Design and creativity in open innovation processes: The case of Italian industrial districts

Design e criatividade nos processos de inovação aberta: o caso de distritos industriais italianos

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Abstract

This paper discusses the topic of collaborative innovation as a social process that involves the exchange of knowledge focused on the existence of dense social fabric relationships between potential problem solvers (e.g. designers, suppliers, research institutions) to generate innovation. Innovation networks are developed either through market (traded interdependencies) or not-for-market (untraded interdependencies) relationships, the latter facilitated by spatial proximity. Territories and cities with their local communities are therefore also crucial in collaborative innovation processes. The territories are now recognized as a repository of local knowledge based on the experiences of those who live in that specific context, but shared with producers, workers and end-users. Today a "cognitive role" is attributed to the territory: first, it provides knowledge instrumental to the production system and also promotes, under certain conditions, a converging of talented people, values and social behaviors that determine the very meaning of life and production in the territory. The challenge for companies lies in the ability to combine exogenous factors (architectures of collaborative innovation) with endogenous factors, the latter related to territorial contexts that stimulate, enhance and channel individual expressions of creativity. The cases of some Italian industrial districts specialized in design-oriented products exemplify interesting governance architectures, significantly different from the standard open-innovation of Anglo-Saxon contexts.

Key words: territory, industrial district, open innovation, design-driven innovation, creativity.

Resumo

Este artigo discute o tema da inovação colaborativa como um processo social que envolve o intercâmbio de conhecimentos centrado na existência de um denso tecido de relações sociais entre os solucionadores de problemas em potencial (por exemplo, designers, fornecedores, instituições de pesquisa) para gerar inovação. Redes de inovação são desenvolvidas através de relações deo mercado (interdependências negociadas) ou de não mercado (interdependências não-negociadas), este facilitado pela proximidade espacial. Territórios e cidades com suas comunidades locais são, portanto, também cruciais nos processos de inovação colaborativa. Os territórios são agora reconhecidos como um repositório de conhecimento local com base nas experiências das pessoas que vivem nesse contexto específico, mas compartilhadas com os produtores, trabalhadores e usuários finais. Hoje é atribuído um papel cognitivo ao território: primeiro, fornece o conhecimento instrumental para o sistema de produção e promove também, em certas condições, uma convergência de talentos, valores e comportamentos sociais que determinam o próprio sentido da vida e da produção no território. O desafio para as empresas reside na capacidade de combinar fatores exógenos (arquiteturas de inovação colaborativa) com fatores endógenos, estes referentes a contextos territoriais que estimulam, aprimoram e canalizam as expressões da criatividade individual. Os casos de alguns distritos industriais italianos especializados em produtos orientados por design nos servirão para exemplificar arquiteturas de governança significativamente diferentes do padrão de inovação aberta dos contextos anglo-saxões.

Palavras-chave: território, distrito industrial, inovação aberta, inovação movida a design, criatividade.

Introduction¹

The phenomenon of industrial districts in Italy assumes a size and importance that is unmatched in any other industrialised country. The goods produced by the industrial districts have a high profile in international trade, both in medium and large sectors (textiles and clothing, furniture, footwear, taps and fittings, etc.) and in dozens of niche areas (bicycle seats, equipment for the wine industry, buttons, etc.). Furthermore, the manufacture of most Made in Italy products (the so-called "4F": Fashion, Food, Furniture and Ferraris) is based in the industrial districts.

The districts have always been an interesting model of organisation of production and management of innovation processes. What makes this model so interesting is its emphasis on the social aspects of production and its historical-cultural roots, and in fact it has become the foundation for the whole process of social development in Italy. In practical terms, the districts are local communities in which the emergence of certain outstanding manufacturing processes reinforces the sense of identity and attachment to the local territory.

A peculiar aspect of the role of design in innovation processes is the combination of collaboration and competition (Brandenburger and Nalebuff, 1996) within networks organised to manage local knowledge.

While not limited to industrial districts, the research by Nonaka and Takeuchi (1995) on organisations that create expertise allows us to frame the district model within the modern learning economy. Our analysis highlights the fact that an organisation wanting to adopt a configuration that encourages innovation must provide autonomy and motivation for its workers, reduce the number of hierarchical levels, favour communication among levels and involve various subjects in a network of reciprocal commitments. Moreover, the organisational structure must allow a certain internal variety and a relative abundance of resources: it is the possibility of recombining resources in original ways that gives an organisation the scope for innovation. If we look carefully at these organisational principles, we find that they correspond in many ways with the district model: autonomy and motivation are guaranteed by competitive incentives, within a market regulated by social institutions that reduce the risk of free-riding; communication is made easier because people share the same local culture and common productive experiences; the variety of positions along the supply chain increases sources of learning; an excess in the local labour supply guarantees a margin for adaptation and encourages firms to explore consumers' new needs and desires.

All of these elements are of great interest nowadays in a context where the role of consumers is changing substantially, from the passive role forced upon them by the Fordist model of mass production, to an active role in creating value as well as redefining and constructing new senses and meanings of consumption. This

transformation has long been understood within the industrial districts, thanks in part to designers who, from their original role as aesthetic innovators (the designer as creative artist), are participating actively in the creation of value in goods and services, as well as redefining interpretive models and the post-modern meaning of consumption.

The article is structured as follows: the first part describes the role played by territory and creativity in processes of local development; the second part discusses the role of open innovation and of the specificity identified in district-level production systems; the last part offers conclusive comments.

Territory and creativity in local economic development

Beginning with studies of economic geography in the late 1990s (Scott, 1988; Storper, 1995; Asheim, 1996; Saxenian, 1999, 2002; Maskell, 2001) and continuing with contributions by a group of Italian social economists (Becattini, 1979; Brusco, 1989; Becattini *et al.*, 2001) as well as American economists specialising in business strategy (Porter, 1990), territory is now considered a key to understanding and interpreting economic phenomena and innovative processes.

Associated with the concept of territory is that of spatial proximity, which has retained its importance notwithstanding the development of ICT (Information and Communication Technologies), which, according to some experts, should have brought about the "death of distance", and the development of long networks (Castells, 1996). The recent ICT wave has not replaced the significance of physical, face-to-face contact, or the shared experiences and languages determined by an identity deeply rooted in the local territory (Storper and Venables, 2005).

In the post-Fordist economy the role of territory is changing and an interesting trend is emerging: geographical spaces are becoming socioeconomic ecosystems where advanced technologies and knowledgebased economic activities incubate, develop and grow. The presence of a distinctive local culture, the trust that develops among local operators, and a dense network of interpersonal relationships generate an "atmosphere" that is favourable to specialisation and the informal exchange of knowledge and skills within the territory. The reticular nature of relationships fosters the accumulation of social capital, thus becoming the missing link in the economic development process. Physical, natural and human capital alone cannot determine economic development; there must also be interaction among them.

These features distinguish an industrial district inside of which a "communitarian market" (Dei Ottati, 1986) develops and evolves: "market" because within territorial boundaries firms establish business relation-

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ships, exchange goods and semi-finished products; "community" because the operators share a common behavioural code that has become internalised through participation in the same local society.

In contrast with the sociological interpretation of social capital, Florida (2002) proposes the idea of creative capital, meaning a set of fluid and dynamic relations that define those social contexts that are most open to novelty and change. In creative capital "weak ties" (Granovetter, 1973) prevail, reducing barriers to the entrance of new subjects and defining a connective tissue that strengthens the capacity to absorb and experiment with new ideas and knowledge. A social context characterised by weak ties allows a multiplication of the number and variety of relationships, as well as an increased heterogeneity among the people who come into contact with each other. In other words, the presence of open relational networks is crucial to the formation of new creative and innovative spaces, where individuals with varied professional skills (engineers, designers, researchers, etc.) can meet to share viewpoints and explore new possibili-

To simplify, we can identify two general perspectives that account for the advantages of spatial agglomeration in processes of innovation: the first considers space as a "hub & spoke," while the second focuses on the importance of the "nexus of relationships" between various economic actors.

The *hub & spoke* model is based on the concept of urbanisation economies, in which a series of advantages linked to the effects of density, proximity and variety can be identified. In this model, it is assumed that location in densely populated and developed areas offers three principal advantages: (i) more opportunity for personal contact; (ii) greater availability of specialised services

(financial, legal, advertising, consulting, etc.) comparable to advanced service sectors and with a high concentration of knowledge (*Knowledge Intensive Business Services, KIBS*); (iii) easier access to other metropolitan areas (*connectivity*). The *hub & spoke* model is the best metaphor for this new condition, as it favours the continuous reconfiguration of the chains linking producers, consumers, and other economic actors (for instance, universities).

The models that focus on the importance of territory as a "nexus of relationships" are based on the observation that alongside market relationships (traded interdependencies) there are also non-market relationships (untraded interdependencies) facilitated by spatial proximity (Storper, 1995). These non-market relationships assume particular importance in knowledge-based production contexts.

Camagni (2006), reflecting in particular on social interactions in urban spaces and drawing support from the theory of the innovative milieu (Aydalot, 1986), extends the concept of urban space and provides an interesting interpretative analysis. According to the concept of innovative milieu, phenomena of spatial development are the result of innovative processes and synergies among economic actors present in limited geographic areas. There are two basic elements of the territorial innovative milieu: (a) geographic proximity allowing reduction of production and transaction costs; (b) socio-cultural proximity grounded in behavioural, moral and cognitive codes shared by the various actors. These facilitate interaction and synergy among economic agents, repeated contacts, absence of opportunistic behaviour and free riding, division of labour and heightened cooperation within the urban milieu. The final effect of these mechanisms is to generate an aptitude for cooperation and socialisation, and to promote establishment of cohesive bonds of trust and belonging (relational capital). In addition to market mechanisms and

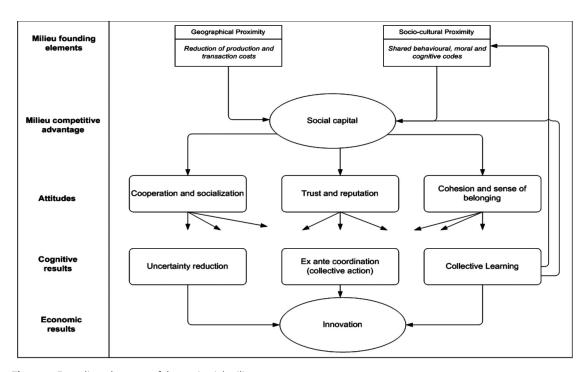


Figure 1. Founding elements of the territorial milieu. Source: Camagni (2006).

circulation of information, the cognitive results of the *milieu* ensure reduced uncertainty in decisional processes, *ex ante* coordination among economic actors that facilitates collective action and, within the labour market, a process of collective learning. The overall outcome of these three final elements is the facilitation and acceleration of innovative processes (Figure 1).

Cities and local contexts today have become irreplaceable for the cognitive activities of an exploratory and reflective nature that are required to plan more advanced forms of consumption, such as goods of the experiential type (Pine and Gilmore, 1999). In order to plan in the experience economy it is necessary to also make use of knowledge which is linked to the proximity of the context (urban and territorial) and is thus of a tacit nature, accumulated by individual actors through social practices (Rullani, 2004).

Criteria such as the innovativeness or quality of goods are vitally dependent on the quality of formal and informal communication along the value chain: among workers within the same firm, and among different firms as well as their suppliers and clients. Cities and territories function in this regard as main suppliers of social capital – or, as Camagni (2006) terms it, relational capital – that nourishes open processes of coordination. These relational resources generate positive externalities.

Hence, in an economy where the production of goods and services requires contributions of knowledge as well as continuous learning, the spatial dimension becomes an essential component; the partially tacit nature of knowledge, and thus the possibility of transmitting it through uncodified relations among economic agents, is one of the key explanations for the importance of territorial and urban contexts. This dimension is even more central in determining innovation, since this is becoming increasingly a *social process* involving not only production, but above all exchanges of expertise, and thus requires a dense fabric of interpersonal relations such as we find in certain industrial clusters and districts.

Certain territories are recognisable as repositories of localised knowledge that is linked to the experience of those living in that specific context, which is shared by producers, workers and consumers. One of the essential characteristics of Fordism was that it tended to separate the economy from society, reducing the importance of factors such as local context. In this framework the role of territory in development processes remained passive. Today a *cognitive role* (Becattini and Rullani, 1993) is attributed to territory: on the one hand it supplies the production system with useful expertise, and on the other hand it attracts talented people and favours values, ideals and social behaviours that determine the very meaning of producing and living in the territory.

Districts, design and open innovation

Before discussing the different strategic uses of design in innovative processes in Italian industrial districts, it is necessary to describe the role of territory.

The success of industrial districts in Italy coincided with the discovery of territory as a competitive factor and, more generally, with the end of the *one best way* model of

economic development. The experience of the districts has demonstrated that a heritage of knowledge accumulated over the generations can become an important asset in global competition. Territory represents not only the background against which economic activity occurs, but also the place where critical expertise is created, accumulated, shared and transmitted in ways that are difficult if not impossible through formal communication processes.

The district model of organisation that developed in Italy starting after the Second World War is founded on specific and distinctive elements that deserve to be identified. The industrial district is first and foremost a place where the experiences of work, family and civic life are interwoven within a circumscribed geographical area. Relationships determined by the confines of community life, family and friendship, coupled with a certain degree of competition against neighbours, activate the stock of social capital necessary for the birth and development of the district. Hence the district model has in the territory not only a physical location, but also an actual resource. Economic activity is characterised by a dominant industry, and sometimes a series of other supporting and complementary activities, both private and public. The work organisation is flexible in supply terms and can thus adapt to changing economic situations and to the demands of a varied clientele. Typically, industrial property belongs to entrepreneurs who themselves live in the district. Finally, a large number of small and medium size specialised production units operate within the district, so they do not depend on strategies dictated by one large firm.

These elements characterise the typical district and make each one different from others. This may seem rather obvious, but in reality it is not. Each district is unique and distinct, and within each there are entrepreneurial situations that are antithetical to one another.

Within the industrial districts, firms have distinguished themselves in the marketplace through strategies of *emerging design* rather than by adopting formalised methods of product design (Bettiol and Micelli, 2005).

"In local production systems we can trace not only so-called "explicit' design, involved in fulfilling specific design tasks, but also "tacit" design, interpreted by a multitude of technical, creative or entrepreneurial actors who are neither recognisable nor recognised in the role of designer, but who to all effects perform design activities" (Simonelli, 2000, p. 21).

The district-based firm is thus characterised by its intensive use of external resources that stimulate innovation, anchored not on a planned process, but rather on entrepreneurial intuition, on the one hand, and on the activation of learning processes through interaction with external subjects (*learning by interacting*) on the other. In this innovative process, organisational visibility is achieved by the professional figure of the designer, entrusted increasingly with the role of managing the process of integration and enhancement of heterogeneous skills and expertise (Bertola and Texeira, 2002). The designer becomes part of a social process of construction of meanings,

images and culture that integrates with other business functions such as marketing, research and development, distribution and, finally, the end-user (Celaschi and Deserti, 2007; Celaschi, 2008).

Analysing the main Italian furniture-manufacturing districts (kitchen furniture, chairs, sofas and living-room furnishings), Di Maria (2009) identifies three types of strategies emerging in relations between firms, designers and the market. In the first type the firm combines a decisive approach to design with investment in marketing, involving collaboration with outside designers (designmarketing model); in the second type the firm supports an internal design department with the collaboration of a network of outside designers (reticular design model); and in the third type the firm relies exclusively on an internal design structure (traditional design model).

The reticular design model proposes an interesting enterprise meta-model that takes inspiration from the archetype of the "open innovation" proposed by Chesbrough (2003).

Large corporations have for some years been experimenting with meta-firm models that involve the creation of innovation centres that are completely separate from the pre-existing company structure, using peer-to-peer architectures and social networking, and thus putting themselves at the centre of communities rather than organisations. The meta-firm is a possible solution to the problem of organising and managing the Front End of Innovation (FEI) and overcoming the bottlenecks and disruption that occur during the transfer of knowledge from research to the profitable use of technologies and innovations.

The FEI identifies a pre-planning phase in innovative processes which, in order to be fruitful in the development of new products and services, must be accepted as "fuzzy" and risky. In this phase the exploratory component prevails, errors should be encouraged and failure must not be penalised (Figure 2).

Not only are new systems of innovation complex, but they are also open. Firms today are a point of interchange for numerous networks, so that business activities become connected to open systems, and hence the term "open innovation." Open innovation is determined by the need to tap into greater volumes of knowledge in order to increase the chances of producing truly innovative and competitive products and services. The new networks allow much greater access to external

expertise than was possible in the past; moreover, there is a growing strategic role for higher technologies, which generally cannot be developed within a single company (Zanenga, 2010).

There are also references to open innovation in research on *design-driven innovation* (Verganti, 2003), especially with regard to district models in which there is a kind of osmosis between social culture and enterprise. Compared to "technology push" or "market pull" innovative processes, in the "design-driven" model "innovation starts from the comprehension of subtle and unspoken dynamics in socio-cultural models and results in proposing radically new meanings and languages that often imply a change in socio-cultural regimes" (Verganti, 2008, p. 442).

Within certain districts in the furniture, home accessories and sportswear sectors, there are meta-models that allow small and medium-size manufacturing enterprises (SMEs) to develop a considerable capacity to understand, anticipate, propose and influence the emergence of new product meanings. Compared to larger firms, which are more structured from an organisational standpoint, SMEs possess neither managerial competence nor adequate financial resources to invest in R&D. The processes through which Italian SMEs acquire the knowledge needed to support innovation, for example related to the future dynamics of socio-cultural models, involve the participation of an extensive network of actors inhabiting a particular geographical area. However, the possibility of exploiting this knowledge is not the same as having access to it; tacit expertise cannot be separated from the local context that generated it and thus tends to remain local. It is precisely this non-transferability (through codification) and strong rootedness in the territory that give such knowledge a significant economic value.

The characteristic meta-model requires the presence of a balanced network with a high relational density among actors, including (besides the firm itself) product designers, architects, raw material suppliers, firms in other industries, universities and design schools, showrooms and exhibition designers, publishing, artists, and finally end-users (Verganti, 2006, 2008).

Each one of these actors contributes to forming links in a network that defines a hierarchical form of governance, centred around the firm that orchestrates, and sometimes animates, a Community of Practice (CoP) (Lave and Wenger, 1991) or an "elite circle" (Pisano and Verganti, 2008). The CoP defines a *complex social space* (Micelli, 2000) that

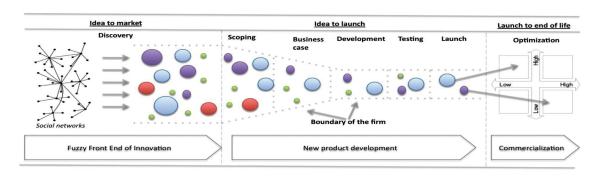


Figure 2. Stages of the fuzzy front end of innovation.

makes it possible to control processes of generation and sharing of knowledge (both tacit and codified) and to renew conditions of tacit knowledge. This system of open innovation viewed as an "elite circle," with hierarchical governance, is desirable in cases where the firm (Pisano and Verganti, 2008): (a) knows which domain of expertise will probably furnish the best solution; (b) can scout for and engage experts; (c) can formulate the innovation problem and assess the solutions proposed by experts within the community.

In this case we have a meta-model of FEI organisation that is different from the classical model proposed by Chesbrough, insofar as portions of the network ("small worlds") continue to interact strategically with the firm after the initial phases of idea selection. The continuous interaction with the outside world all along the supply chain involves subjects and organisations such as designers who, in their capacity as "decoders" or "gatekeepers," perform a continuous activity of intermediation and enhancement of knowledge, both art and science (Celaschi, 2008). The firm forms a preferential relationship with the designer so as to manage the process of design-driven innovation, at the same time activating the various levers of the product system. The designer assumes a strategic role because he possesses a series of key competences allowing him to support the firm in developing the product system: knowledge of the market and client needs, of production processes, technologies, normative and/or regulatory aspects of the product, and the capacity to interpret trends and develop scenarios of new behavioural models.

Today the process of innovation is expanding from the technological and functional to communicative and semantic components that take concrete form in the creation of new meanings. It is from the recombination of existing technologies and forms in new and unprecedented ways that unusual and original product meanings and senses are created.

It is precisely this new condition that leads the designer to play a new role, coinciding with the passage from a process of "planning with a strong aesthetic content" (Lojacono, 2002) to one with a wider connotation, assuming the characteristics of a "cultural project" (Bettiol and Micelli, 2006) that the firm wishes to pursue. In this new perspective, design becomes the synthetic expression of a variety of processes, from management to innovation, from product development to communication (Bettiol and Micelli, 2005). Furthermore, this passage imposes continuous interaction between designer and firm, besides the "idea to market" phase shown in Figure 2, deriving from the particular type of symbolic-linguistic innovation adopted. Even the phases of engineering, release and communication of the product are important moments in the process of design-driven innovation. A product does not simply perform functions, it also transmits messages to the customer, who in turn attributes a meaning to these messages. For example, a lamp does more than just illuminate; it also becomes an item of furnishing, and so the manufacturer's communicative message must help to decode the meaning of that item of furnishing. Thus innovating a product system leads the designer as "decoder" to participate in the phases of elaboration of new "languages" (codes, morphologies, symbols and signs associated with the product) with interpretive meanings and senses that help to respond to client needs. Besides identifying unexpected forms, functions, usages and new technological applications (of product or process) for a product, design-driven innovation also creates new languages and meanings for that product.

In design-driven innovation processes, therefore, the designer contributes contemporaneously on two fronts: he gains visibility on the one side as an integrator of the product's functional dimension and a strong aesthetic component, and on the other side as a professional with systemic aptitudes and an ability to increase the utility of goods through the attribution of new meanings. These competences today are becoming essential in economic systems searching for strategies and instruments to differentiate goods, and the attribution of meanings is the main determinant of these strategies. The advantage of using the professional skills of designers derives from their ability to bring about an interaction and combine at the cognitive level (left and right brain) four domains of knowledge: technology and engineering, economics and management, humanist culture, and art and creativity (Figure 3).

Some conclusions

In network capitalism, which characterises the post-Fordist phase, the entrepreneurial function is no longer reserved only for those at the top of large organisational pyramids. Power, capital and risk are distributed among a variety of autonomous subjects (designers, research-ers, producers, service centres, professionals, consumers, etc.) that work in a sort of production chain by coordinating amongst themselves.

In the case of the districts, the characteristics and success of the new system of open innovation cannot be understood without an understanding of what a production chain is: a collection of specialists who, on a contractual basis, collaborate with a view to achieving a goal, mobilising the territory and its resources (material and immaterial). There is thus a relationship of complementarity between territory and enterprise: the territory needs firms that can identify the best ways to enhance ideas and available resources, but firms also need a cultural, institutional and social background that will give them the knowledge (both tacit and codified) and stimulation necessary for the innovations to be realised, as well as the innovation networks within which innovations can mature.

The two "levers" that are necessary to support innovative processes, able to regenerate the capabilities for knowledge acquisition, assimilation and exploitation, are intellectual and relational capital. By relational capital we mean the distinctive relationships (as opposed to those accessible to everyone) which the firm can utilise to generate new ideas, industrialise them and finally commercialise them. Intellectual capital is made up of the collection of distinctive competences (as opposed to those everyone possesses) that the firm uses, once again, to generate new ideas, industrialise them and sell them in a competitive context.

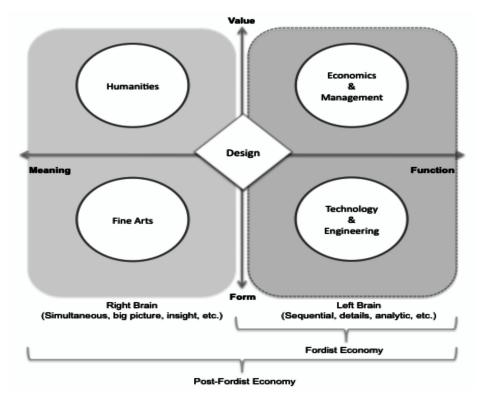


Figure 3. Interaction among domains of design expertise. Source: Adapted from Celaschi (2008).

The first phase of district development was characterised by the prevalence of "learning by doing": expertise was imported from outside and assimilated empirically and informally, perhaps by taking apart and reassembling machines and products already present on the market, then making gradual improvements dictated by user needs or simply suggested by an entrepreneur's creative intuition. This kind of learning guarantees incremental improvements without particular discontinuity when compared with technological trends in general. However, this cognitive approach is no longer sufficient. It has become necessary to reinforce the reserve of intellectual capital that can be accessed, by transforming informal networks into formal ones, based on models and standards and meanings born of formal languages and organised in Communities of Practice. In parallel, relational capital must be improved by replacing "short networks" with "long networks," a transformation made necessary by access to knowledge bases present in global networks. "Evolution toward more extensive networks and more codified knowledge must come about [...] not merely in the name of standardisation, but through innovation, creatively finding a way to 'grow' (in relationships and intelligence) that allows one to maintain and develop one's own difference, becoming recognisable and useful to an ever wider reserve of potential clients" (Plechero and Rullani, 2007, p. 66).

The success of this evolutionary transformation does not depend solely on the conscious adoption of strategies by the entrepreneurial system. The passage from industrial to creative and innovative districts also requires the active contribution of local institutions. These must be capable of interpreting the evolution towards network capitalism and must introduce industrial policies and socio-cultural initiatives that complement each other and serve to make the territory more competitive.

The promotion and adoption of design-driven innovation processes is hindered by the difficulty of legitimising design as a driver of innovation. Economic theory in particular has only recently begun to recognise the autonomous capacity of design to lead innovation. This difficulty exists not only in Italy, but also within the European Union. In this regard an important positive signal is the recent publication of the European Commission document "Design as a driver of user-centred innovation," in view of the planned revision of the Innovation Policy in 2010. In the introduction to the document, the Commission affirms that the contribution of design can be crucial at micro and macroeconomic levels: "Companies that invest in design tend to be more innovative, more profitable and grow faster than those who do not. At a macroeconomic level, there is a strong positive correlation between the use of design and national competitiveness" (Commission of the European Communities, 2009, p. 2).

The recent revival of competitiveness among certain Italian districts through the introduction of policies to promote design-driven innovation provides only a few general indications. The first regards the continuing importance of territory. The second regards the orientation that should be adopted in formulating policies for design-driven innovation, which call for a true cultural change at the territorial level. The passage from a manufacturing to a design-based culture requires a thorough revision of the ways of reading and interpreting processes of

value creation, associated with the emergence of new professional roles coinciding with the creative class proposed by Florida (2002), with needs, desires and expectations that must be interpreted in new ways.

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