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Relationships between Governance Structure and Corporate Risks: Implications for Risk Management in Business Networks

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Abstract

Few researches on business networks have focused on risk management and stakeholders' risk exposure (Hutter and Power 2005; Miller, Kurunmäki and O'Leary 2006). This paper deals with the relationship between the governance structures of "networked" entities and corporate risks. In particular, the research reflects on: *i.* how the participation of enterprises to networks and corporate groups affects corporate risk determinants; *ii.* how stakeholders' attitudes to risk change when they have a double economic interest (e.g. as stockholders and as suppliers) in the firms involved in networks.

The essay aims to demonstrate that governance structures and mechanisms selected for making networks work influence: *i.* enterprises' risk exposure; *ii.* shareholders' and other stakeholders' claims and residual reward rights. The assertions start from drawing up an "analysis model" of risks in network organizations and they are supported by case studies about industrial and financial enterprises engaged in networks.

The final part of the paper identifies some implication for risk management of enterprises attracted to networks and suggests directions for further researches on management of risk in hybrid organizations.

Key words

Business networks, hybrid organizational forms, risk management, corporate risks, stakeholders' risk exposure, corporate governance.

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1 Research Objectives, Hypothesis and Theoretical Framework

1.1. Corporate governance, risk management and hybrid organizational forms like networks represent economic issues that have been recently more and more drawn together by researchers, business operators, politicians and of course the media.

Such issues have been the subject of frequent analyses and interpretations from various researchers belonging to different research streams for a few years now. But, in the meanwhile, alterations occurred in competition structures and normative systems have been calling for continuous updating, refining and even rethinking of the interpretation models developed in different historical moments. In particular, some novelties have recently gone through all three above-mentioned research fields thus attracting new attention from scholars, agents and the media:

a) a deep “normative turning point” has affected corporate governance systems worldwide. All interventions – from legislative to self-regulating ones – have been so far directed to reinforce corporate governance models and practices in all businesses – particularly listed ones, where the position of minority shareholders deserves a special attention – and have aimed to avoid repeating the scandals to which well-known companies it is useless to mention in full have been drawn; in view of such normative turning point, new studies have stood out to assess the impact of model changes and corporate governance rules on a company’s accountability and its financial performances according to a widespread but not yet confirmed belief that “a good corporate governance improves performances” (Bhagat and Black 1999; Black, Jang and Kim 2003; Brown and Caylor 2004; Demsetz and Villalonga 2001; Gompers, Ishii and Metrick 2003);

b) risk management models and procedures are being largely applied within the companies, at least to give some evidence to the progress accomplished in governing high-risk situations and in avoiding all risks of internal or external fraud. Specific professional figures (such as the Chief Risk Officer) or corporate functions (such as the internal auditing) have been progressively implemented at least in large-sized companies or companies with complex organizational structures; at the same time monitoring systems are being applied to simulate the impact deriving from the occurrence of risks. In this respect, researchers, besides suggesting models for quantifying the impact of specific risks, are giving more and more relevance to defining “integrated” risk management systems – enterprise risk management (E.R.M.) –, which allow to draw a map of all risks a company can be exposed to (Banks 2002; Beaver and Parker 1995; Beretta 2004; Beretta and Bozzolan 2004; Boyadjian and Warren 1987; Brown and Chew 2005; Eeckhoudt and Gollier 1995; Figlewski and Levich 2002; Shaw 2003; Young and Tippins 2001);

c) finally, the spread of network or hybrid organizational structures that are considered as suitable “organizational solutions” to the development of businesses both at the local level (that is at district or regional levels and so on, like the case of district companies still partly alien to internationalization processes) and at the international level (like with partnership relations between foreign enterprises). The diffusion of partnerships and business networks in the automobile, energy,

electronic, bank, insurance and other sectors is a pervasive phenomenon, quite independent from the sizes of the companies it affects, as both “small” and “big” enterprises alike increasingly prefer such a growth pattern. Facing the diffusion of such an “organizational solution”, international literature is progressively looking in the same direction, putting forward new interpretational models with the objective of giving evidence to its main strong points on the one hand, and defining theoretical frameworks for the analysis of its peculiar characters on the other (Boris and Jemison 1989; Grandori and Soda 1995; Hendrikse 2003; Hodgson 2002; Ménard 1996 and 2004; Nicherson and Heinan 2002; Palay 1984; Thorelli 1986; Wildolf 2002; Williamson 1985).

1.2. Considering the rising “convergence” of the three above-mentioned issues, the current paper aims to highlight how the peculiar characters of a company’s governance have an effect on the way such a company and its stakeholders are exposed to risks. In particular, it is to be verified what effects are produced on single corporate risks and on the corporate stakeholders’ risk exposure. Such a test is proposed by focussing on hybrid organizations made up of networks of firms that are alternatively or simultaneously connected among themselves through functional relations (i.e. operational and financial ones) and shareholding relations.

This research objective is pursued by integrating the proposals contained in available interpretational models with the indications coming from empirical analyses of corporate governance structures, risk management and business networks and bearing in mind above all the statements of the researchers showing the necessity for investigating partly unexplored paths. In this perspective:

i) on the one hand, it has been pointed out how the relations between a company’s governance mechanisms and its being set in a network of agreements, contracts and business relations have so far received only a partial remark by researchers, while it has been demonstrated that belonging to a network enables a company to make “good” governance choices (Child and Rodriguez 2003; Ward 2003; Grandori and Carpani 2004).

ii) on the other hand, it has been demonstrated how the increase in the diffusion and formalization of risk management models have not been equalled by a decrease in the frequency of risk occurrence (Hutter and Power 2005; Miller, Kurunmäki and O’Leary 2006). This is also partly explained by the fact that such risk management models have not always developed in full agreement with the corporate governance structure which has – on the contrary – more and more been exposed to redefinition processes not matched by a parallel revision of the risk management systems. Conversely, such “organizational solutions” finish up by feeding new risks, the so-called “secondary” risks (Power 2004).

The hypothesis guiding this research, which – in the author’s opinion – can also be implicitly traced in the studies here briefly reminded of, consists in an inadequate “integration” – both at the theoretical and practical levels – between the system of corporate governance structure and the risk management; and that especially in complex and networked organizations where solutions designed to be suited to single firms do not prove to be easily “replicated”.

The hypothesis is tested through an “analysis model” that considers the above-listed investigation profiles; namely, such “analysis model”:

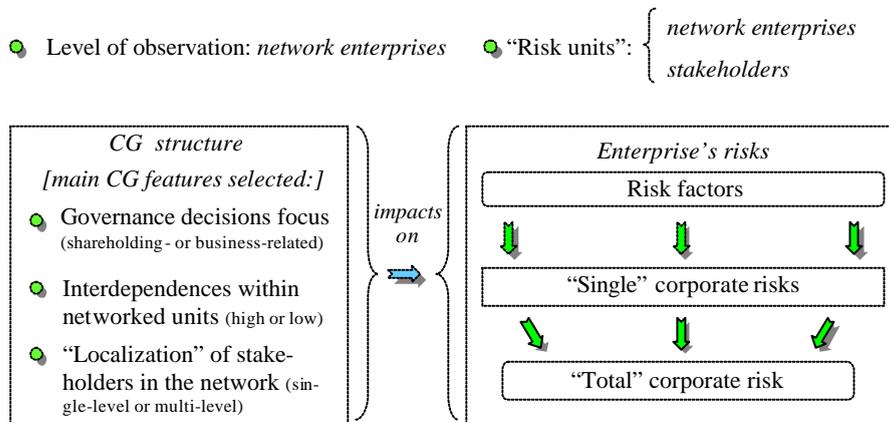
1) focuses on the observation level of the enterprises forming a network; in this perspective, two “risk units” are selected: the one related to such enterprises and the one referred to the stakeholders (shareholders and other stakeholders like workers, customers, suppliers, etc.);

2) takes into consideration the following three corporate risk profiles: *i.* risk factors (e.g., internal frauds, fluctuations in the rate of exchange, etc.), distinct as to internal or external to the single firm and to the network; *ii.* “single” corporate risks (e.g., operational risks, interest rate risks etc.), about which interaction conditions with risks related to the other network units have to be determined; *iii.* “total” corporate risk to which stakeholders and in particular the so-called residual claimers are exposed;

3) points out the influences of governance structure upon the above-mentioned risk profiles. In particular these corporate governance features are selected for the analysis: *i.* the governance decisions focus of each network unit; *ii.* the interdependence level among network units; *iii.* the “localization” of stakeholders in the network (distinguishing single-level stakeholders from multi-level ones);

Discovering the reciprocal influences between corporate governance system and corporate risks system allows for highlighting the relevance the integration between these two systems can have in the management of hybrid organizations.

Figure 1: An “analysis model” of risks in network organizations: level of observation, risk units, risk profiles and cause variables



1.3. In order to reach the above-mentioned objective, the paper considers the peculiar characters of governance structure of business network (§ 2.1), than it offers a definition of the effects of such structure on risk conditions in single networked units (§ 2.2-2.4) as well as on stakeholders attracted to such units (§ 3). It finally highlights the implications on corporate risk management processes followed by

some indications for further researches (§ 4). The selected case studies – developed through personally conducted, non-structured interviews to CFOs and managers – are presented in § 2 and 3 to give empirical evidence of the effects produced by governance structure on corporate risks and stakeholders' risk exposure.

The reference “theoretical framework” the paper moves within defines organizations as the entities to be analyzed in order to understand the economic mechanisms (Tirole 1988; Holmstrom and Tirole 1989; Milgrom and Roberts 1992; Ménard 1996). This research prompt is included in the paper by giving importance to the peculiarities of the governance structure and risk profiles of business networks and by drawing on the “toolbox” of the above mentioned research veins. In particular: *i.* the privileged theoretical framework is the one that – stemming from the “institutional theory” typical of Italian studies on business economics (Zappa 1927 and 1957; Onida 1951 and 1971; Masini 1968; Cattaneo 1969) – have already given significant contributions to the issue of networks, business combinations and business groups (Azzini 1974 and 1975; Brunetti 1983; Cassandro 1982; Dematté 1990; Galassi 1969; Lai 1990 and 2003; Lorenzoni 1983); *ii.* the precious observations and conclusions reached by scholars into the organization theory and new institutional economics (Aoki 1984 and 1986; Borys and Jemison 1989; Grandori 1989; Hodgson 2006; Powell 1987; Thorelli 1986; Williamson 1975; Windsperger and Yurdakul 2005) are considered as well; *iii.* the risk profiles widely recognized in international practices and literature (Borghesi 1985; Young and Tippins 2001) are selected.

2 Governance Structure, Risk Factors and Risks in “Networked” Enterprises

2.1. The above-mentioned hypothesis – i.e. governance structure influences both firms' and stakeholders' exposure to corporate risk – and the selected “analysis model” require to remind how governance structure is articulated in the business networks; this considering the corporate governance as the dynamic combination of: *a)* the subjects in whose interest the business institution is formed and developed; *b)* the contributions given by such subjects; *c)* reward modes owed to them; *d)* governance prerogative; *e)* the mechanisms that establish balanced correlations between contributions given, risks run, expected rewards, and that make a synthesis of practices typical of such governance prerogatives (Airoldi 1995 and 1998; Barzel 1989; Hart and Moore 1990; Milgrom and Roberts 1995).

The main governance characters of business networks can be summed up as follows: *1)* the “disarticulation” of stakeholder classes in distinct, identifiable organizational of business units forming the network (Blair 2004; Coffee 2001); *2)* the definition of governance choices and business strategies going beyond the “institutional boundaries” of the single units in the network (Child and Rodriguez 2003; Milgrom and Roberts 1988); *3)* the development of a correlation mechanism be-

tween contributions, risks and rewards that depends on the relations between the business units attracted to the network (Grandori and Soda 2006). In fact, in business networks the value production and distribution system of a single unit is interconnected with that of the other units, thus forming one at a “superior level” – the network level. The value contributed by a single unit to its own stakeholders is necessarily depending on the interconnections between it and the other firms in the business network, owing to a more or less wide range of interactions. In other words, the correlation mechanism between contributions, risks and rewards operating in the single units is based on the value production and distribution process put into action by the business network as a whole, for which the allocation of resources among single units and mechanisms regulating all transactions within the network bare on both the whole value production process and on the value distribution process among single units, then reflected upon the value distributed to their stakeholders.

2.2. Consistently with the selected “analysis model” and with the support of case studies, we will now describe the configuration of the risk system typical of networked enterprises, focusing first on the effects produced by the governance structure on risk factors, which: *i.* act as activation elements of enterprise risks; *ii.* express the key factors in the evolution dynamics of enterprise risks; *iii.* can be attributable to *internal management* and *external management* processes.

Corporate risks can be triggered and manifested by a combination of risk factors *inside the enterprise*, which are strictly related to the realization of *intracompany* processes, and risk factors *outside the enterprise*, resulting from the *system of transactions* occurring between the enterprise and its stakeholders.

An enterprise belonging to a network is on the whole exposed to risk factors that can be described as follows: 1) *inside-enterprise risks*, regarding the execution of company processes developed inside the enterprise; 2) *inside-network risks*, representing risk-determining factors embedded in other network units; 3) *outside-network risks*, more specifically, factors that are linked to the influence of the outside-network environment on the risk profiles of the unit being observed.

The enterprise attracted to a network represents a “*centre*” of *activation*, *attraction* and *transmission* of risks that were originally “localized” but now also affect other units, while the organizational context on which specific business risks fall remains in fact *limited* as long as single network units, or sub-group of network units, are able to *limit* such *transmissions*, thanks to equity arrangements able to dampen their effects or through operations aiming at reorienting the risk conditions of each single unit, or all units, even with manoeuvres aiming at expelling a certain number of units from the network.

2.3. The interaction among *inside-enterprise risks*, *inside-network risks* and *outside-network risks* determines the configuration of the “single” corporate risks’ system. The analysis of this system for the network unit is based on the following two profiles of the dynamics of the network company: 1) its *governance decisions focus*; 2) its *interdependency* with the other network units.

2.3.1. From the analysis of the first profile, a distinction can be made between two tendencies, that in reality correspond to the two *extremes* of a *continuum* where the businesses directly governed and those only indirectly controlled – i.e., through the shareholding relation – exert a variable effect compared to all businesses managed as a whole. The characteristics of the two *extremes* in the *continuum* can be described as follows: *i.* at one extreme the network unit has a “governance decision focus” on the management of equity stakes of the other units forming the shareholding-based network (e.g., joint venture); *ii.* conversely, at the other extreme, we find that enterprise that has a “governance decisions focus” on the businesses that it manages through its assets and those of the networked enterprises; this firm is linked to the other network units through informal or contract-based links (e.g., franchises, collective trademarks, distribution channels, etc.).

2.3.2. The second profile here considered is the *interdependence level of the network units*. A distinction can be made between situations where the interdependence level is high from situations where this level is low: *a.* in a situation of high interdependence level, the unit being observed creates with the other companies of the same network a series of articulated functional relations. A condition of high interdependence can also be found in situations where, even though few operational and financial transactions occur inside the network, the unit develops in cooperation with other enterprises some entrepreneurial ventures; in such context, the interdependence between the units is the result of a common knowledge used to design and than manage similar businesses; *b.* conversely, in a situation of low interdependence level the enterprise, irrespective of the level of potential complementarity with the other network units, is not involved in common projects and no intra-network transactions occur other than those typical of the shareholding relation.

2.4. As shown in *Figure 2*, the “combination” of the two investigated profiles produces a range of “typical situations”.

2.4.1. In the “typical situation” shown in the *first box* of the figure, the interaction with the other network units can only be based on complementary elements. At the “level” of the unit that owns the stakes in associated companies (joint ventures or subsidiaries), the following occurs: *a)* development of ideas and competences that inevitably influence the way businesses are managed by the associated units; *b)* a cash management style aiming at meeting the financial needs of the holding and the associated companies, through regulation of exchanges with a view to synchronize cash surplus of such units with the cash needs of others. At the “level” of the associated or joint venture unit, instead, the “actual” management of the business is conducted. In this situation, which is typical of enterprises leading groups and of sub-holding companies, the enterprise is exposed in large part to risk factors embedded in its associated units. This is so due to the fact that the enterprise in question develops with the other units transactions of a financial type, in order to meet financial and investment needs of the latter ones.

Figure 2: Risk profile of a network unit (as an effect of its governance decisions focus and its interdependence level with the other network units)

		Governance decisions focus	
		Shareholding related	Business related
Interdependence with the other network units (strength of ties)	High	“Composite” risk profile I	“Joint” risk profile II
	Low	“Reflected” risk profile IV	“Separate” risk profile III

Therefore, a *combination* occurs between risk factors embedded in the enterprise leading the group and the risks typical of the associated units, which affect the risk system of the former through the *channels* of cash management and ownership structure system: the unit therefore experiences a “composite” risk system as an effect of a business model based on the management of a portfolio of a variable size of equity stakes in other companies with which the enterprise in question shares substantial elements of interdependence.

Faber Mobili network is made up of a group of firms, well known in the Italian classical furniture sector. The network companies are situated in the areas of Bassano del Grappa and the province of Vicenza, a company in the Crotona area and two companies in Madagascar and Lithuania. Increasing organizational complexity has made it necessary to redesign the network, so as to assure an easy governance of each stage in the manufacturing process, following a network model that can combine both needs for managers to take autonomous decisions in the single stages and needs for integration through adequate coordination on interfirm exchanges. The governance structure devised by major stakeholders enables each single network unit to be exposed simultaneously: 1) to risk “located” within itself; 2) to risk “located” in other units, in case the effects of the risk there revealed are such as to have repercussions upon other value chain’s unit. This while whole network exposes itself to the risk of not being able to guarantee an effective combination of the firm’s processes which, though strongly interrelated, are autonomously governed by each unit’s management. However, the new governance structure has been devised to protect from such risk, as it is aimed to the founders’ having a direct sharing in one or more subsidiaries besides their shareholding in the holding.

Pompea s.p.a. is an holding of a shareholding-based network in which the firms are engaged in various activities, from weaving tights and – partly – underwear, to automatic sewing of tights, manufacturing underwear, socks and tights and storage of finished products. Within the network's perimeter we can also find: i. a company manufacturing underwear, with a special attention to sewing operations; ii. a company manufacturing hosiery, again especially dedicated to sewing activities; iii. two companies engaged in consolidating Pompea's and Pompea Group related companies' brand name in Europe; iv. two companies for thread "spiriling" activities, weaving of hosiery and underwear, ironing and packaging of hosiery, ironing of underwear. The present governance structure comes from the firm's re-organization carried out through a remarkable number of operations to the purpose of simplifying and rationalizing corporate relationships. Because of its governance structure and interfirm relations, Pompea s.p.a. is exposed to risk profiles both in itself and coming from the other network units, since the risk profiles proper to one unit feed risks in all other units jointly developing with the former the value chain different stages. The same can be said of any other network unit, immediately affected by risk effects occurred in units upstream or downstream in the production chain.

2.4.2. The risks of the unit that can be "placed" in the *second box* depends jointly on the risk factors embedded in such unit and in other units with which the following occurs: i. transfer of goods and services along the "value chain" created by the network as a whole; ii. provision of specific services supporting business activities (staff training, cash management, etc.); iii. inside-network transfer (or sale) of risks, even through *captive* insurance or reinsurance companies. Therefore, in this case, the unit attracted to the network experiences a "joint" risk profile, since the unit manages the businesses in a direct way and develops with the other units a nexus of transaction, based on informal or contractual links.

Consorzio del vino Brunello di Montalcino represents a successful case in marketing initiatives started as inter-firm cooperation. Montalcino producers have made a protection campaign, recording the name of origin of their wine worldwide. This to the purpose of discouraging commercial counterfeiting and binding up more and more a product to its territory, thus giving incentives to wine-and-food tourism. There is always been positive competition among trademarks, but companies are united in the will to invest more and more sums in research and control.

Consorzio Promosuber is a similar case: it attracted five Sardinian firms operative in the cork sector with the objective of challenging foreign markets and meet the competition from multinationals working in the synthetic field. Problems arisen in customer relationship management and promotion have pushed young and very young manufacturers to build up a business cooperation beyond their individualities.

To sum up, the firms involved in the above-mentioned syndicates can face large-sized competitors holding a more significant contractual power. The link then allows "to alter" exposure to outside-network risks – above all market risks – focusing on competition choices within the network. Involved firms are still left with the task of assessing what impact such link has on risk factors within each of them and what are the risk factors generated by the network, as they are jointly exposed to the same risk factors.

2.4.3. Conversely, in the "typical situation" shown in the *third box*, the network unit experiences a "separate" or "distinct" risk system, as an effect of a low interaction with the activities of the other network units, even though some informal or

contractual links have been developed. The risks of the unit “placed” in this box can be configured as *relatively independent* compared to the range of risk factors attributable to the type of governance and management style of the other enterprises of the network. This means that the enterprise experiences risk conditions which are the result of risk factors *substantially separate* from those born by the other network units, at least until: *i.* the conditions of economic, financial, equity or monetary imbalance embedded in some other units end up affecting it, due to the inability to promptly contain the situation; *ii.* operations redefining the risk conditions of the businesses where the enterprise works are carried out, through reinsurance operations inside the network or even through the transfer of entire business areas from one unit to another in the network.

This is the case with a consortium created by companies operating in the stony sector, in an industrial district situated in the north-east of Italy. Such an agreement, reached more than ten years ago, has not been followed by an effective interaction between the enterprises forming the consortium. This is due to the fact that enterprises of this district have preferred to avoid the risk of knowledge exploitation by the other network’ enterprises, which are considered only as competitors. Considering the low level of interaction between the enterprises, which limited cooperative ventures, the risks affecting a firm attracted to such a consortium are relatively independent from the risks affecting the other consortium’s firms, at least until the situation of the district will come to a head due to a declining attractiveness of the all district firms’ businesses.

2.4.4. Finally, in the “typical situation” shown in the *fourth box*, the unit is characterized by risk conditions that are affected by the risks of the associated companies (joint ventures or subsidiaries), as an effect of: *i.* holding of equity shares which determine the “indirect” management of the businesses actually managed in the associated companies; *ii.* little interaction with the other units, provided that cash management of the enterprise and the other units is not coordinated.

In this situation the enterprise is exposed to *risk factors* embedded in its associated units. This situation however does necessarily mean that the risks of the associated companies are fully *replicated*. Such replication can only be partial, since the enterprise is never immune from risk factors of its own, in this case correlated with: *i.* the governance of its portfolio, with movements aiming at expelling some units from the network or at compensating special risk situations of some associated companies, admitting inside the network new units, characterized by businesses with totally different risk profiles; *ii.* the management of the fulfillment of financial requirements generated by the investments in its associated companies.

This is the case with Hopa, which in the last years has been able to expand its share portfolio by investing in different sectors so as to reach a high degree of diversification. In this sense Hopa has been identified as in-between an investment trust investing in share-holding and a trading room taking profits from Stock Exchange opportunities. Daily trading is everyday job for an “empire” ranging from water business, food industry, watches, luxury stationery, clothing, multi-utilities, telecommunications. The variety of the firms attracted to the network has always limited the chances of reaching synergies but this does not mean that risks revealed in some units could not affect other units’ performances. Lately, in fact,

governance risks occurred in the holding and some subsidiaries have negatively affected – at least as to their share price trends – subsidiaries’ performances.

*“Scandal-plagued Siemens AG faces the prospect of more upheaval as U.S. authorities increased their scrutiny and the German conglomerate extended an internal corruption probe to other business units. Siemens confirmed Thursday that the U.S. Securities and Exchange Commission recently began a formal investigation into corruption allegations at the Munich-based company. It disclosed in February that the SEC had started an informal inquiry alongside a criminal investigation by the U.S. Department of Justice. The U.S. probes are tied to a German criminal investigation of Siemens’s telecommunications-equipment business after more than 200 German policemen raided the company’s offices in mid-November and arrested several people. Siemens confirmed Thursday that it is broadening its probe into suspicious consulting contracts beyond the telecom-equipment business, which has generated about a sixth of the company’s revenue in recent years” (“Troubles at Siemens multiply. SEC raises scrutiny as an internal probe extends to other units”, *The Wall Street Journal*, April 27-29, 2007, p. 3). The case mentioned here show that, despite a condition of limited interactions between network units, such units can be invested by risks originally revealed in different organizational contexts.*

3 Risk Exposure of Stakeholders in “Networked” Enterprises

3.1. Continuing the analysis of the relation between governance structure and risk profile using the selected “analysis model”, we will now describe the methods by which stakeholders are exposed to the enterprise risk and express their opinion on the adequacy of the economic and meta-economic rewards that they receive. In this respect, stakeholders (shareholders and other stakeholders) express their opinion on the adequacy of the received remuneration, and the convenience to remain with or withdraw from the enterprise to which they are attracted, based upon the “composition” style of contributions given, rewards received (considering price conditions negotiable on the market for equivalent contributions under a quantitative and qualitative profile) and exposure to risks.

Regarding this, we should not overlook the fact that: 1) *in enterprises not attracted to a network*, stakeholders participate in the operating results generated by a *single* and *unified* process of production and distribution of value; 2) on the contrary, *in networked contexts*, the process of production and value distribution develops throughout multiple enterprises, each of them having a *distinct* system of correlation between the contributions made and the rewards expected by the *stakeholders*. Therefore, as a result of multiple systems of correlation between contributions, risks and rewards, the stakeholders are exposed in a *distinct* and *differentiated* way to: *i.* the remuneration process implemented by each unit; *ii.* overall risks falling back on the network; *iii.* other advantages and disadvantages correlated with the participation in the network.

3.2. On the other hand, in enterprises aggregated in *non-equity company networks* – where the units of the network are not linked by a substantial shareholding relation –, the partners may create a system of infra-aggregate transfer prices that varies according to the results of jointly executed activities. In this case, the pricing of

infra-aggregate exchanges is dependent on a given system of parameters for the distribution of the wealth jointly produced by the units of the aggregate. Infra-aggregate transactions represent for the *stakeholders* a further *channel* through which they “participate” in the enterprise risk, in so far as failure to achieve the expected operating results determines a regulation of exchanges that is deemed inadequate to the contributions made.

Moreover, where shareholding relations exist, each single unit may “estrangle”, to a varying extent, from a *natural* exposure to risks, the more it tends to:

a) express itself with *reflected economic vitality* (Lai 2003), typical of units that: *i.* confine themselves to complying with the instructions given by the holding, who determines in a very incisive way the management processes and *directly* governs the most significant processes; *ii.* develop a *business model* whose productive results are the base for the development of business in other group units; *iii.* are not able to operate in a condition of economic self-subsistence;

b) implements infra-group transactions that are alien to the ordinary management of the businesses in which it engages. The group enterprise in this way is *attracted* to risk conditions that were *originally* embedded in other units of the group and that are being transferred in an *independent* way from functional infra-group operations. It becomes clear therefore how the risk factors originally unknown to the enterprise are able to affect its balance conditions and its ability to guarantee adequate remunerations to its stakeholders.

Piaggio represents an emblematic case of differentiation in the modes by which stakeholders belonging to the same “class” share corporate risks. In this case differentiation regards both stakeholders placed in different units in the group and stakeholders located at the same level in the corporate chain, thanks to the differentiated contributions they supply in terms of financial resources and managerial skills. The group in question underwent a change in the administrative financial control in October 2003, through the agreement signed after long negotiations among Immsi, Morgan Grenfell Development Capital Syndication Limited, Morgan Grenfell Private Equity Limited, Piaggio Holding and Pb, a company formed by the group of banks that have financed Piaggio & C. s.p.a. – the operational leader – for many years. The stakeholders that set up the institutional and managerial reorganization of Piaggio group, take shares in Dutch-by-law Piaggio Holding Netherlands’ risk capital by injecting heterogeneous contributions and holding shares of different categories. The three shareholders’ property rights are structured in such a way that the distribution of sums deriving from the shares of different classes is done according to a “table” for created value attribution, which has been negotiated by partners and considered adequate as to their single shareholding in Piaggio Holding Netherlands and the different objectives they pursue by investing in it. The table is devised according to the different share classes held by partners on the one hand, and different equity value “intervals” reached by the group. Each partner’s exit from the group is regulated by various ties, according to its role in the group. All this makes it all the more clear the differentiation characters through which each partner wishes to share corporate risks. Indeed, each partner is not only given a reward according to its contribution, but it is also subject to restrictions in exit modes, both as to reimbursement of what contributed and to time space for which it is tied to the group. Business choices having an impact on single units’ risk conditions and network’s ones cannot then be made without taking into consideration as important factors the differ-

ent inclinations and real exposure to risks of the various stakeholders involved in the network.

3.3. The type of exposure of the stakeholders of the network units can be analyzed by considering the assessment of these features:

a) the *localization* of stakeholders at the network units. In particular, two instances may occur: *i.* the case where a stakeholder is present at a *single network unit* (“single-level” stakeholder); *ii.* the case where a stakeholder participates in *multiple network units* (“multi-level” stakeholder).

b) the level of *interaction between network units*. Two situations may occur: *i.* a situation of *little* interaction between each single unit of the network, as an effect of very low interdependence – which at the most occurs *occasionally* – between the respective systems of value production; *ii.* a situation of *high* interaction, where the relations between the value-creation systems of the various units are *continual* or in any case *frequent*.

In this regard, *combining* the two variables above mentioned (*localization of stakeholders* and *interaction between network units*), four typical situations originate – as shown in *Figure 3* –, each of them being characterized by a different combination, on one hand, of the number of company units where the stakeholder is directly exposed to the corporate risk (hereinafter referred to as *institutional place of exposure* or *place of exposure* or, more briefly, *place*) and, on the other hand, of the *characteristics* of the causes determining such exposure (hereinafter referred to as *exposure determinants* or, more concisely, *determinants*).

Figure 3: Places and determinants of risk exposure of stakeholders in networked firms

		<i>Interaction between network units</i>	
		Low	High
<i>Localization of stakeholders</i>	“Single-level”	Restriction of places and determinants of exposure I	Low restriction of exposure places as an effect of correlated determinants II
	“Multi-level”	Diversification of exposure places and determinants IV	Low diversification of exposure places as an effect of correlated determinants III

3.3.1. The *first box* in *Figure 3* refers to a situation where exposure of stakeholders to corporate risk is *restricted* in terms of both *places* of exposure and *determinants*. In fact, on one hand, as an effect of the “single-level” localization, it is possible to recognize in one single company unit the place of exposure to all risks falling on the network, on the other hand because of a low interaction between the units, the *determinants* of the exposure are those *typical* of the one unit in which it participates and, as such, *substantially different* from those of the other units. In this typical situation, a stakeholder, when expressing its opinion on the adequacy of the remuneration, tends therefore to *primarily consider* the remuneration conditions of the *single network unit*, as an effect of the little interaction between the *only* unit in which it participates and the other companies.

3.3.2. In the *second box*, exposure of the stakeholders to the corporate risk is *restricted* in terms of *place* of exposure, although its *determinants* are peculiar not just to such *place* – *i.e.*, the company in which the stakeholder participates – but also to the entire network, since the interaction between the various units forming it determines overlapping of factors triggering the risks in a unit with those of the other units. The concentration typical of the situations of the first box in this case is *limited* since the management is strongly correlated with that of the other units in which the stakeholder participates. Of course, the *restriction* mentioned here should not be only interpreted as a *less-than-optimal* situation compared to the one described in the *first box*, where the restriction is instead *complete*. Indeed, the restriction generated by an intense interaction between the network units has favorable effects – not negative as the term *restriction* may induce to believe – on the exposure of the stakeholder when such interaction produces a *compensation* between the high risk profiles of the unit in which it participates and the lowest profiles of the other units. Therefore, if on one hand the stakeholder tends to give *importance* to the *one unit* in which it participates, on the other hand he cannot overlook the “signals” produced by a perception of the risk profiles localized in the *other companies*, whose value production processes *constantly* merge with those of the unit to which it is attracted.

3.3.3. In the *third box*, the stakeholder participates in several network units (“multi-level” stakeholder), while low interaction occurs between the value production systems of such units. In this sense, the “multi-level” stakeholder *diversifies* its exposure to the risks that fall as a whole on the network, as an effect of the participation in units characterized by risk profiles that are only *partially correlated*. *Diversification* occurs in terms of both *places* of exposure and *determinants*. In fact, we see a *diversification* in the activities of the various network units – otherwise, the low interaction between the units would be unexplainable, unless in the cases where a pathological governance of the network occurs – while the single stakeholder reaches its diversification purpose, employing its resources in several units: the concurrence of such diversification profiles that belong to well distinct sectors make the exposure of the stakeholder *completely* diversified. Therefore in this situation it becomes important to consider the separate profiles of remunera-

tion and risk-taking that fall on each single unit in which the stakeholder participates, just like in the situation that occurs when the same stakeholder tries to contain its *overall* risk exposure through a diversification in units that operate in different sectors and that are not attracted to the same network.

3.3.4. Finally, the *fourth box* regards a situation where the stakeholder participates in *several* units (“multi-level” stakeholder) having a high level of interaction. The *diversification* indicated in the *third box* therefore is *limited* as an effect of the *correlation* between the *determinants* of the exposure. A high interaction between the value production systems of the various network units in fact has a tendency to *limit* a possible *real* diversification of the risk profile. Similarly to the situation described in the *second box*, the *limitation* in question should not be interpreted as a *less-than-optimal* situation compared to the situation described in the *third box*, where the diversification is instead *complete*. In fact, the limitation generated by a high interaction between the network firms positively affects the exposure of the stakeholder when such interaction exerts positive effects on the entire network, compensating any localized situations of imbalance.

3.3.5. The typical situations illustrated above confirm that, in networked contexts, stakeholders express their opinion on the adequacy (or inadequacy) of the remuneration based upon the economic -financial results, reward systems and risk profile not just of one single unit but rather of multiple units belonging to the network, especially when the stakeholders have a “direct” stake in more than one network units and there is a high interaction among the network units.

4 Implications for Designing Risk Management Systems and Procedures

4.1. We will now see the implications of the above described relation between governance structure and enterprise risks in the design of risk management systems and procedures.

The following considerations are in compliance with those researches that believe that risk management systems cannot be designed in a “detached” way from the organizational context where such systems will be used by the management, if one wishes to avoid that such systems lose their ability to manage the real risks that organizations face (Miller, Kurunmäki and O’Leary 2006). In this regard, as stated by Shaw (2003), risk management systems should be designed inside the “systems of governance” adopted by the CEOs in the performance of their managerial activities, keeping into special account the context – and consequently the stakeholders system – with which the enterprise interacts on a daily basis.

This does not mean that today’s enterprises have a limited sensitivity to the risk issue, although there are situations in which: *i.* specific control systems for selected types of risk are not implemented; *ii.* such systems are inadequate to the

complex risk measurement needs. *iii.* the implemented control systems are not a faithful reflection of the formal procedures approved by the top management. However, if on one hand the number of events subject to risk management procedures increases – the so-called “risk management of everything” (Power 2004) –, on the other hand risky events certainly do not drop (Miller, Kurunmäki and O’Leary 2006). In this regard, the diffusion of risk management models inadequate to the complexity of the risks to be monitored and treated or to context-specific situations may cause the onset and diffusion of “secondary” risks, resulting from less-than-optimal choice of managers that are “excessively” preoccupied with protecting their personal position to the detriment of the implementation of an adequate enterprise risk management and effective business strategies (Power 2004).

The focus of this analysis is not on the opportunity to refine the existing specific measurement techniques or to identify new techniques for the measurement – and subsequently management – of the single risks that are in fact considered “measurable”, but rather on the organizational context where the risk management systems are modelled and used. The organizational context selected as the observation level is that of the units forming a business network. Such observation perspective: *i.* is complementary to the larger perspective selected by scholars that are used to take as reference a district, the entire national or international economic system, etc.; *ii.* allows to verify the practicable actions able to modify the risk exposure of the network units as well as their stakeholders.

4.1.1. The interaction occurring between the risks, as an effect of risk factors that are in common or in any way correlated with those of the other network units, requires that the risk management system of each single unit assess the risk factors outside it. In this regard it is worth noting how the participation of an enterprise in a network may result in the selection of risk management options that are different from those selected by an enterprise that does not belong to a network, as it can be decided to: 1) “tolerate” certain risk situations in consideration of the clear advantages resulting from participation in the network; 2) *transfer*, through *ad hoc* operations, the *risks* inherent in processes that were originally controlled by other network units, thus involving an enterprise that up to that moment was not exposed to such risks; 3) *transfer*, within equity-type networks, the *risk burden* of other units, through upstream and downstream reallocation of such burden. Such transfer originates as an effect of the consequences produced by the risks on the operating results of the associated company while the network units affected by the phenomenon of the transfer of special risks are those holding equity stakes in other units of the network.

Of course, for an enterprise to be able to make risk management decisions adequate to its status of network unit, it is necessary that its management becomes aware of such status during the phase of risk recognition and measurement. In fact the elements that are not detected by the risk recognition and measurement system can hardly be consistently managed. The participation of an enterprise in a network is a factor that the decision-making process regarding the selection, meas-

urement and management of enterprise risks must necessarily keep into account, in order to reach full comprehension of its own risk system.

4.1.2. The above described consequences also affect stakeholders, who in fact have to express their opinion on the adequacy of rewards received, also keeping into account the effects produced by the network relations. This means that a stakeholder should consider the risk profiles not just of a single unit to which it participates, but also of the other units, especially when the risk conditions of the former are strictly correlated with the risk conditions of the latter. In this case, such stakeholder is less able to “concentrate” its risk exposure inherent in the only unit to which it belongs: the stakeholder “directly” participates in the risks to which it is attracted as a stakeholder of such unit and “indirectly” in the risks that fall instead on the other network units.

On the other hand, a given stakeholder may “directly” participate into several network units and has the possibility to: *i.* diversify the places of exposure to network risks. *ii.* expose itself to interconnected or even identical risk factors in situations of high interaction between the network units. *iii.* expose itself to common or in any case interrelated risk conditions according to different “roles”, as in the case, for instance, of those financial institutions that participate as shareholders and lenders of capital in several units or act in different units as both shareholders and managers.

Moreover, in a network context, the units may devise a value distribution system correlated with the results that the entire network will be able to generate. In this case, the intra-network transfer price could “reflect” the performance of the network and may affect the risk exposure and rewards of the stakeholders attracted to these units. Therefore, it is fair to say that the decision-making process on the selection of risk management strategies should be based on the consideration of the “whole” position of the stakeholders attracted to the single units of the network, in order to identify: *i.* the *possibility to increase* the risk profile of those units where the stakeholders compensate such situation with advantages drawn from other units in which they participate; *ii.* the *need to contain* the risk exposure of those units in which stakeholders cannot compensate, inside the network, a situation with a high risk profile.

4.2. The selection of the risk profile of a network unit therefore is accomplished also through the definition of an *equitable risk and reward sharing among network partners*, for the purpose of easing the distribution of the value produced consistently with the risk conditions born by the various stakeholders at the different levels of the network (Joskow 1987; Perry 1989; Osborn-Baughn 1990; Mahoney 1992; Preckel, Gray, Boehlje and Kim 2004). In order to achieve an adequate “combination” of governance decisions and risk management decisions it is necessary to consider how in networked firms “intersect”, on the one hand, the “network” of risks localized in the various network units and, on the other hand, the “network” of stakeholders that determine the shareholding and governance

style of the network and that share, to a different extent, the risks that fall onto the network.

In this respect, we can highlight that the governance decisions focus, the interdependence among network units and the “localization” of the stakeholders represent corporate governance features that influence the network units’ “total” corporate risk, which is related to the setting of the corporate risk profiles (“composite”, “joint”, “reflected”, “separate”) and to the ways of exposure (“restricted” or “diversified”) of network’s stakeholders. Considering such features allows to monitor the potential impact of each single risk on each unit and on the network, as well as the level of exposure of the various stakeholders to such risks and their willingness to bear the related effects. In this way, the risk of formal risk management based on formal regulation accomplishment should be avoided.

4.3. The next steps this research can undertake are about the identification of a framework capable to identify and measure the main effects of *each* corporate governance mechanism on the exposure to risk of a networked firm and of its stakeholders. And this in order to detect, for a set of risk factors considered as relevant ones by the top managers, which significant impact the modification of a corporate governance component can have on the firm’s exposure to risk; this being aware that such a modification can have an impact not only on governance risks but also on the firm’s other risk profiles.

The steps still to be taken seem then to require an integration of knowledge, by matching risk management contributions aimed to solve techno-operational problems in identification and assessment of risks with contributions recognizing the “role” of the organizational context in which such risks originate and, if not adequately dealt with, occur. In this respect, further explorable research spaces do not certainly lack.

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