	WORLDWIDE	1997	18	7000	
NAVANU	USA	NATIONAL	2011	4	10	1
NOKIA	FINLAND	WORLDWIDE	1865	150	61000	10
NOMADIC SOLUTIONS	FRANCE	NATIONAL	2003	12	10	1
NORDIC SEMICONDUCTOR	NORWAY	EUROPE/US	1983	32	185	1
NORDIC TECHNOLOGY GROUP	SWEDEN	NATIONAL	NA	NA	NA	NA
QUALCOMM	USA	WORLDWIDE	1985	30	26000	3
QUUPPA	FINLAND	EUROPE	2012	3	10	3
SAMSUNG ELECTRONICS	SOUTH KOREA	WORLDWIDE	1988	27	326000	2
SONY MOBILE	JAPAN	WORLDWIDE	2001	14	7100	1
SPECSEATS	USA	NATIONAL	1993	22	NA	1
SPIRENT	UK	USA/ASIA/EUROPE	1936	79	1500	1
TELECOM ITALIA	ITALY	EUROPE/SOUTH AMERICA	1994	21	65000	2
TRIMBLE NAVIGATION	USA	USA/ASIA/EUROPE	1978	37	6600	1

The main guest of the meeting that set the inception of ILA was Qualcomm, a US-based chipset maker supplying many handset manufacturers that has a platform leadership in Wi-fi technologies for the mobile industry. In the following graph the size of the consortium is measured with the number of partners of the alliance.

Graph 4. ILA size during the study



## PART 2

### Fellow Travelers in an open ecosystem

Indoor positioning is a long standing promise in the field of telecommunications and, indeed, many products and services already exist by different firms, however, what was sought by ILA was a more precise solution<sup>3</sup>, eventually capable to be adopted through a sort of acceleration program enabled by the alliance project. This was considered possible with the co-existence within the same project of a twofold scope pushed by the ILA top management in setting the strategic intent: a work of harmonization of the system architecture that should take into account the results and the certifications of the individual pilots performed by partners with the alliance: the following image is extracted from the original presentation shown at the consortium's first meeting in September 2012.



Figure 4. ILA's basic logic of knowledge flow

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<sup>3</sup> Existing solutions in 2013 were not accurate enough to be precise below the meter, what was sought by ILA was a sub-meter accuracy

What is represented is that the effort was aimed to aggregate individual pilots from partners willing to collaborate, share the results, certify them and keep it as background knowledge; then the same results had to be communicated as a technical feedback to the system architecture working group that, once verified the congruence of the results with the architecture, was supposed to re-enter into the “alliance knowledge” such verification and close the circle of knowledge sharing.

Such collaborative journey implies the instrumental use of the space of collaboration, with each company pushing for its own interest: first among these was Nokia. The former Finnish giant was desperately trying to reposition its offering and have some kind of return from the huge amount of work done in the lab during its glorious recent past; but it also needed to literally re-construct an industrial landscape around; opening the HAIP architecture<sup>4</sup> could contribute to re-position the company (eventually) as a platform provider: the ambition was to reach mass market volumes in the offering, with a pivotal role to be played by Nokia Here, a division of Nokia that manages data of indoor maps, and Quuppa, a spinoff using the HAIP technology with a licensing agreement with the parent organization. Nonetheless, the HAIP solution is based on a Bluetooth standard, that is highly accurate but at the same time not even close to the wide market penetration of Wi-fi-based applications, protocols and standards. Therefore, the invitation from Nokia to some Tlc giants such as Qualcomm was purposed to find an harmonization in terms of solutions but more importantly in terms of market penetration and embeddedness.

The whole operation set up by Nokia is called in industrial jargon “to open up an ecosystem”: the consortium initiator’s stake was strongly based on the possibility to put itself as a keystone for the complementary niches of indoor positioning and exactly for this purpose brought on the table its HAIP system architecture and the companies populating the ecosystem; of course, as many

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<sup>4</sup> High accurate indoor positioning

interviews during the first months of operations testify, Nokia people was perfectly aware of the risks connected to such opening in terms of knowledge spillovers, but from the data what seems most pertinent is the possibility that they were simply trading the architecture knowledge for expertise<sup>5</sup>. The expertise of Qualcomm and of those partners such as CSR, Broadcom and Cisco Systems, that later resulted the core constituents of a coalition led by Qualcomm, was instrumental for the work on the architecture whose final outcome was planned as a Final Specification to be sent to a generic Standard Development Organization.

Therefore, the collaboration and value co-creation strategy was highly complementary and centered around the shared purpose of fostering the HAIP solution by tapping different pools of knowledge: the knowledge embodied by the technical baseline for modifications offered by Nokia; and the knowledge embodied tacitly by Us-based representatives in the field of location and positioning. But whereas the building blocks of this shared purpose were seemingly fitting and in a complementary fashion, the outcome was also instrumental to corporate intents radically different between the two players: although Nokia's intent was not a competitive threat for them, Qualcomm's goal was to strengthen its world leadership and advance towards its long-term objective, i.e. "make location ubiquitous". On the contrary, although the achievement of the Nokia's intent was dependent on the possibility to foster adoption throughout the ecosystem also through the work of Qualcomm on the system architecture, its temporal horizon was shorter: it is useful to remind in this regard that the introduction of the iPhone in 2007 and the advent of Android two years later literally displaced Nokia's dominance in the market of mobile handsets and devices. The

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<sup>5</sup> A note on the technology: the architecture was based on BT and therefore needed to be worked on to become network-centric and compliant with the Wi-fi; therefore, the baseline without work on Wi-fi specifications had a limited usefulness on a short term.

troublesome condition of the Finnish company is synthesized by the speech that CEO Stephen Elop gave to the 2011 annual meeting:

“(...) there is a pertinent story about a man who was working on an oil platform in the North Sea. He woke up one night from a loud explosion, which suddenly set his entire oil platform on fire. In mere moments, he was surrounded by flames. Through the smoke and heat, he barely made his way out of the chaos to the platform's edge. When he looked down over the edge, all he could see were the dark, cold, foreboding Atlantic waters. As the fire approached him, the man had mere seconds to react. He could stand on the platform, and inevitably be consumed by the burning flames. Or, he could plunge 30 meters in to the freezing waters. The man was standing upon a "burning platform," and he needed to make a choice. He decided to jump. It was unexpected. In ordinary circumstances, the man would never consider plunging into icy waters. But these were not ordinary times - his platform was on fire. The man survived the fall and the waters. After he was rescued, he noted that a "burning platform" caused a radical change in his behavior.

We too, are standing on a "burning platform," and we must decide how we are going to change our behavior. (...)”<sup>6</sup>

Taking advantage of an *in-vivo* conceptualization suggested by an informant about the research context, I termed the companies populating the consortium “fellow travelers”: the term Fellow Travelers<sup>7</sup> indicates the companies and the people involved in a collaboration journey, conscious of being somewhat obliged to travel together on the same route to achieve a shared purpose. It is useful to consider that such condition is not necessarily joyful: decision-making processes had to be

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<sup>6</sup> The speech and the full memo of Elop can be found at <http://www.engadget.com/2011/02/08/nokia-ceo-stephen-elop-rallies-troops-in-brutally-honest-burnin/>

<sup>7</sup> From here FT

vested with strong political traits in order to influence the direction of the journey towards not only the shared purpose but, more importantly, on each company's expected benefit from the journey itself.

### **The collaborative journey**

The collaborative path started with the assignment of two main tasks, i.e. the work on the system architecture and the pilot program, respectively to Qualcomm and Nokia. The alliance inception, the system architecture work and the pilot program were the three initiatives from where the following 23 initiatives studied originated in the following months; but whereas the strategic intent was aimed to take the collaboration forward keeping the Wi-fi and BT technologies explicitly separated and respectively sponsored by Qualcomm and Nokia in the broad technological field of positioning, it also contained elements that were the outcome of a natural negotiation between the two companies' interests. In the agenda presentation of the first ILA official meeting (September 2012) the scope is listed in:

- The “wish” of the Definition of specifications of description of protocols/functions for indoor positioning in their enabling use with indoor maps, digital guidance and navigation and related;
- As a SIG the focus was on solutions whose technical and commercial fulfilments were identified in high accuracy, low power consumption and mobility;
- The primary technological options for solutions are equally BT and Wi-fi;
- The “wish” to promote and encourage broad industry adoption of the specs.



## Scope **SEPTEMBER 2012**

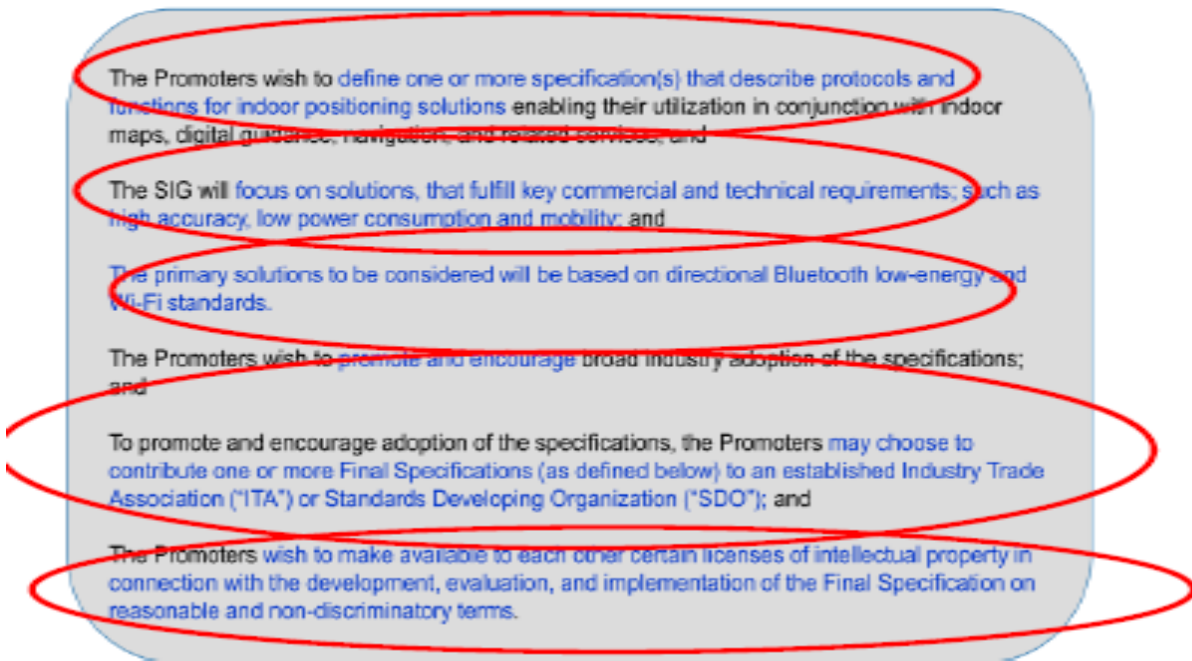


Figure 5. ILA scope at alliance project inception

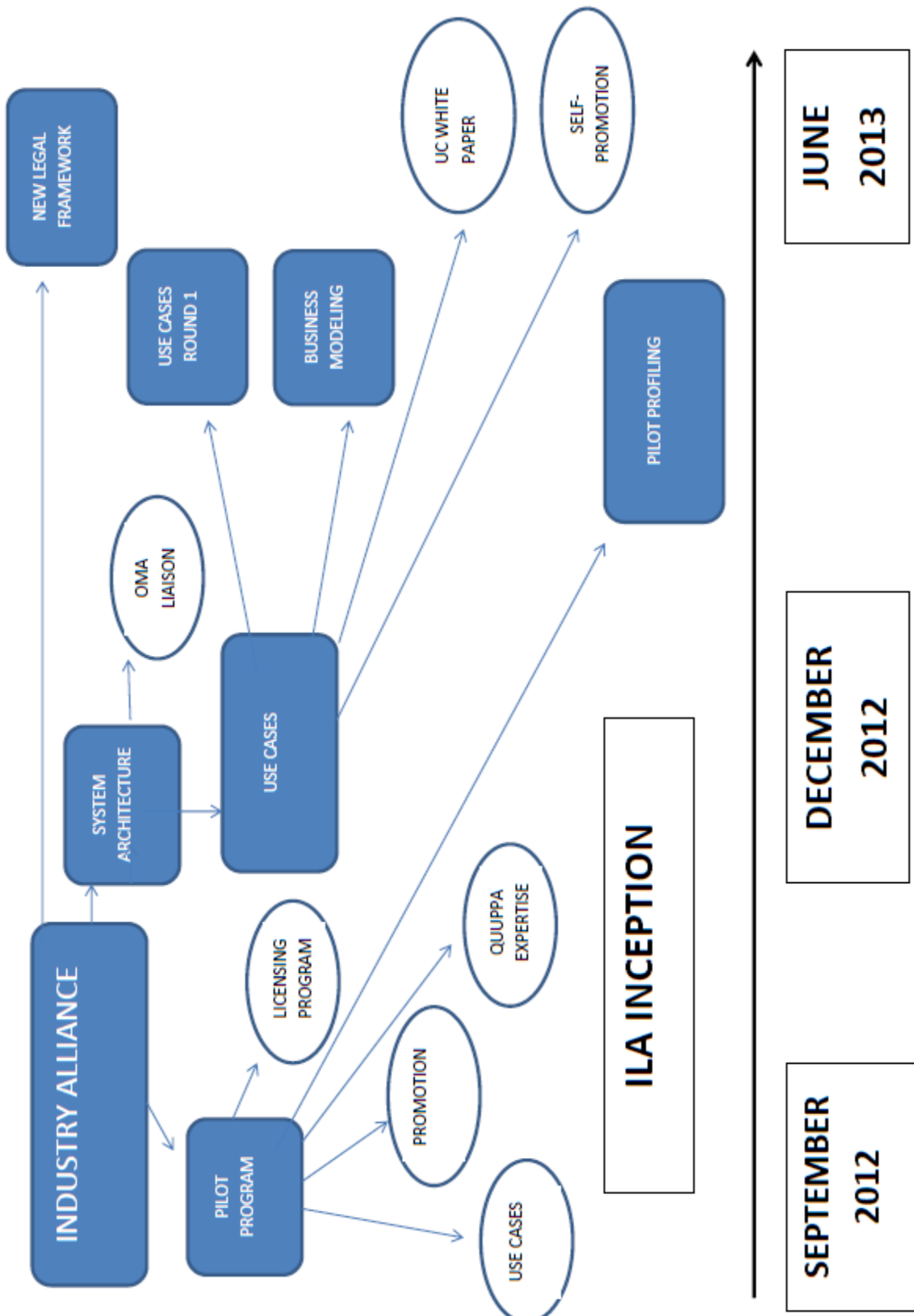
In the two final sentences of the document an important exchange is agreed upon in terms of the two means identified to accomplish the ILA goal: the adoption is “encouraged by choosing to contribute one or more specs to Industrial Trade Associations or Standard Development Organizations” (mainly pushed by regulatory intents of the US firms); also, through the “wish” to make available licensing of IP to each other during the process of development and implementation of the Final Specification on reasonable and non-discriminatory terms (availability pushed by Nokia for its interest at the ecosystem level).

The inception of the common path of FT was therefore marked with a structure of multiple interests nested under an overarching goal of collaboration: correspondently, for each interest one or more additional initiatives were put in place, according to the progress achieved and the issues raised and

considered relevant by FT during the collaboration; eventually, issues particularly relevant started to be “occupied” either through the creation of work groups or similar micro-groupings (such as the work on the system architecture identified at the inception or the promotion effort later on) or through initiatives specifically devoted to the accomplishment of a task (such as the issue of the use cases to be identified that led to an initiative of business modeling and analysis).

In the following figure a timeline of the initiative planned and eventually selected is offered to give a visual representation: on September 2012 the “icebreaking” initiative called “Industry alliance” is put in place at Nokia House in Espoo, Finland: under this initiative the interests related to the technology adoption and to the wish of contributing to a Final Specification could take the form of, respectively, the “pilot program” and the “system architecture” initiative. Later on, once these had been performed in a recurrent way so that to form a stable group of work, other initiatives were pushed from them. The same mechanisms occurred during the second phase of mutation of the consortium.

Figure 6. Timeline of initiatives at ILA inception (see next page)

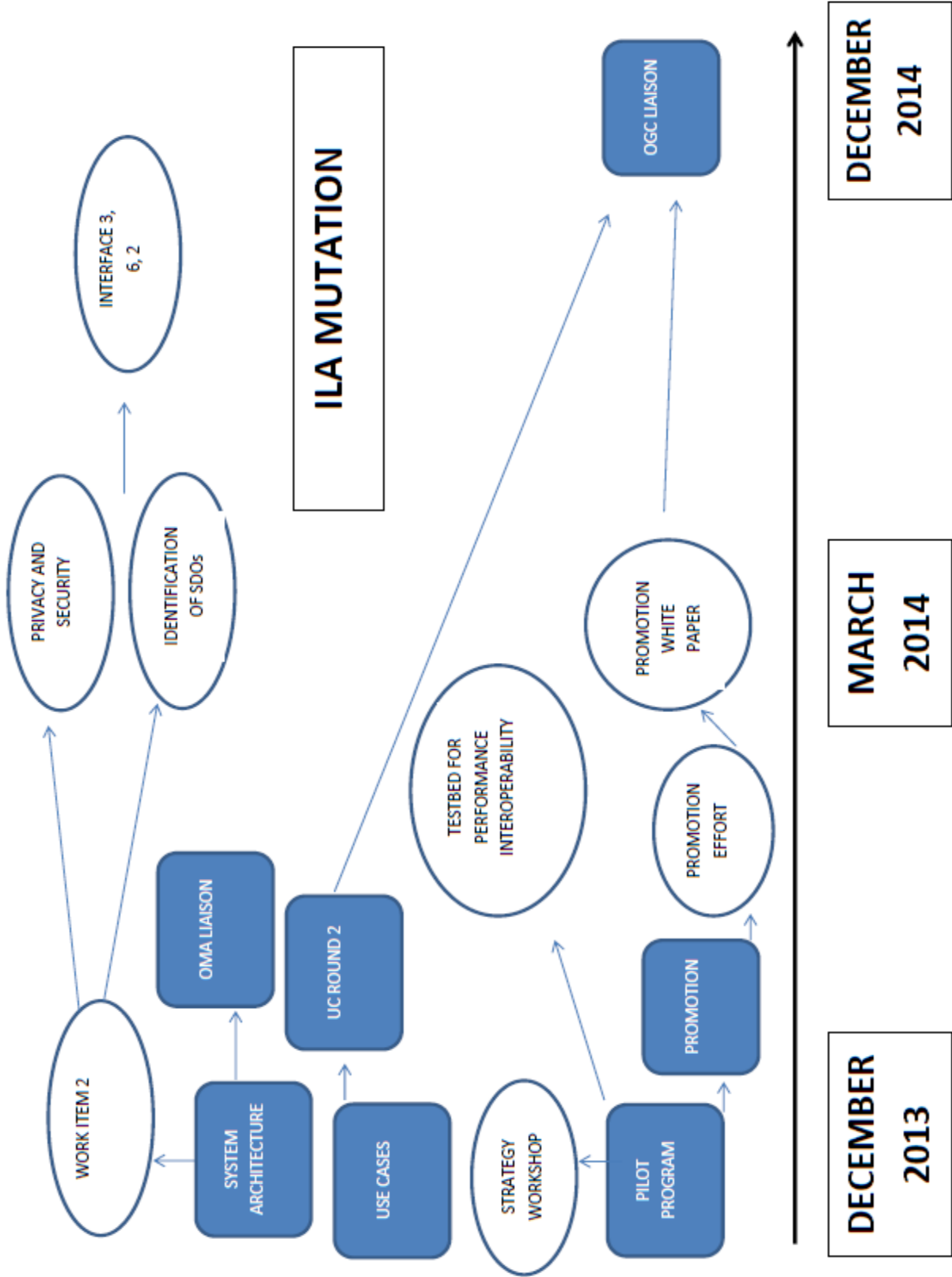


The initial agreement was based on a knowledge convergence that could *eventually* be brought forth to the technological level because the initial position was to keep separated Bluetooth and Wi-fi solutions. Nonetheless, the modest progress of the pilot program operations achieved by Nokia led progressively to a loss of momentum regarding the Bluetooth and to a corresponding mutation of the initial scope to a different organizing principle (i.e. “what do we do?”). In fact, two years and a few months after the alliance inception (December 2014, interview # 141219) the ILA’s scope was resembling the mission of a lobby group exclusively focusing on the willingness to influence, through its work on specifications, some Standard Development Organizations such as OMAs. This became the ILA scope although the work on the system architecture was still ongoing: the parallel array of actions initiated to foster adoption through a market strategy was no more based on the openness of a global ecosystem but fundamentally US-based and motivated by an infrastructural development strongly endorsed by American carriers and equally criticized by European members. Therefore, FT not only had changed the ultimate arrival of their common path: Qualcomm and the companies composing its coalition were able to modify the final goal of FT towards a hybrid and technologically agnostic architecture (in other words an architecture not explicitly based on Wi-fi nor Bluetooth), and a market adoption strongly driven by regulatory (and US-specific) logics that were not shared by other FTs. It also changed the people indirectly controlling the strategic decision making process, with the power to decide for the whole fellowship what was reasonable to do and what was not ultimately accruing to a restricted group of firms.

Whereas this shift of control was informal and indirect, the change occurring at the level of the organizing principle was not countered by mobilization activities or contrasting actions by the defeated: on the contrary, the slow shift of control and the organizing principle mutation involved also the Nokia people formally leading the fellowship: these, although striving to have at least one

individual pilot (the pilot program had zero pilots completed) and therefore continuing in their attempts for improving the program, interrupted all ecosystem-level initiatives within ILA and gradually moved their contribution toward the development of connections with other interest and lobbying groups in the field (such as Galileo and the Open Geospatial Consortium), similarly to what brought forth by Qualcomm and friends.

Figure 7. Initiatives during the mutation phase of the ILA organizing principle (see next page)



## **Mutation of the organizing principle**

Indeed, the concomitant advancement of the work on the system architecture and the progressive increase in the number of members brought the allies to mutate strongly the intent of the whole alliance-operation: this determined a slow but visible shift in terms of control, from Nokia to Qualcomm and its coalition, and of organizing principle, from an ecosystem-in-the-making to a lobby and pressure group with market adoption driven by regulators and US carriers. Although the strong cultural distance between members and a general lack of leadership skills from the part of the Alliance initiator may explain the mutation of the organizing principle, what results ultimately puzzling of such mutation is related to the actual means used by the winning coalition in terms of strategies of interaction and value co-creation: the mutation was not coincident with an interruption of the alliance project but allowed the whole fellowship to have a better understanding of the internal and external influences over the field and, ultimately, to embrace the new organizing principle through an *ex-post* rationalization. In other words, the spaces of collaboration enabled by the alliance were used as means to tap different kinds of knowledge.

In the following sections the analysis of the data is described and the rationale of the inductive process of theory building is sketched in order to investigate empirically such mutation.

## DATA COLLECTION AND METHODOLOGY OF DATA ANALYSIS

### Data collection

The data collection took 13 months (March 2013-April 2014): during such period, I conducted 52 open-ended interviews, participated to weekly online meetings, 3 plenary meetings (two in the San Francisco Bay area, one in Taiwan) and several workshops along with the collection of field data (notes, emails, demonstrations, presentations and informal conversations with informants): the whole list of types of data collected is in the table 3.

- **13 months of ILA fieldwork (March 2013-April 2014)**
  - **52 semi-structured and open-ended interviews with FT**
    - **24 on-line ILA Working Group meetings**
      - **3 ILA plenary meetings (SF Bay Area, Taiwan)**
        - **613 e-mails**
          - **Field notes**
            - **ILA archival documents**

Table 3. Classification of the data collected

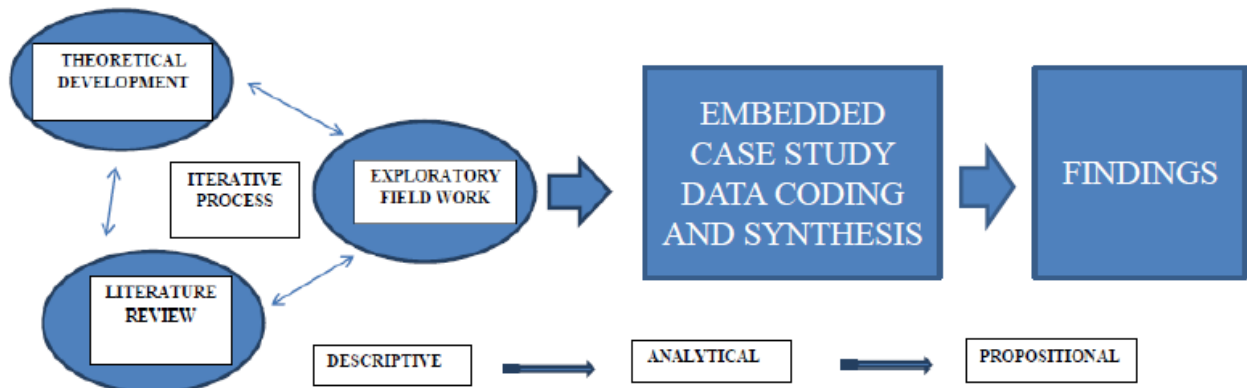
The main research method is the embedded case studies method (Yin, 1989) as analysis of data comprises 26 initiatives that ultimately resulted very different in terms of initiators, resources, tactics used to attract consensus and evolution; each of these undertakings was bundled under the “umbrella” of the whole consortium project that, though evolving from its inception, provided a context sufficiently stable to provide external validity to the theoretical insights extracted from the



analysis of the initiatives. The collection of evidence from different sources allowed for triangulation while analyzing data (Miles and Huberman, 1994) and followed a two-stage approach, especially for the themes developed during the interviews: in the first stage, the focus of the interviews was mainly on the whole functioning of the consortium and its working groups in order to understand thoroughly the characteristics of the strategy making process. Later on, the collection of data was geared more on understanding the evolution of the initiatives put in place by members.

### **Methodology of data reduction and analysis**

Adopting a grounded theory approach (Strauss and Corbin, 1990) in the analysis of the data collected on the field I constantly went back and forth from data to theory in a process of theoretical sampling until theoretical saturation was reached: supported in the analysis by the software NVIVO, I systematically coded actions and interactions put in place by fellow travelers so to scrutinize the micro-dynamics of the initiatives. I focused on the initiatives put in place because these units of analysis were crossing the entire spectrum of either visible and latent operations of the consortium: in other words, they allowed me to observe not only the consortium's formal structure, i.e. working groups, task forces and administrative seats, but also the latent coalitions shadowing the formal organization and capable to influence dramatically the outcome of the initiatives and, with them, the consortium's fate. During the process of coding the list of codes has been constantly enriched in order to incorporate previous findings on strategic initiatives at the corporate level (Burgelman, 1983; Floyd and Lane, 2000, Noda and Bower, 1996, Lovas and Ghoshal, 2000), issue selling (Dutton, Ashford, O'Neill and Lawrence, 2001), global teams (Cramton and Hinds, 2014) and technology ecosystem governance (Wareham, Fox and Cano Giner, 2014).



**GROUNDING THEORY BUILDING (Glaser & Strauss, 1968)**

**Figure 7. Methodology**

**Coding procedure**

This section of the work describes the analysis performed on the data collected; the analytical phase of the work included various steps that resembled the three phases of coding theorized by Corbin and Strauss (2014): first, a process of open coding where data is “fractured”, events are given conceptual label and grouped in categories and subcategories in order to move gradually from gerunds or in-vivo codes to analytical categories and overarching themes.. Also, the open coding process was performed on the information gathered on companies from interviews, documents of the ILA repository and field notes: when missing, company information was collected through Hoover’s company profile reports and companies’ websites and cross-checked with information gathered in the field and during informal conversations. This led the analysis to various outcomes such as a descriptive classification of the companies populating the consortium and listed in the previous section. It also paved the way to the identification of concepts representing facets of the

dynamics of collaboration as experienced by Fellow Travelers; through a process of code refinement and grouping, these ultimately resulted in categories sufficiently meaningful. A substantive portion of the information derived was collected through the ethnographic work on the field and contained in field notes and memos: this part of the data resulted fundamental to complement the information extracted from the coding process and to structure more deeply the consortium's operations: these resulted unfolding through group undertakings that I named initiatives.

The analysis of the initiatives pursued by FT was done in a processual perspective to understand how they evolved: crossing notes taken during plenaries and on-line work group meetings, presentations, meeting minutes and informants' opinions it was possible to draw the flow of the initiatives during the field work and detect from which previous initiative new ones were originated and proposed. Therefore, the analysis of the initiatives was done through a narrative account because the main goal was to uncover the sequence of causal links between different stages and highlight the mechanisms employed by the organization for the selection of each initiative (Langley, 1999). Though the narratives developed had rich meaning and content, the identification of the causal links required further analysis and comparison between initiatives: following recent literature on the strategy making process (Canales, 2015), the comparison of the different initiatives was done using the interviews but also archival data, in order to use at least two sources of evidence to describe the evolution of each initiative (Yin, 1994, p.69). the comparison was done using a timeline and clustering on the characteristics of each initiative.

A second stage of the analysis was done through a process of axial coding: here data are put back together by making connection between categories and the aim of this phase of coding is to specify each category in terms of causal conditions, context, intervening conditions and interactive strategy.

The analysis of the initiatives and their clustering during the first phase of axial coding allowed a more thorough understanding of the dynamics affecting FT journey. In a second phase the axial coding has been performed on an aggregate level in order to theorize relationships between the categories identified. Finally, the phase of selective coding that constitutes the basics of the theoretical contribution of a grounded theory: it builds theory on the dynamics of collaboration enlarging the strategy making operationalization toward inter-organizational settings. It was done selecting the core category, i.e. “Fellow travelers”: performing a continuous iteration of the connections of the core category with the others relationships between categories have been validated, in order to develop a theoretical generalization from the phenomenon observed.

## RESULTS OF THE CODING PROCEDURE: CATEGORIES AND INITIATIVES

The phase of open coding on the data led to the identification of 314 first-order codes, successively arranged in parent-child codes (49 parent codes + 161 child codes); these were grouped under 8 categories (see table 3) that resulted meaningfully descriptive of the context but still not sufficient to perform a phase of axial coding.

A	FELLOW TRAVELERS
B	ORGANIZING PRINCIPLE
C	"FORUM" LIFE
D	INITIATIVES
E	TECHNICAL KNOWLEDGE
F	BUSINESS CONVERGENCE (OUTDOOR-INDOOR)
G	CONTEXTUAL KNOWLEDGE
H	ALLIANCE-AS-A-TOOL

Table 3. Categories

As said, the open coding procedure was complemented by the identification of group undertakings named initiatives. Initiatives were considered so in a broadly manner and corresponded to an undertaking or opening move initiated by a FT to respond to a latent or perceived issue affecting the

path of FT: an example is given by the following quotes: in introducing the rationale for establishing the use cases working group, the ILA chair said:

“ (...) then we have the use case working group in which we have use cases, business cases and environment, very relevant, because it's important to understand from the investors' point of view "what are the cases where we can start to see this kind of thing going to be done" and "what is relevant, who are the players, and...and...what is the speed of the deployment, et cetera?", and that's very relevant.” (Interview # 130418, April 2013)

In another interview, an inception is described as aimed “so that can be taken in consideration an array of use cases (...) that can allow the design of those business models that are not only those pushed by the big partners but that can result of interest also to others.” (Interview # 130404, April 2013)

Initiatives are listed in table 4: they were categorized according to the content, their originator(s), the type of confrontation and the outcome in terms of success.

#	INITIATIVE NAME	CONTENT	ORIGINATOR	CONFRONTATION	SUCCESS
1	INDUSTRY ALLIANCE	JOURNEY OF COLLABORATION	NOKIA	fitting	YES
2	SYSTEM ARCHITECTURE	SYSTEM ARCHITECTURE WORKING GROUP	INDUSTRY ALLIANCE	internally constructive, externally destructive	YES
3	PILOT PROGRAM	PILOT WORKING GROUP	INDUSTRY ALLIANCE	fitting	YES
4	USE CASES ROUND 0	USE CASES WORKING GROUP	SA WG	constructive	YES
5	PROMOTION	PROMOTION WORKING GROUP	PILOT WG	constructive	YES
6	HAIP LICENSING	LICENSING PROGRAM FOR HAIP	PILOT WG	fitting	NO
7	USE OF QUUPPA EXPERTISE	PLAN OF SERVER-CENTRIC DEMOS	PILOT WG	fitting	NO
8	LIAISON WITH OMA	INTERFACE 5	SA WG	destructive	YES
9	PILOT PROFILING	MEMBERS' PROFILE	PILOT WG	fitting	NO
10	USE CASES ROUND 1	FLOW OF USE CASES TO THE SA	UC WG	constructive	PARTIAL
11	USE CASES WHITE PAPER	EXTERNAL COMMUNICATION	UC WG	fitting	NO
12	SELF-PROMOTION	INTERNAL COMMUNICATION	UC WG	fitting	NO
13	BUSINESS MODELING	ANALYSIS OF THE ECOSYSTEM	UC WG	constructive	PARTIAL
14	REVISION OF THE LEGAL FRAMEWORK	NEW LEGAL FRAMEWORK	EVOLUTION WG	fitting	YES
15	WORK ITEM 2	PRIVACY AND SECURITY+SDOs	SA WG	internally constructive, externally destructive	YES
16	USE CASES ROUND 2	FLOW OF USE CASES TO THE SA	UC WG	constructive	PARTIAL
17	PROMOTION EFFORT	EXTERNAL PROMOTION OF THE CONSORTIUM	PROMOTION WG	fitting	YES
18	STRATEGY WORKSHOP	GROUP BRAINSTORMING	PILOT WG	destructive	PARTIAL
19	INTERFACE 3, 6, 2	WORK ON INTERFACES	SA WG	internally constructive, externally destructive	YES
20	CATEGORIZATION EFFORT	TAXONOMY CREATION AND DISSEMINATION	UC WG	fitting	NO
21	BEST APPLICATION AWARD	EXTERNAL COMMUNICATION	UC WG	constructive	NO
22	INTERNAL UC WHITE PAPER	INTERNAL COMMUNICATION	UC WG	fitting	NO
23	EXTERNAL WHITE PAPER	EXTERNAL COMMUNICATION	UC WG	fitting	NO
24	TESTBED FOR INTEROPERABILITY AND PERFORMANCE	CERTIFICATION	PILOT WG	constructive	PARTIAL
25	PROMOTION WHITE PAPER	EXTERNAL COMMUNICATION	PROMOTION WG	fitting	NO
26	LIAISON WITH THE OGC	DIGITAL MAPS STANDARDIZATION	PROMOTION WG	constructive	YES

Table 4. Classification of ILA initiatives

The consortium as a whole started to allocate a budget for the different working groups only in the final part of the fieldwork (January-March 2014), once a new legal framework was agreed and in place and membership fees started to be collected with amounts different according to the

membership level. Prior to this transition, FT were participating on a complete voluntary basis: this means that the participation to the whole consortium depended on the resources allocated to them by the companies, i.e. time, money and staff.

The most meaningful distinction is the one between initiatives that had for FT a recurrent and meaningful enactment and those that hadn't; the distinction is not completely conceptual but instead full of high practical relevance for two reasons: first, spaces of discussion and collaboration deemed as particularly important, such as the whole consortium interest over the field of indoor positioning, are organized in recurrent activities, i.e. working groups; on the other side the activities performed that are not completely attached to the upper scope but nonetheless formally approved because of their eventual positive outcomes remained simple task-oriented (and time-efficient) activities. Second, the eventual selection of the initiative and its implementation in the current activities is a necessary step for many actors to get visibility in the eyes of fellow travelers and have a space of negotiation for pursuing the intent of the alliance and, perhaps more importantly, their own. The figure 8 below is a portion of the ILA process story and is selected to clarify this point: the parent initiative is the "industry alliance", from which the "system architecture" and "pilot program" were originated and successfully selected as activities whose recurrence and shared benefits were recognized: all such three initiatives are depicted squared to indicate that they were established and then recurrently pursued; other initiatives, in this exemplar case blooming from the pilot program initiative, were either successful, such as the square referring to the pilot profiling activity, or unsuccessful, such as the round ones referring to initiatives such as the "promotion" initiative and the "Quuppa expertise" initiative: these activities didn't meet neither the support of the alliance chair nor the endorsement from other fellow travelers. They could be completely discarded, stalled or post-posed, as happened with the "promotion" initiative (officially started in December 2013),



the “use case” initiative (post-posed in its inception in December 2012) and the “self-promotion” activity (stalled in June 2013).

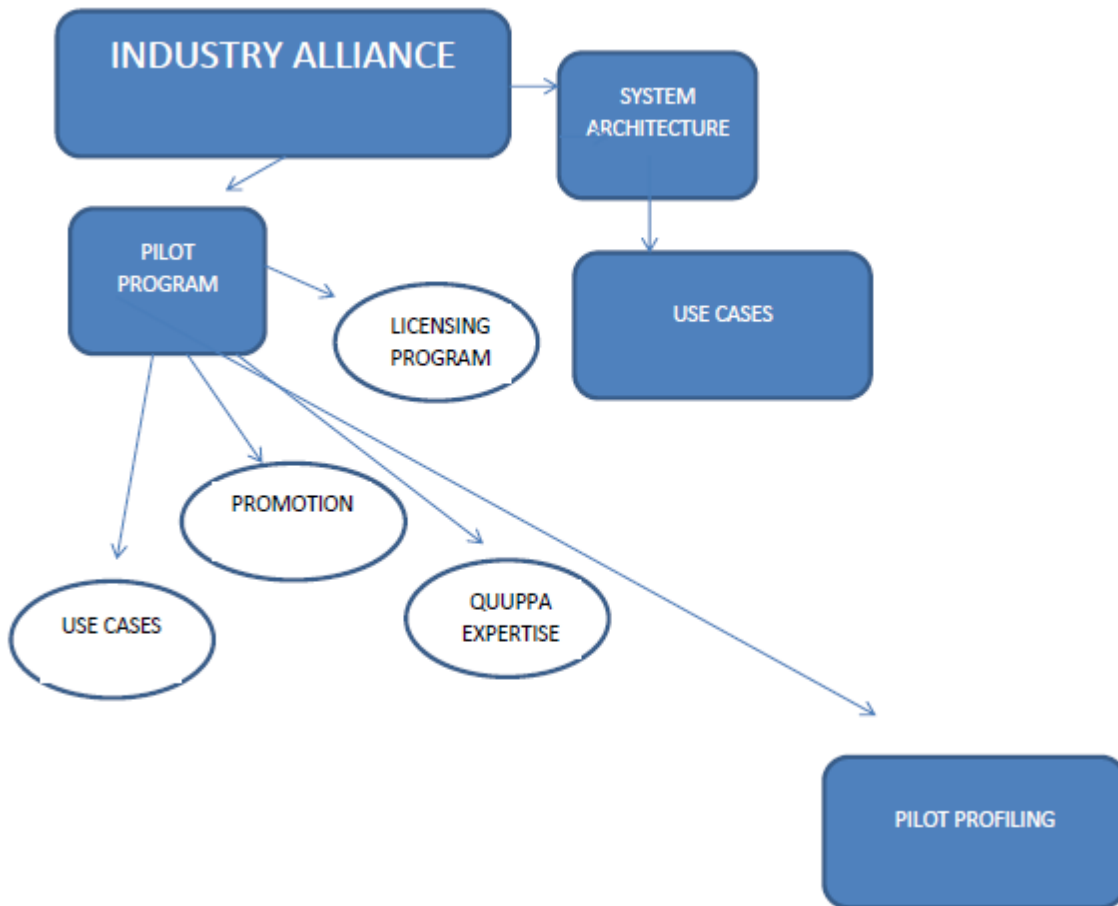


Figure 8. First initiatives put in place by ILA

The events that explained the progression of each initiative were established from initiation to a planned termination or the achievement of the expected results. It is possible to see from figures 6 and 7 those initiatives that ended up either because of a planned termination or for evident failure to attain the objective and those that ended up as recurrent activities of a working group or were able to achieve the expected results. I therefore clustered the initiatives similar in terms of the cited

characteristics and outcome: these analyses allowed the identification of three different types of initiatives termed: *common-denominator*, *horizontal configuration* and *old-boys' club*.

### **Initiatives and interactive strategies**

The analysis of the 8 categories identified as mostly salient and relevant to describe FT's was performed scrutinizing the processual development of the alliance operations (i.e. the 26 initiatives) and the archival and interview data, in order to understand what are the interactive strategies used by FT. In the first phase this led to the specific grouping of the activities in 3 distinctive strategies of interaction (*common-denominator*, *horizontal configuration* and *old-boys' club*). See the figure x in the following page for a visual representation.

*Old-boys' club*: the system architecture working group was composed by representatives of big firms such as Qualcomm Atheros, Broadcom, CSR and Mediatek. They were highly experienced and extremely expert in the field of location: the activities were mostly based on the refinements on the system interfaces' modifications and seldom were focused on initiatives out of this mandate: a notable exception occurred during the transition to the new legal framework, when the system architecture chair (and vice-chair of the alliance) was explicitly called by the ILA

# DATA ANALYSIS: axial coding

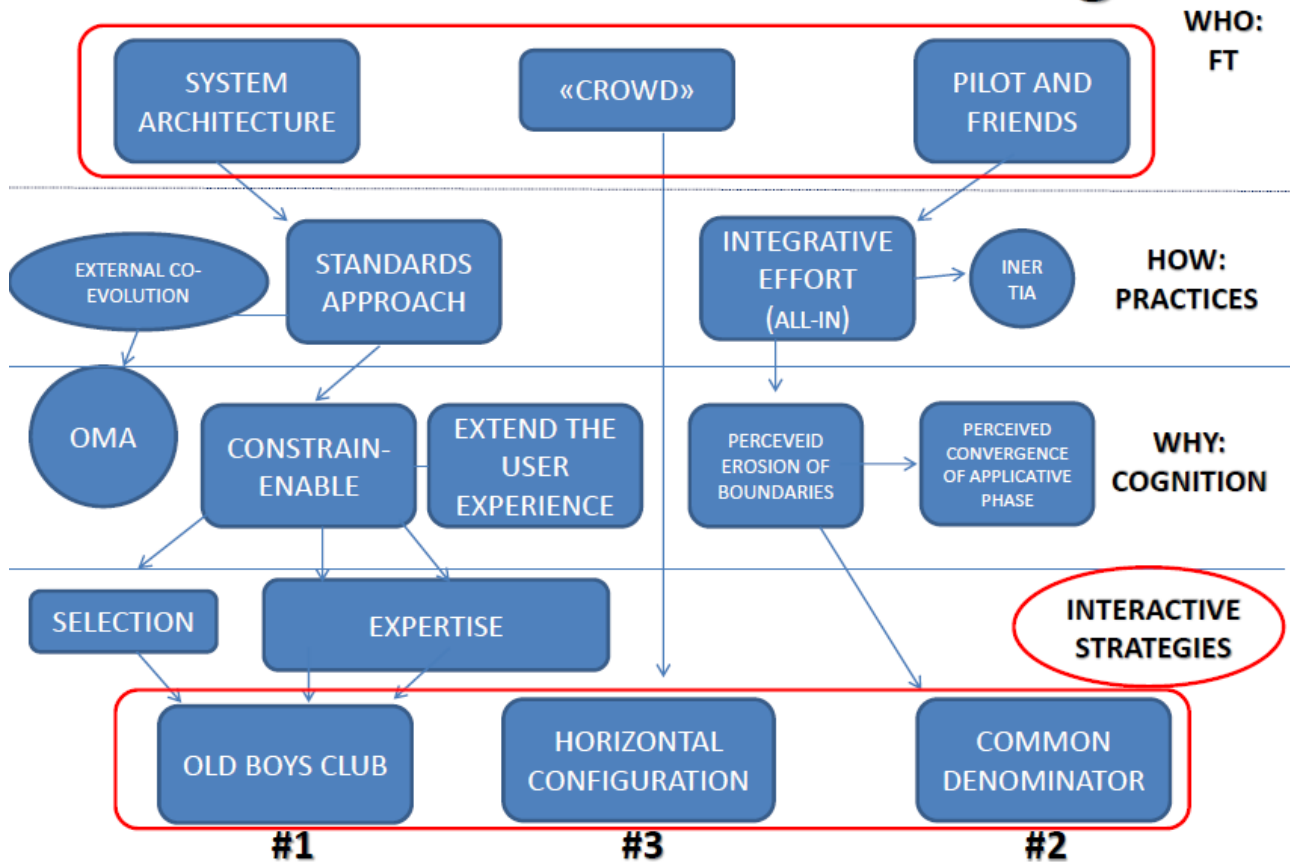


Figure 9. Identification of the interactive strategies underlying ILA initiatives

president for support in managing concerns and protests from the FTs that were refusing to sign the transition. Such episode is an instance of the kind of charisma that this prominent member exercises over the fellowship. The value co-creation strategy suggested by this group of initiatives was categorized Standard approach to industry creation because it is designed specifically to ensure technical interoperability between players: interoperability is granted implementing modifications in the system according to the technological requirements that fit would-be market players' wishes. As a consequence, the work was pursued on a channel internal to the alliance: here the requirements from FTs were evaluated and eventually retained or rejected, therefore *enabling and constraining*

avenues where FTs could eventually build business cases (i.e. *extend the user experience*); on the other side, the possibility to have the interfaces' modifications to the system accepted by the most relevant Standard development organization (i.e. the Open Mobile Alliance) required to build a relationship (or a *liaison*) with such organization. This led to an escalation in the SA working group way of working: the modifications, and more importantly the requirements asked by the use cases submitted for evaluation, progressively became evaluated on the basis of their accordance with a way of working accorded to what was taken for granted at OMA's meetings<sup>8</sup>. Alternatively, they were filtered with a purely technical evaluation resting on a right-or-wrong logic, even when the use cases were explicitly designed to have the requirements correct and technically feasible. One episode on emergency services indicates how much the technical knowledge and expertise was instrumentally used by this group as a mean to exclude interests conflicting with those of the restricted circle of companies represented in the system architecture working group: an example is given by the account given by an European entrepreneur about such attitude:

“(...) well, I'm satisfied about the discussion, so I think it's a good idea to have discussions about ideas and I'm not satisfied with the feedback, especially from...there was this one, or maybe two, big points where Andreas and one other person, I don't know his name at the moment, said “we don't want these use cases”. So after that meeting I thought “ok, so why are you asking for use cases when you're not open minded for use cases?”. But, at the end, in the last meeting, Fabio said “no, we will accept these use cases”. So...how do you say it...I'm interested in the ongoing

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<sup>8</sup> It is notable here that such attitude to refer to an institutionalized way of collaborating was diffused among the informants: each informant in fact underlined as mostly logic the way of working belonging to another collaborative space, not exclusively OMAs but also, for instance, the Wi-fi Alliance, the Open Geospatial Consortium or the Bluetooth Special Interest Group.

process, because I think now...we're not coming from this political area, we're thinking about use cases and we can propose these use cases and we can discuss the technical issues on these use cases, but we are not aware of these political discussions..." (interview # 131023, October 2013).

A natural question rests on the reason why the selection was performed in such excluding fashion by the reference group of the alliance, in face of the declared openness in the whole alliance project: the evidence extracted through a triangulation of the data points to the crude fact that US-based companies simply needed to have a herding crowd backing their requests to the OMA in order to convince the SDO of the market virtuousness of the modifications. Such exploitation is also suggested by the following quote from an informant:

"in OMA or standardizing contexts, you go there with a solution that is not only the solution of mine, but there's a crowd of fifty players thinking that these innovations can benefit their businesses and those of their customers" (Intervista # 130404, April 2014)

The closure attitude performed by this group resulted extremely frustrating for FTs not involved, especially for the group working on use cases: this group was in charge of collecting FTs' use cases, passing these to the system architecture working group and ensure a reliable and constructive confrontation on the requirements proposed. Instead, the confrontation resulted destructive rather than constructive; how much such attitude resulted annoying by the use cases chair is expressed in this way:

"Right now you may have a guess on how the process in the System Architecture working group is managed and their style...you've seen it". (Interview # 140210, February 2014)

Nonetheless, as depicted in table 4, all the initiatives put in place by the System Architecture working group resulted ultimately successful and contributed to advance the collaboration journey.

This in terms used in the strategy making stream means feasibility (possession of capabilities) and strategic fit (match of the initiative with the strategic intent) but not constructive confrontation (Canales, 2015). We investigated further in order to understand what factors explain this ability to contribute in the face of destructive confrontation: we went through the bios and CVs of the group participants resumed during the interviews and complemented by the information extracted on professional social networks. The two most salient characteristics resulted the high endowments of expertise and socio-professional embeddedness of participants in expert organizations such as the ILA or the OMA or the Wi-fi Alliance; a validation of this finding can be induced by two observations collected during the ethnography and exclusive to the operations of this group: first, the meetings were recurrently characterized by humorist conversations and gaffes between members that were simply impossible to formulate without a deep relational knowledge between members; second, this group was the only one that had a turnover in the chair seat: although the new chair shared the company of origin with his predecessor (i.e. Qualcomm), when introduced as the prospective new chair the guy was presented as an acquaintance of the audience, formed almost exclusively by system architecture group members and a few of Fellow Travelers:

“the meeting with the group takes place in a separate room very similar to a classroom (...). In closing his presentation and the discussion, Stuart (the group chair) announces that he leaves the chair of the SA WG and that designated Andreas to guarantee continuity with the work achieved so far; in addition, “everybody knows Andreas since a long time”. (quote from field notes taken during the plenary meeting in Hsinchu, Taiwan, December 2013)

Both factors, expertise and socio-professional embeddedness, appear in our evaluation important, and that’s the reason why the resulting interaction strategy has been labelled “old-boys club”.

*Common denominator:* the pilot program and the use cases working group result highly aligned in developing initiatives geared to put in place an integrative effort. A constant concern while planning and performing this kind of initiatives was to involve as much FTs as possible: of course, this was not aimed exclusively to make them feel comfortable with the fellowship but also to extract as much knowledge as possible from FTs in terms of potential markets, technological advancements and relational knowledge: instrumental for all this was to ensure participation from FTs in an integrative effort. Exemplary of this dynamic was the open access to the alliance potentially granted to anybody, whatever the market position and power. Differently from the old-boys club, the initiatives performed were promoted during conference calls held twice in the day in order to be able to communicate to North America and Asian countries as well. The subtle but visible downside of this interactive strategy is the high inertia at the heart of originators' actions: in order to obtain the highest agreement and participation the content of the initiatives was more geared to be wrapped up in a political fashion, resulting ultimately unattractive for FTs. In this sense a general sense of misunderstanding pervades the initiatives, that were mostly unsuccessful at the alliance level although successful in gaining chair's support. In particular, originators of these initiatives were perceiving that the ecosystem in the making was a convergent phenomenon where the erosion of the boundaries between industrial fields such as consumer electronics and mobile services would necessarily lead to a new vertical, i.e. indoor positioning: in other words, their principal misunderstanding rested on the perception of a necessary convergence at the applicative phase of the knowledge pooled in the alliance. The work on business modeling is exemplary in this sense: in order to make the output of this initiative understandable and, as a consequence, acceptable, the prospective value chains had to be progressively reduced to a few and then to a unique one that was understandable but completely useless at the alliance level; its usefulness was exclusively addressed to satisfy the need for contextual and relational knowledge of the FT from Europe. However, most

of these initiatives resulted unsuccessful and irrelevant for FTs, these were usually planned through a political gestation in order to gain support and being put in place, and then evaluated as feasible afterwards and at a very superficial level. During the phase of support-seeking and negotiation over the content with ILA chair and influencers the match between the content and the strategic intent of broad industry adoption was deemed as necessary to start the initiative and originators planned the initiatives accordingly; once in place, the confrontation with the specific participants involved was highly constructive.

*Horizontal configuration:* between the old-boys club and the FTs pushing common denominator strategies rested a “crowd” of FTs adopting an observing behavior: for these organizations, being a FT meant exclusively taking stock of and leverage the operations and connections enabled by the collaborative journey. Some of them tried to push their use cases for having the required modifications accepted but their requests have been consistently rejected by the system architecture group. Other, such as Asian carriers, never really changed their attitude of observing participants. Exemplar in this sense is the alliance use performed by Quuppa: instead of concentrating on a specific vertical industry this firm used the alliance to diversify its operations in very different verticals, such as retailers, supermarkets, hospitals and sports’ venues. They were doing this by operating horizontal configurations of value and trying to connect with value-added resellers, i.e. service firms *already* working with customers such as retailers, supermarket chains and store managers. Similar to Quuppa resulted firms such as Indoo.rs or Lambda4: the crowd was therefore composed by many firms, either purely observers or overtly acting and leveraging the contacts and contexts enabled by the alliance. The initiatives put in place resulted only partially successful: they had strategic fit but no feasibility, while the confrontation was consistently fitting.



<b>INITIATIVE TYPE</b>	<b>STRATEGIC FIT</b>	<b>FEASIBILITY</b>	<b>CONFRONTATION</b>
OLD-BOYS CLUB	YES	YES	Internal: constructive External: destructive
COMMON DENOMINATOR	YES	NO	Completely constructive
HORIZONTAL CONFIGURATION	YES	NO	Passive/Puzzling

Table 5. Comparison of clusters of initiatives: strategic fit, feasibility and confrontation.

## Relationships between categories

### Fellow travelers

The analysis of the initiatives and their clustering during the first phase of axial coding allowed a more thorough understanding of the dynamics affecting FT journey. In a second phase the axial coding has been performed on an aggregate level in order to theorize relationships between the categories identified (see figure 9 for a visual representation). First, the category “Fellow travelers” (A) has been picked as a central category because it encapsulates *challenges and benefits of being part of the co-creation project*; also, it underlines a common occurrence among fellow travelers, i.e. that company’s representatives were *individuals on their own and not groups of managers*. Individuals were generally seen as “the Broadcom guy”, or “the Cisco guy”. Very often they were seen as representing the whole company, although their attitude and proclivity to engage in co-creation initiatives were highly personal. They were mostly free to decide about the right choice for their company’s interest and were at the same time backed and endorsed by their employer; more importantly, even when a company was represented by two or more managers, these were coming from different and in some cases competing divisions of the same firm.

Such *high ambiguity between the personal choice of interaction and the “weight” of the company* represented fueled the recognition of the expertise expressed by FT toward the system architecture members: the expertise of these managers matched with the expectations of FTs toward the “forum” life, in the face of the destructive attitude adopted by these when selecting right or wrong requirements for the system.

# DATA ANALYSIS: axial coding

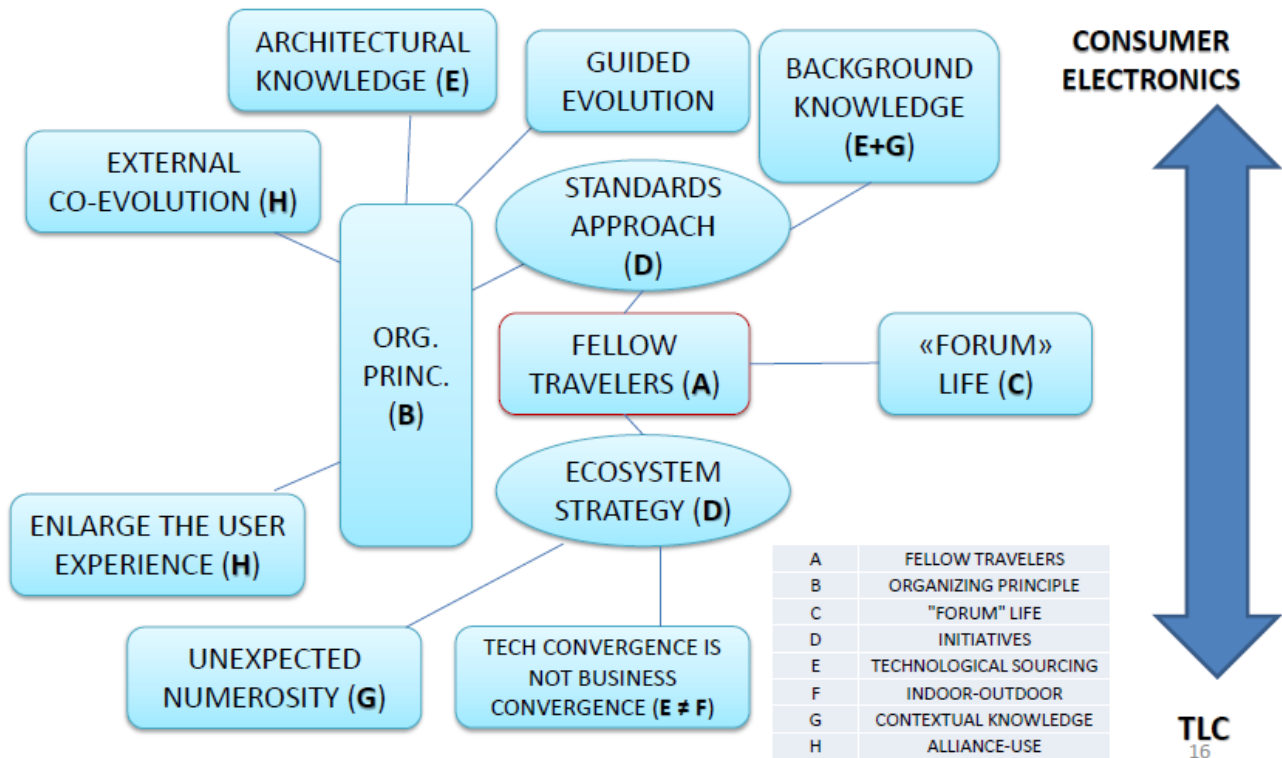


Figure 9. Connection between categories

This had two consequences: first, at the level of initiatives, those selected were mostly supportive of a “standards approach” to industry creation (D): in this approach, instead of trying to continuously recap and integrate all members’ knowledge under the alliance umbrella, the background knowledge co-created (E+G) is explicitly stored, as pointed by the quote from this interview to the System Architecture working group chair:

“from the internal point of view it's...I started this process with the system architecture group because I wanted to make sure that we share a common vocabulary, that we have the same assumptions, and that if we had any unexamined assumptions that were different, then we had a

chance to argue those out and to...become a some sort of understanding, even if we don't agree, at least we know what the points of difference are. I think is very important before we move to trying to do active work, that we make sure that we are all talking about the same thing and we understand each other's interests, motivations, differences et cetera. So that's really the important part internally for us so...part of the system vocabulary in the ally is talking about relationships and that's the kind of internally oriented (...). So that's the internal part of the issue. Externally we got a lot of questions about what the alliance is trying to do, what's our aims, what's our belief, how to have a lot of pieces stick together, and I respect...I don't know whether or not we will publish the white paper in its full form, in its first release, or whether we will hold on for that, we'll certainly publish at least a higher level summary of that that explains the basic vocabulary and content and what we're doing and how we think the system needs to work, and what sort of organizations...other organizations we are targeting for..." (Interview # 130531, May 2013)

In the initiatives aiming to pursue an "ecosystem strategy", on the contrary, the same alliance output cited by the latter informant, and accounted as a mean for both internal and external use, i.e. the white paper, was used for many purposes fitting the strategic intent but was completely detached from the management of the background knowledge:

"during the last weeks we worked mainly on taxonomic aspects, understand what industry, what *applications* in which industries can be mostly receptive and how, so we engaged an activity of taxonomy and performed a survey by giving it and seeking the contribution of members feeding us with interesting notations, now we aim to publish such survey in a white paper" (interview # 141219, December 2014)

The initiatives that resulted less successful, as said, were trying to keep the fellowship integer through broad “umbrella” strategies very similar to ready-to-use formulas but fundamentally devoid of a shared meaning ( $E \neq F$ ); this is exemplified by the “packaging” given to many unsuccessful initiatives such as those where the indoor positioning industry was seen as a natural continuation of the outdoor navigation system. This is not to say that a novel industry has no origin or path-dependency: in fact, many accounts collected on the evolution of the positioning technology for indoor spaces refer to the crossing of different disciplines such as the field of navigation, guidance or wireless communication. The point we’d like to stress is that the issue selling activity of these managers was cheaper and customized to grab the audience attention by easy formulas that didn’t work because many FTs were more interested to the background knowledge ( $E$  – technological sourcing or  $G$  – contextual knowledge) granted by slim fellowships such as the old-boys club. Although unsuccessful, the “ecosystem strategy” had the unexpected effect of increasing steeply the numerosity of the alliance ( $G$ ). Unfortunately, also this by-product ultimately fueled the old-boys club: they could further legitimize through the crowd the interface modifications pushed to OMA with no costs for having the fellowship overcrowded but, instead, leveraging on it.

### **The organizing principle**

The second category in order of importance and salience resulted the organizing principle, i.e. the meaning attached to the question “What do we do, as an organization?”. The organizing principle had a drift toward the direction wanted by the old-boys club: such direction points to the categories “external co-evolution” (a specific type of “alliance use” -  $H$ ) and “architectural knowledge” (a specific type of technical knowledge -  $E$ ) and supports the view of organizational adaptation as the outcome of a process of guided evolution. On the purely business side, this meant a final endorsement of the technology of reference, i.e. the Wi-fi and the terrestrial beacons (typically US-

based); such solution popped up in the final months of the study and implied the possibility to have a standard *de facto* rather than *de jure*: having a standard *de facto* means the possibility, especially for on or more global MNCs with strong market power and penetration, to “block” the interoperability by turning the interfaces as proprietary ones and therefore “closing” the ecosystem<sup>9</sup> according to their own wish. The dialectic between such possibility and the more regulatory condition of a standard *de jure* correspond also to a deviation of the organizing principle toward a fellowship more on the consumer electronics side rather than the traditional way of industry creation in telecommunications. To sum up, the takeover and the resulting mutation of the organizing principle was the outcome of an action situated not within a company’s walls but in a space for inter-organizational collaboration called “fora”.

### **Forum life**

The category “Forum life” is tied to the “Fellow travelers” category: it represents an instantiation of the induced though autonomous behavior observed, because most of Fellow Travelers had recurrent appointments and duties in fora, special interest groups, standardization bodies and lobby groups. Although taking part to this groups as company representatives, such acquaintances with the typical work and kinds of issues raised in a forum were highly valued not only in terms of technical knowledge or prestige but also for two forms of capital: for the *knowledge of the specific context* within this kind of bodies and for the subsequent prestige to the alliance as a whole once the liaison with other powerful bodies is finalized. Such prestige is a form of recognition that enlarges the interest represented by the alliance and that, in turn, makes the fellowship more capable to talk with another body *from a peer-to-peer stance*. These indicated an instrumental view from Fellow Travelers in respect to the potential gains for being part of the alliance: interests, under the process

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<sup>9</sup> In managerial jargon this is expressed as “breaking the bank”

of mutation of the organizing principle, started to get scaled accordingly to the expectations and take-home looked for each member: some adopted an *observing behavior*, in order to grab information and make sense of the alliance progress and the phase of convergence of the co-creation activities. Many members that had actually no participation except voting were companies with national reach in terms of market and a substantive understanding of the system architecture: needless to say, these expectations are hugely disproportionated in respect to those of multinational device makers and chipset makers that need to have projections of sales in terms of millions. Other fellows simply tried to maximize from their participation: the falling leader was probably the foremost in this attitude because, as said, pressed to have results as soon as possible, even running the risk of putting in place clumsy actions that were tracked as initiatives and whose account has been given previously. In order to give an example of an awkward initiative, one of the most unsuccessful resulted the initiatives called “self-promotion” (of partners): this initiative was planned by the use case working group leader and is a constituent of the cluster of initiatives called “common denominator” because was purposefully shooting at the crowd with the aim of grabbing as much information as possible from the partners. Members were invited to show up in order to “strengthen the alliance and make it a potential marketplace, by disclosing information about themselves on the alliance intranet as a way to self-promote themselves”. The information requested was very detailed: “business role, products/services, markets/industries/countries of interest, business role to partner with, distinctive competencies possessed, reference customers and achievements, contacts”. The *initiative* had no results and was not considered particularly relevant, but what is more interesting and informative on fellow travelers’ differences in knowledge about “forum life” is the final “NB”: “all info provided must be relevant to ILA and indoor location based services”, that is a mandate extremely hard to understand in such an exploratory and embryonal phase of industry

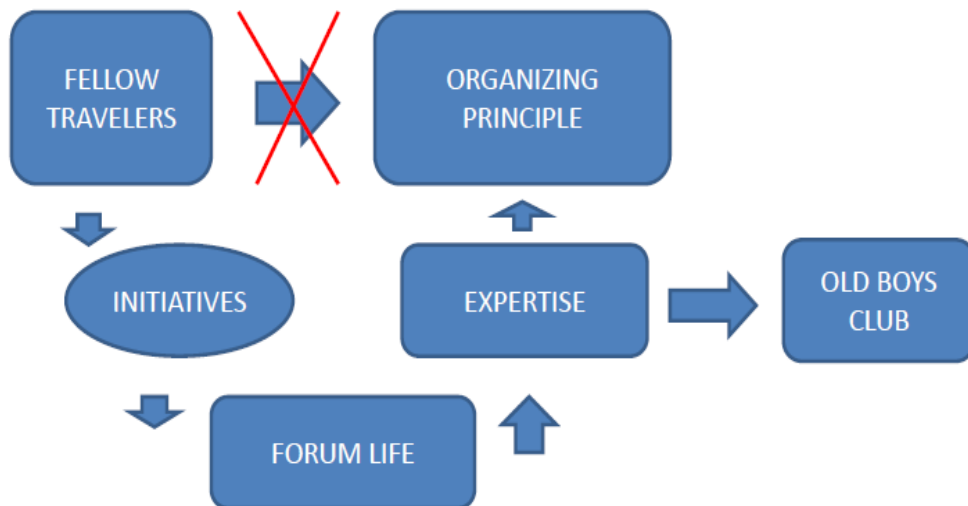
creation. The difference in terms of knowledge of the forum life led fellow travelers toward different interactive strategies and a mutation of the organizing principle.

### **Selective coding**

The most salient categories are represented in the figure 10. The drift of the organizing principle was not observed by looking at the identity of FTs but scrutinizing the initiatives put in place by them and their identity as well: the initiatives constitute the bulk of the so-called “forum life” experience that is driven toward value co-creation under and through the expertise belonging to a restricted circle of acquaintances. The individuals belonging to this club don’t share seats on companies’ boards but seats in standards development organizations where their expertise is the usual mean of social communication and currency of exchange for personal confrontation. At the same time, such expertise is recognized not on a purely technical basis but also because often coupled with knowledge about the context, i.e. the field of knowledge. Such contextual knowledge is fundamental in pushing innovations toward novel applications and this is testified by the fact that the losing coalition mimicked the old-boys club in its use of white papers or in the external connections sought: for example, they started to have conversations with the Open Geospatial Consortium, that is an old and powerful standard organization that works with the specifications of digital maps.



# DATA ANALYSIS: selective coding



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Figure 10. Selective coding and identification of the core category

## DISCUSSION AND IMPLICATIONS

The initiatives put in place by FT had been developed following the strategic intent set by founding members, i.e. “enabling broad industry adoption and foster commercial deployment in a mobile environment”. The ILA chair, an experienced Nokia manager formerly in charge of many projects at a corporate level, set such intent at alliance inception and although initiatives were selected upon approval of the majority of members their approval was strongly influenced by the fit of the proposal with the strategic intent. However, at the end of the field study the organizing principle, that is “what do we do, as an organization?”, was no more the construction of an ecosystem but the creation of a group of pressure and lobbying towards bodies of standardization. The organizational change occurred because of the shift of control from the hands of Nokia to a coalition formed by Qualcomm, Cisco Systems, Broadcom; Samsung and CSR. This coalition was able to catch the control over consortium’s fate by putting in place “old-boys club” initiatives endowed with strategic fit (i.e. a match of the initiative proposed with the strategic intent) and feasibility (i.e. capabilities) at the same time and resulted highly successful. On the contrary, “common denominator” initiatives were designed to gain management support through strategic fit first, then by demonstrating feasibility on the run; most of them resulted unsuccessful. Thirdly, a “crowd” of members pursued “horizontal configuration” strategies by jockeying between different verticals and got involved into the alliance operations only when interested to the knowledge co-created by the old-boys club or to the contextual knowledge allowed by the occasions of interaction such as plenary meetings or conference calls.

Such crowd of fellow travelers mostly adopted an observing behavior: we guess that for these firms the alliance was a mean for establishing informal relations and acquire fundamental contextual knowledge for diversifying their technological knowledge into many different industries: such

redeployment was not aimed to go to the end-customer in a vertical fashion but directed to have working relations with companies close to the end-customer, the so-called VAS (Value-added resellers); such strategy of horizontal configuration is put in place by start-ups or small firms aiming to deploy their technological innovations in many sectors and through such VAS because they don't have the resources to customize their solutions for any customers and the routinized ability to keep the pace of customization with the end-customers' requirements. On the contrary, the standards approach of fellow travelers operating at a global scale and enormous volumes of revenues was on an opposite direction: they needed to have a certain amount of volume of transactions before entering or creating a novel industry. Especially for such operation a collaborative journey entails a long temporal horizon and the possibility to have an interoperable sets of standard shared with strategic industry players, literally "stimulated the greed of some of us" (quote from interview # 20131028 with informant). In-between is possible to observe the position of "common denominators" initiators, whose main concern is to have results from the time and resources invested.

What's surprising about these findings when compared to recent advancements of the strategy making stream (Canales, 2015) is that the organizational change allowed by its adaptation didn't occur through a process of constructive confrontation this type of confrontation, when iteratively enacted, should support the organization to understand what pieces or activities can be added to the system and what cannot without threatening its "functioning". On the contrary, evidence indicates that power accrued progressively to the initiators less prone to have constructive confrontations, but mostly destructive toward proposals coming from a different group or from a member not part of the system architecture working group; at the same time, the power vanished progressively from the

hands of those more prone to have constructive confrontations or more benevolent in favoring the proposition of others' views.

This attitude was fulfilled by adopting broad and seemingly complementary agreements marked by small wins: for example, many times the simple possibility to have a telephone conversation with a fellow traveler working for a company based in another continent was deemed as a valuable result even when the conversation had no particularly positive outcome or actually didn't happen at all. This suggests that, besides the business opportunities, the most common interest in stake for fellow travelers is the acquisition of different types of knowledge, either technological or contextual or relational, around the field of interest. We therefore suggest in the discussion part a theoretical framework capable to explain why such dynamics of co-creation are not fully determined by strategic fit and feasibility and why the organizational drift was fueled by a dynamic contrary to the constructive confrontation. That is, the concepts at the heart of the strategy making stream and its account of organizational change: of course, the aim is not to disconfirm this perspective in its traditional focus of attention, i.e. the intra-corporate venturing process, rather to enlarge its theoretical framework to inter-organizational settings by adding an expert-based view of power. Such explanation is consistent with previous work on technology convergence (Hacklin, 2007) and forms of power in project-based settings (Dahlander and O' Mahony, 2011).

## **Competing interests “nested”**

It's useful from an analytical point of view to think about a basic agreement for collaboration as a compromise synthesizing competing but complementary interests: but from a phenomenon-driven perspective, and considering how much stake is entailed by processes of innovation in high-velocity environments (Eisenhardt and Bourgeois III. 1988), this is fundamentally simplistic. Indeed, and only assuming these are somehow sketched and formulated, private interests may be partially overlapping one with the other, making the agreed one different in terms of scope from the mere sum of the parts. This assertion is consistent with ecosystem theory that stresses the benefits of collaboration between a product maker and its complementing elements: but the fact that private interests at the inception of collaborative journeys are not perfectly fitting leaves open a twofold question about what kind of imperfect configurations do they take and how are they eventually harmonized and negotiated in the making.

We argue that instead of fitting one with the other, objectives are more likely to be nested under an overarching (though agreed) interest:

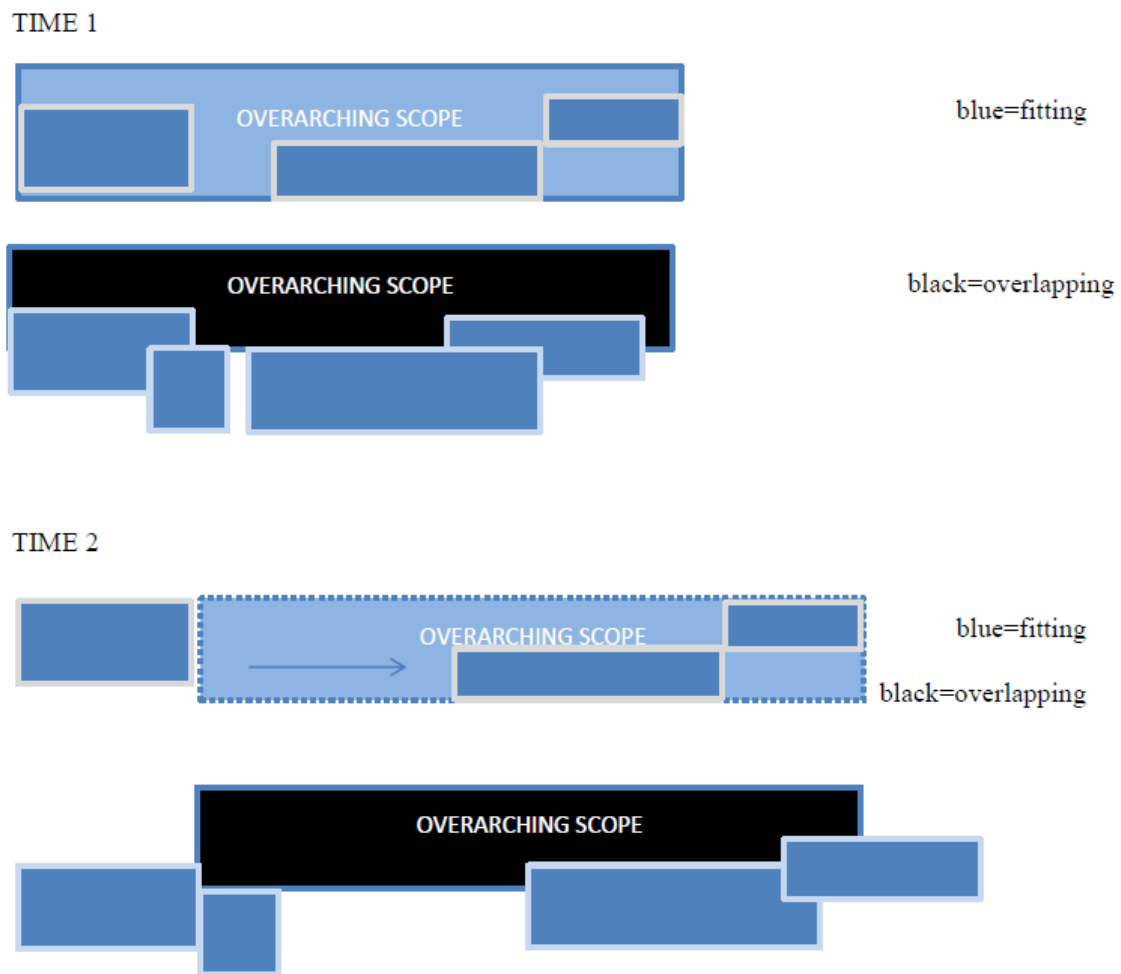


Figure 11 – Competing interests nested

Under the blue-colored scope interests fit within an overarching higher order framework; under the black-colored scope they are attached and nested under a bigger and overarching umbrella: what we suggest with this assertion is that an overarching objective can help to keep in its shadow other more individual objectives that are overlapping and competing; if such individual objectives are pursued through decision-making processes and initiatives accounting for the political aspects of the opportunity race, they might be likely to change in dimensions and orientation at time 2, ultimately affecting and moving the overarching objective.

Thus, in a dynamic fashion, it's misleading to say that private interests are kept in the shadow, instead they are worked on *in the shadow of an overarching scope*. Underlying the conceptual proximity of this idea with the umbrella strategy developed by Mintzberg and Waters (1985), it's useful to contextualize at an inter-organizational level the dynamism and reckless unsettledness of the individual interests and the consequential shift of the overarching scope: quoting Mintberg and Waters, "when an arm pokes outside the umbrella, you either pull it in, leave it there (although it might get wet), or move the umbrella over to cover it (1985: 264)". We'd like to qualify the latter move by considering that, once the umbrella is open (and in conditions of loose control over the nested interests), the interdependencies and links created by the overlap between the individual interests will force the umbrella to follow the outing process and leave out organizational actions that ultimately resulted wiped out, such as the left ones in respect to the black-colored scope of Figure 11. The lack of organizational control over the sub-objectives makes such process unfeasible if objectives are fitting perfectly because the scope will need to be reformulated and this is seldom the case unless individual objectives are legitimized to overlap.

This poses a formidable challenge when the terrain of contention is promising in terms of opportunities: it stresses the political aspects of decision-making processes because no individual objective is admittedly legitimized to replace the collective one nor overwhelm it if different parties are called at the table.

### **Politics of decision making in the literature**

Foundational studies on the politics of decision-making depicts decision-makers as having different goals: they come together through coalitions and (usually) the preferences of the more powerful triumph (March, 1962, Eisenhardt and Bourgeois, 1988, Eisenhardt and Zbaracki, 1992); forming

a coalition with external entities is not the only possible move to secure cooperation as others may include cooptation, strategic use of information, agenda setting and use of outside experts. Importantly, an implied articulation of many studies on politics of decision-making is that coalitions, i.e. social reifications of processes of coalescence around interests, are basic social groupings that ultimately are used as means for changing power structures: power structures are in turn composed by other coalitions around other opportunities. Indeed, Narayanan and Fahey (1982) have theorized the micro-politics of decision-making processes by offering perspectives of organizations as political entities where coalitions form around interests and demands that originate either within and outside them (Thompson, 1967, Mintzberg, 1983); the gestation of decisions is the last step in a process of logical incrementalism that starts when individuals become cognizant of an issue (1).

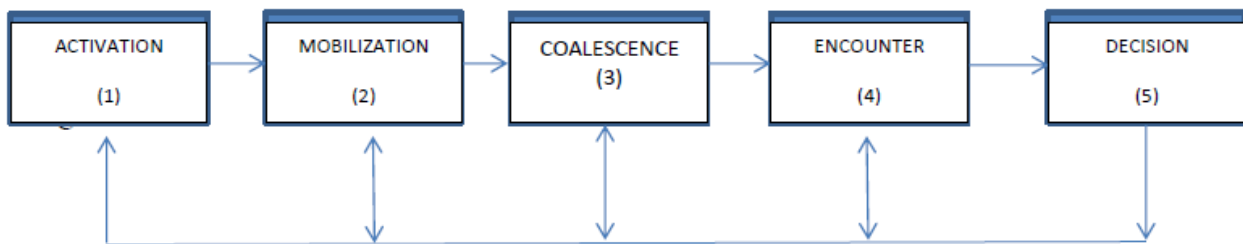


Figure 12. the political process of strategic decision making (from Narayanan and Fahey, 1982)

Once a sufficient level of clarity and appropriateness permits to use basic social scripts such as language, the issue can be articulated and leads toward the mobilization of others by increasing the number of inter-relationships around the issue (2): when action to resolve the issue is considered unavoidable a coalition forms (3) that later interact with others (4) and through the use of gambits and stratagems leads to a decision (5).



What decision? Any decision can be fine until it's broad and overarching enough to create an umbrella strategy under which individual interests can be prospectively worked on while obscured and covert (Mintzberg and Waters, 1985): it is at this crucial point of organizational decision that we think ecosystems' original formulations need to be qualified and extended in order to include a certain degree of pro-activeness by companies in responding to opportunities: we argue that companies will try to frame the whole nested array of interests into a functioning structure of collaboration instrumental for their different and competing interests. Basically at the dark, they'll be cognitively forced to give sense to their actions under conditions of bounded rationality (Simon, 1991) and will follow a simultaneous logic of appropriateness and association (Holm, 1995).

### **New forms of inter-firm interactions**

As said, processes of vertical disintegration and industrial commoditization very often entail the necessity for companies to engage in inter-firm relations and gatherings because of the threats for their survival implied by such trends. Commoditization is sometimes referred to as the opposite of opportunity because narrows down the scope of a company's offering, transforming into a commodity or a utility what once was a differentiated product or an innovative service: commoditization is considered a nightmare in ecosystems' theory (Moore, 1993). Phone services or electricity are typical examples of offerings that became commoditized due to co-evolutionary processes of convergence of knowledge, i.e. not under a firm's control, that ultimately erode companies' margins and forces them to engage in processes of self-renewal. At the same time, vertical disintegration due to modularity poses equal challenges (and opportunities) in terms of business model re-configuration because knowledge and technology converge but the applications' scenario is broader.

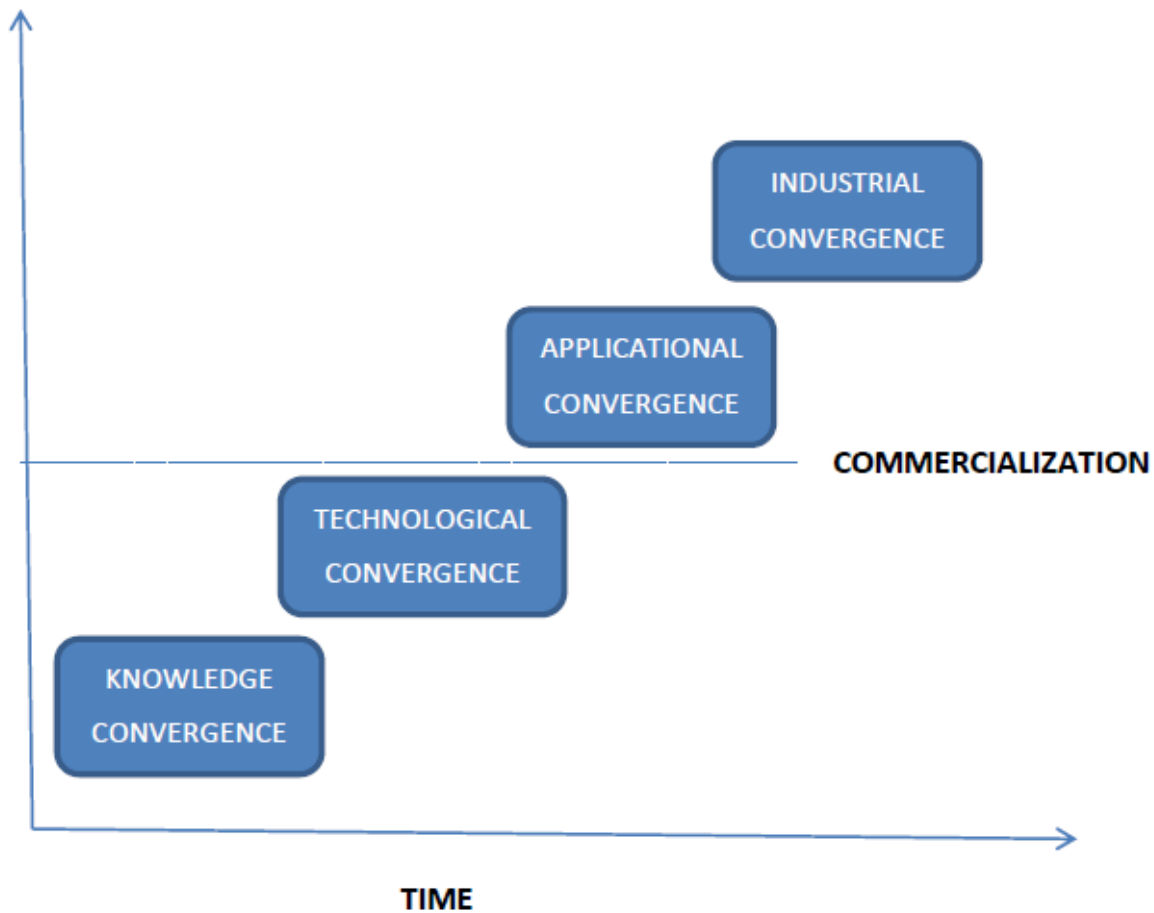


Figure 13. Phases of convergence (adapted from Hacklin, 2007)

Hacklin (2007) offers a dynamic view of such convergence: according to his framework (see figure 5) when (a) knowledge bases start to have common points and technologies converge, and (b) a commercial phase has not started yet, the existing mechanisms of value creation start to get deconstructed: this may be due to ineffective firm-level knowledge protection, although phenomena such as open innovation or selective revealing do occur (Chesbrough, 2003; Alexy et al., 2013), or to modularity, that erodes industries' vertical structures (Baldwin and Clark, 1997), therefore way beyond firms' control and allows forms of recombination into new business models driven by horizontal impetus between different vertical structures (see figure 14 and 15 with two value chains distinct and afterwards "blurring").

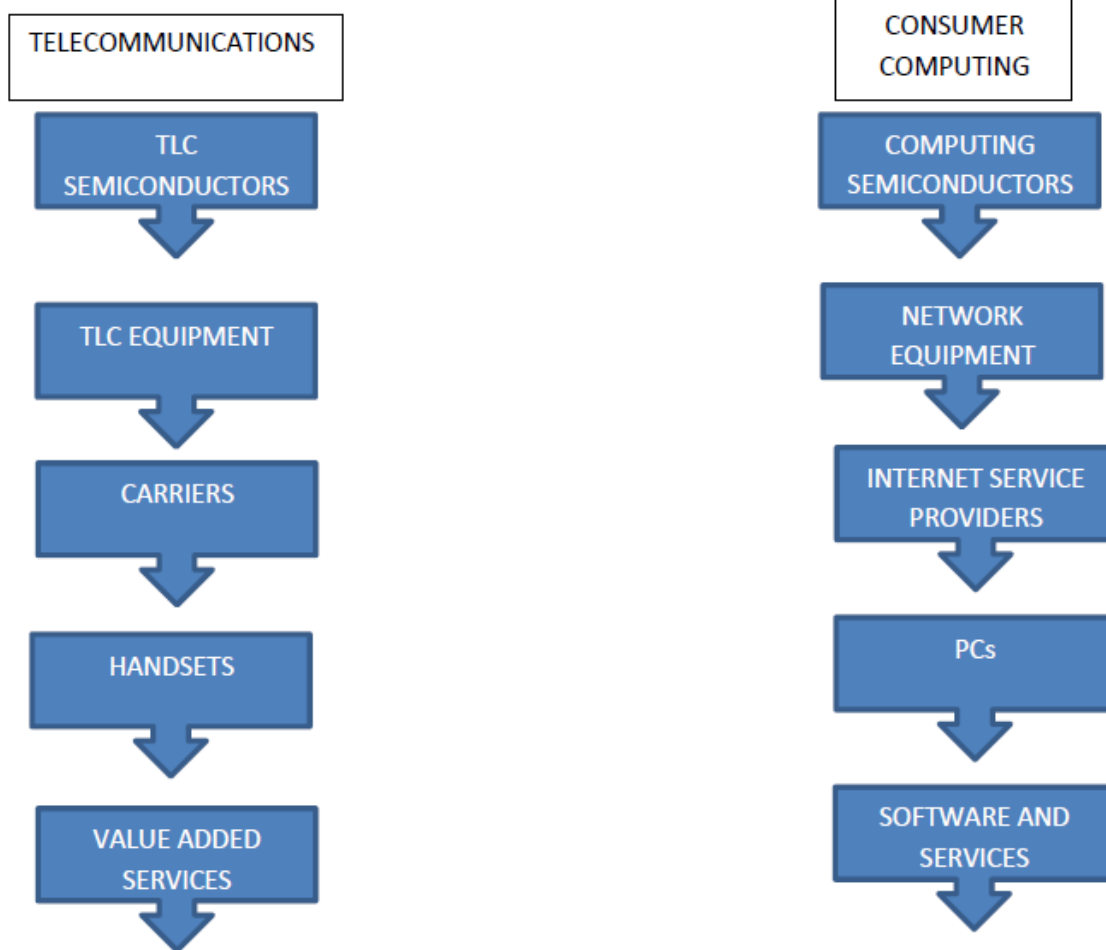


Figure 14 – TLC and consumer computing value chains (from Hacklin, 2007)

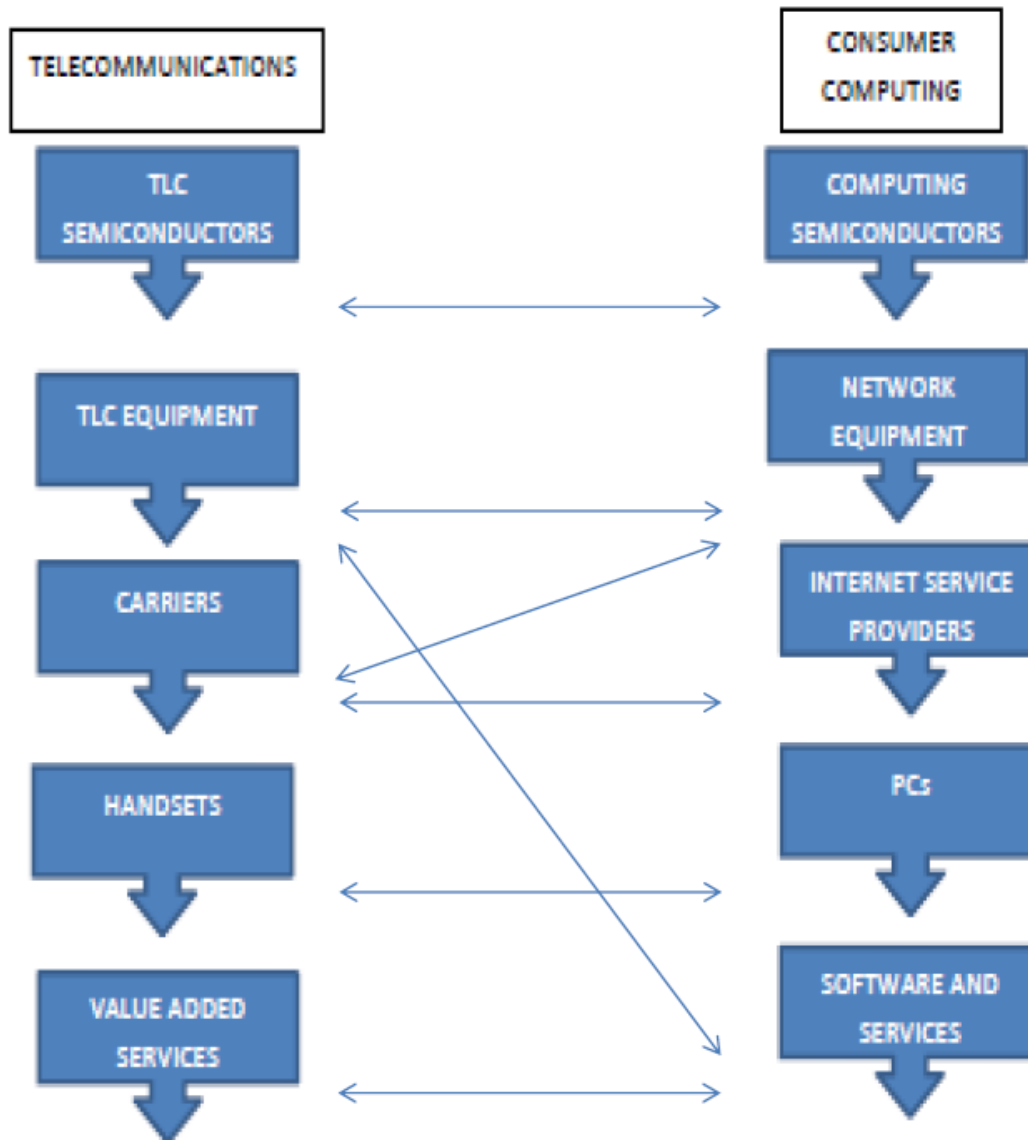


Figure 15 Horizontal impetus between established value chains (adapted from Hacklin, 2007)

The disintegration of existing verticals therefore makes the field highly unstable and entropic because companies have to re-configure viable value propositions into new value chains: some, especially what Hacklin defines “pioneering disruptors” (p.91), do seek to re-configure the value mechanisms through recombination of activities that belong to different verticals through, as said, horizontal impetus. In addition, un-validated value networks emerge over previous incumbent chains of value: Jacobides (2005) and Jacobides and Cacciatori (2005) have stressed the paradoxical

assertion that incumbent firms' impetus occurs along deconstructed value chains: quoting Hacklin (2007), "although retainment of vertically integrated (structures) from firms' perspectives are no longer viable solutions, and horizontal orientations of firms allow more complex, and distributed forms of value generation mechanisms to emerge, certain trends of verticalization on an industry level *do however continue* (p. 91, emphasis added)". In other words, incumbents do tend to verticalize through hybrid and loose vertical structures, that is very different in terms of control and entrepreneurial vision in respect to re-integrate vertically. We clarify further this concept because it resembles many views of research that have stressed the traps encountered by incumbents trying to self-renew themselves during critical periods of margins' erosion and change: thanks to modularity a product can be produced and exchanged efficiently in vertical structures that sometimes are very different one from the other (horizontal impetus); although endowed with more resources compared to small scale pioneers, incumbents may find harder times because they have structures and organizing principles less malleable and more difficult to redeploy in such horizontal bridging because such leap requires to overcome inertia. What's more viable and consistent with incumbents' routines is the possibility that they re-frame the entropic situation by referring to the same vertical landscape they are used to operate and compete: sometimes this vertical impetus can be an effective and legitimate operation of refocus of the offering at a lower or upper layer of the vertical, leading to a platform strategy and avoiding the firm to get stuck in the industry bottleneck.

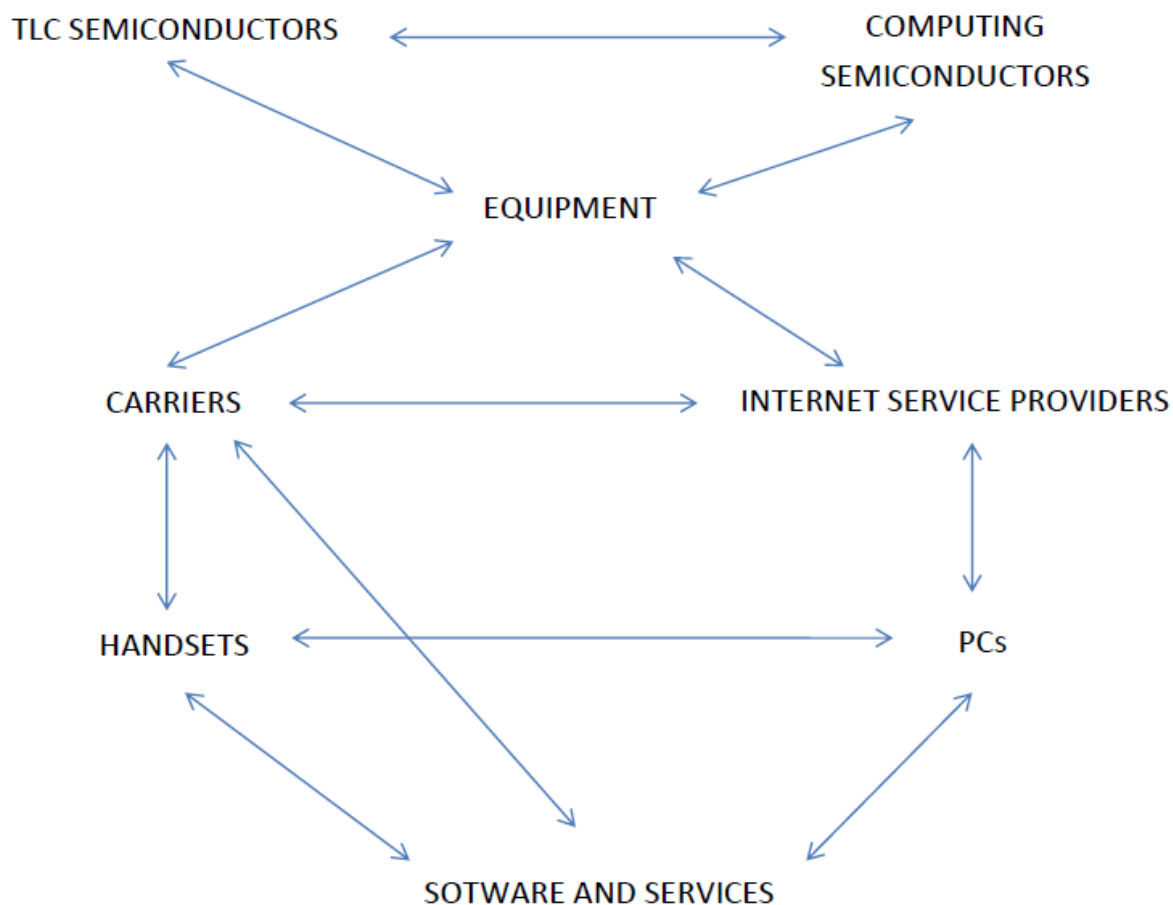


Figure 16– Disintegration of value generation into network (from Hacklin, 2007)

To sum up, there are phases of knowledge and technology convergence that simply force companies to re-configure their value propositions in new fashions: in such phases horizontal and vertical *impetus* guiding companies' reconfigurations have to consider that value chains become value networks (Stabell and Fjeldstadt, 1998) highly uncertain and entropic. This, in turn, leads to new forms of inter-firm interactions centered on pursuits of opportunities for re-configuration: formation of interest groups, consortia and lobbying activities toward standardization bodies happens in this phase, similarly to the context of inter-organizational collaboration and the interaction dynamics accounted in this study.

## **Consortia and interest groups**

It should appear clear now that such sudden explosion of inter-firm interactions can be channeled into a social structure that constitutes the terrain devoted to the proactive pursuit of competing interests under an overarching collaborative scope. In particular, we think that “special interest groups” and consortia between different companies and organizations constitute exactly the fuzzy though basic structures that companies use to manage their collective races for opportunities: according to Barringer and Harrison (2000) consortia are formed by “groups or organizations that have a similar need and band together to create a new entity to satisfy that need at all (p.389)” and “tend to group together a lot of different entities (p.389)”. Exactly because affected by a general disadvantage in terms of governance mechanisms, consortia may paradoxically result organizational structures more malleable and effective for driving competing interests and influence the overarching goal than, for example, trade associations, where governance issues are not so salient, or interlocking directorates where the cooptation occurs more on an exchange logic basis. In this sense, if it’s unclear how the different interests can result in a new configuration of value, the benefits of consortia are more driven by strategic considerations of flexibility in respect to those regarding economic value (Doz, Hamel, 1998): they present an interesting combination of clear external boundaries formalized through membership decisions and internal lack of social barriers for acquiring many types of knowledge. In other words they can be represented as clubs where, once granted access, individual companies may have great discretion in jockeying and political moves (Goffman, 1981). An example is given by the work of Garud, Jain and Kumaraswamy (2002) on the sponsorship of Java as a common technological standard: the authors stress the co-competitional and structurationist nature of the process and the need for political and social skills in order to orchestrate the collective process of technology sponsorship.

## **Technological fields and coepetition**

We think that what considered so far is pertinent to many technological systems; a technological system is a set of components that interact with one another to provide utility to users (Garud, Garud and Jain, 1997). A key factor is to design compatibility among components in order to allow interoperability between different modules and in this sense the system architecture must be designed accordingly. But between the technological system and the whole field there exists an institutional void that requires the establishment of rules or the replacement and modification of existing ones: indeed, rules govern the production and distribution of associated artifacts (Van de Ven and Garud, 1994) and shape technological fields (Garud, Garud and Jain, 1997). A key facet of such institutional space is therefore given by technological standards such as the interface specifications that establish the “rules of engagement” within the technological system. Common standards when successfully shaped can give competitive returns and particularly for products that present network externalities (Langlois and Robertson, 1992; Barnett, 1990).

Garud has talked about sponsorship of common technological standards in terms of institutional entrepreneurship at the level of the industry (Aldrich and Fiol, 1994): institutional entrepreneurship is given by one or more initiatives where a new system is tied together along with existing sets of institutions, that is “taken for granted aspects of life (Meyer and Rowan, 1977).” We take a less individualistic and heroic perspective in order to stress the interplay of meanings and interactions that emerge through a negotiated process in a technological field (Pinch and Bijker, 1987): at the same time we conceptually adopt Garud’s depiction of the technological field as containing the technological system.



This implies that race for opportunities are not only characterized by competing interests nested under an overarching scope that resembles the “umbrella strategy” described by Mintzberg and Waters (1985); they are also characterized by decision-making processes aiming to harness the coalescence of units around an issue in order to influence the decision accruing to the group. In industrial settings populated by economic agents such as companies and firms this is likely to occur when knowledge and technology convergence broadens the potential applicative scenarios: the entropic situation is due to the disintegration of existing value chains and the horizontal and vertical links between these that managers and entrepreneurs will strive to establish in order to catch viable opportunities of re-configuration. The latency of such opportunities gives rise to collective actions of market molding such as interest groups, standard consortia and lobbies: these aim to give an enabling and at the same time constraining direction to the opportunity journey in order to make the possibility to compete in the market concrete for all travelers.

We build on two related theoretical streams to suggest that companies will respond to opportunities through socially constructed structures for two reasons. First, sociological theories of reality as a social construction (Berger and Luckmann, 1968) point to the self-recursiveness of social life; people tend to act in social situations in ways that are not objective nor subjective but that are the externalization of the social reality previously internalized as an outcome of interpersonal interactions. This means that companies representatives will resemble the “inception reality” with the array of knowledge that mostly accrues to them, i.e. companies and administrative structures themselves: the more crowded are opportunities at their onset (rather than populated by few players) the more we consider this possibility valid. One-o-one relationships between companies are usually formalized through formulas going from licensing to strategic alliances, i.e. formal agreements; multi-party alliances are on the contrary formalized through consortia, and both alternatives are

forms of human organizing highly institutionalized and interiorized by managers; we suspect that in operations aimed to reduce the perceived uncertainty of the surrounding environment managers will rely upon such organizational formulas almost automatically. On the other side, we claim that such attitude is not completely conscious or meaningful but socially driven, highly voluntary and fundamentally opportunistic. In this sense, structuration theory (Giddens, 1984) suggests that social groups, from individuals to entire social systems, may exactly do this, i.e. *enable and constrain* action, therefore “guiding” social groups to carry on whatever the objective but conditional on the existence of an objective. In highly contested terrains of opportunities where competing interests are nested under the same overarching framework this might likely be the case.

Both qualifications of how individuals seeking opportunities for their companies can react seems almost logical considering the emphasis of first ecosystem theories on collaboration: we take advantage of this subtle assessment to consider the adherence of innovation ecosystems to co-competitive strategies (Brandeburger and Nalebuff, 1996) and to avoid ambivalence on a such delicate issue.

Indeed, the results of the study imply that such journey is not completely competitive nor collaborative: the topic of competition, collaboration and also co-competition has been scrutinized during the phase of theoretical sampling but its pure application to the research context seemed useful though to a limited extent. This is not to say that the evidence of the study indicates that people or companies don't compete for scarce resources or that competition doesn't exist: instead, people and companies do compete and accounts of competition are at the heart of many game theoretic, economic and biological models. Nonetheless, competition and collaboration are not mutually exclusive but fundamentally co-existing in modern societies: the difference between them is that collaboration is a relational stance highly legitimate in social accounts of modern life

sophisticated enough, while competition is not. Instead, direct and forward competition within social groups is strongly sanctioned and kept marginalized and “suspended”; direct confrontation is more and more avoided in Western societies as individuals prefer to keep it latent, therefore under the table and out of sight (Elias, 1978). Companies are no exception in this perspective and what follows is that encounters between competing carriers of interest are administrated and pursued in isolated venues where the rules of the game are explicitly set to avoid direct confrontation and promote collaboration among those coming together. Such collaborative stance is a natural social refining of the individual life of Fellow Travelers whose primary way of dealing with others is related to a technology-product and the context around which such product is created and pushed. Equivalent to Elias’ account of how court life became a social code to access spaces inhabited by political elites (1978), the expertise of technologists is its updated version to relate to a point of interest. Standards development organizations and regulatory bodies are the contemporary versions of the King’s court where bloodbaths are sanctioned. Another point of reformulation of Elias’ historic account is in the disintegration process of the previous generation of handset devices and, as a consequence, of the Alliance’s initiator: like a falling empire, the disintegration of the former giant left many technologists on their own, eager to re-deploy their capabilities and fundamentally looking for another point of coalescence shielded from competition. It is therefore simplistic and misleading to see the expertise capable to influence so dramatically processes of industrial creation as an excluding means for an elite to reinforce its power. The final part of the study is therefore aimed to offer a model of guided evolution where learning is key and the power relations center on soft power rather than hard.

## CONCLUSIONS

The introductory part of this study asked what are the micro-dynamics of collaboration when the boundary between the collective goal and the individual interest is fuzzy and ill-defined: the individual and group level activities performed by co-creators were characterized by dynamics of collaboration highly political and centered on closing deals covering, first, the chase of co-creators toward their own company's interest and, second and eventually, others' wishes. The high ambiguity entailed by the covert nature of these deals seldom let the individuals involved make sense of what could become a meaningful activity for "the other", therefore blocking a mindful choice of a recurrent activity capable to put at the same table different groups with a meaningful activity. The high rate of failure of those initiatives mostly geared to keep the fellowship unite and to embrace as many partners as possible strikes against the ability to co-create value performed in the experts' gatherings. In the expert group, capable to influence the fate of the fellowship and guide the herd, the ambiguity toward the other apparently was not occurring; instead, it maintained high coordination and rate of average contribution among group participants although it resulted the only group or recurrent activity to change leader during the 13 months of field work. This indicates that what was at work in such group was not only a refinement of an architecture but also a high endowment of group coordination skills. Indeed, as long as the old boys work was performed in a well-known socio-professional circle (in-group activities) rather than the pure accomplishment of a task authoritatively prescribed by the formal hierarchy (such as the activities characterized by interactions with the external), it resulted working in a smooth and comfortable fashion. This opposition between expertise and formal authority resembles Follett's account elaborated by Dalhander and O'Mahony (2011): tracing the origin of the concept of horizontal authority in the late 20s, they notice that "when she (i. e. Follett) made the argument that authority should not

depend on one's hierarchy of rank but where knowledge and expertise were closest- at the task level (2011, p. 962)". The present research aims to strengthen this perspective through a field study that theorized on the political side of such dynamics and has a natural by-product in the implications in terms of power. The dynamics unveiled in the ILA story, such as the failure of Nokia's intent and the progressive shift of control, reveals that a collective action, such as the evocation of an ecosystem of complementors, cannot be coordinated by using the mechanics of hard power traditionally associated with the enactment of leadership by large firms. Instead, means of the so-called soft power (Nye, 2004; Kwak, Yoffie, HBR, 2006; Santos and Eisenhardt, 2009) that resemble the concept of lateral authority were exercised by the emergent leading group and resulted much more effective in stimulating collaboration and interaction from the alliance members, at least compared to the authoritative style permeating Nokia's temporary leadership. Finally, the majority of individuals representing small firms and startups limited their participation to an observing behavior and used the spaces created by the nestedness of so many interests to establish connections and configure potential value propositions with partners. The findings of the study support also a need for underemphasizing the role of the design of organizational structures in collaborative projects. Quoting Yoo, Boland and Lyytinen (2006), "By treating organization design as a choice among pre-existing alternatives, current organization design approaches lose the very idea of design as form giving. Yet, the future of our economy will be dependent on creating products and services that never existed before. It requires imagining a new world, designing artifacts to put into it, and inspiring others to follow (Yoo et al., 2006, p. 228)."

### **An expert-based model of guided evolution**

The evidence extracted from the study and the analytical work performed on data allowed a thorough understanding about ecosystems and value networks: the capabilities of participants are

fundamental to make a project-based form of organizing advance. Such advancement occurs through adaptation with demands fueled by a process of learning enacted by the mechanisms described in the model below. The model is adapted from the model of guided evolution of Lovas and Ghoshal (2000) and depicts from left to right who are the elements sourcing the variation, i.e. potentially all members; such variation instantiates in initiatives at the group level and in the human and social capital possessed by individuals; the instantiations can materialize by virtue of the formal structure that the multi-party project can assume, in this case a special interest group; finally, the actors in charge of selecting which variations has to be retained or not, that is the old-boys club. Organizational change occurs through a drift of the organizational principle that takes the form of a *ex-post* rationalization in the eyes of participants whose answer to the question “what do we do, as an organization?” changes over time. Differently from accounts on sources of selection in strategy making (Canales, 2015), the evidence indicates that in settings with distributed leadership and participation is channeled through project work the learning process underlying the organizational adaptation is not sourced through constructive confrontation but through an expert-based attitude. This means not only that criteria are more stringent than those suggested by formulas wishing openness and democracy, but also that the power to influence the evolution of an ecosystem accrues to a very limited fellowship of experts. In this sense, the present research may contribute by constituting a potential bridge between the focus on initiatives and organizational adaptation of strategy making scholars, the interorganizational concerns of ecosystem conceptualizations and the construct of lateral authority as a form of power in project-based settings.

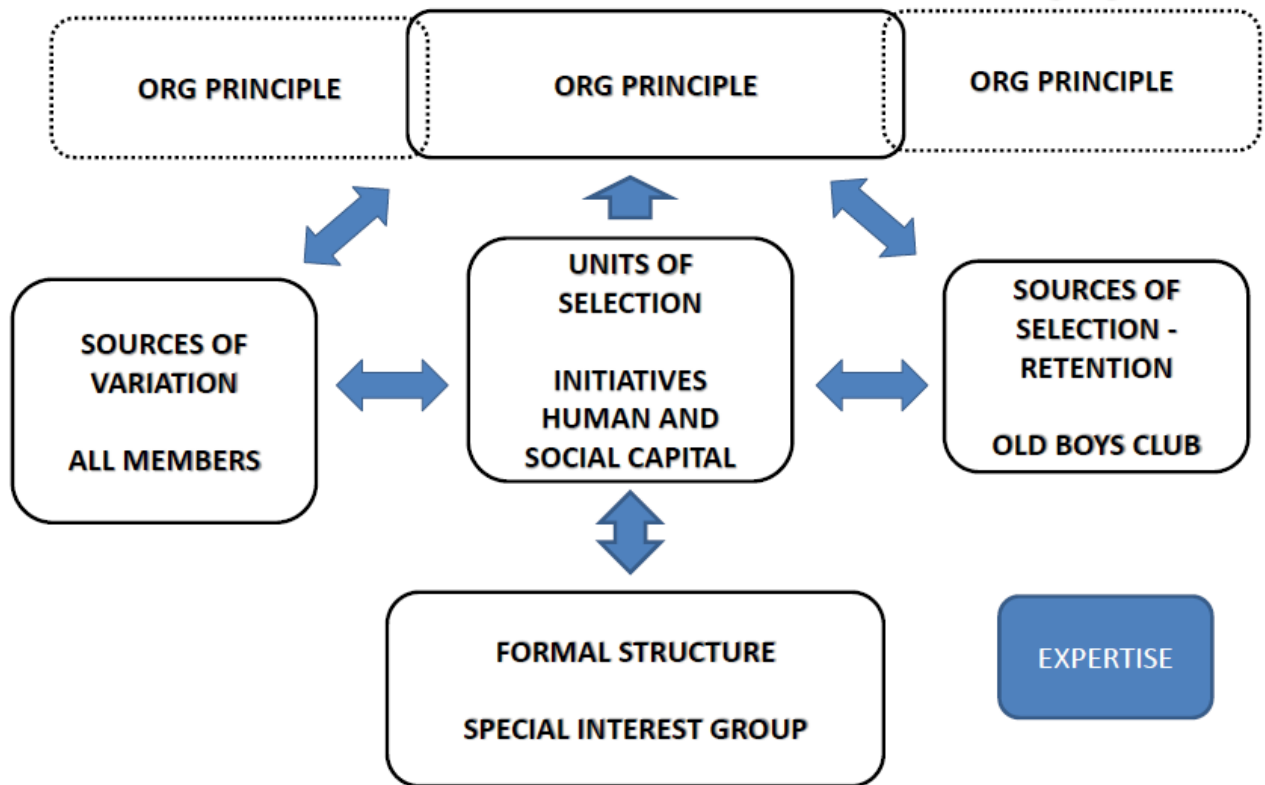


Figure 17. An expert-based model of guided evolution (adapted from Lovas and Ghoshal, 2000)

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