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ON THE CONCEPT OF FORMAL INNOVATION

ABSTRACT: Literature does not normally recognize, among various forms innovation can assume, the existence also of the *formal innovation*, i.e. that consisting of change in the product form, not necessarily associated with changes in product functions and production process. Formal innovation is decisive in productive fields as those of *fashion* and *design goods*. Moreover, in the small enterprise spatial systems, often based on productions with high *formal value added*, fashion styling or design and formal innovation, are held by big sub-contracting companies or by trading companies external to the system.

Today the SME model seems to be in some difficulties, while big enterprises look better facing innovation challenges, over all the three strategical fields of technological research, advanced professional education and market control. So there are in Europe many centres and agencies for promoting and diffusing innovation for SMEs.

Nothing of this kind is identifiable for *formal innovation*: large enterprise maintains its control on projecting and marketing phases, while decentralises material production phases: SMEs risk to become anonymous producers.

There is a clear, even if latent (and largely unsatisfied), formal innovation demand. What is missing is a bridge between formal innovation demand and supply: from here the idea of a regional policy aimed at providing such a bridge.

1. INTRODUCTION

It is common wisdom that the vitality either of an enterprise (as competition capacity) or of an economic system (as development potential) depends on their capability to cope with innovation processes. Not always, however, it is born in mind that besides *technological* innovation there are other sorts of innovation - according to Schumpeter's lesson - which are equally crucial, as organisational, financial and market innovation. Even less recognised is the *formal innovation*, i. e. that consisting of change in the product form, not necessarily associated with changes in product functions and production process.

Formal innovation is decisive in productive fields as those of *fashion* and *design goods*. Here innovation depends much less on engineering factors, as for technological innovation, and much more on intangible factors, as aesthetics, imagination and taste, close relatives of artistic creativity.

In a small enterprise spatial systems (SESS), not seldom based on traditional productions with high *formal value added*, fashion styling or design and, hence, formal innovation, are held, as well as market control, by big sub-contracting companies or by trading companies which own the most famous and largely advertised trademarks (*griffes*).

Today the SESS model seems to be in some difficulties, even if not in irreversible crisis, in front of post-industrial transition. On the contrary, after the "small-is-beautiful" age, it is the big enterprise that looks better facing innovation challenges, over all the three strategical fields of interregional and international competition: technological research, advanced professional education and market control, which constitute very embarrassing playgrounds for the SESSs.

So, not surprisingly, there are now, within almost every European region, centres, agencies, committees for "promoting", "enhancing", "improving", "diffusing" nearly every kind of innovation for SMEs (of product, production, organization, etc.), not to mention the attempts at "supporting", "helping", "sustaining" the SME managerial functions (management techniques, product marketing, professional training, access to banking services, etc.). Yet, results achieved by these efforts may be questionable; nevertheless the numerous initiatives testify the awareness of the innovation problems.

Nothing of this kind is viceversa identifiable for *formal innovation*, despite its cruciality especially for fashion and design production competitiveness. Not by chance large enterprise maintains firmly its control on projecting and marketing phases, while decentralises material production phases: so sub-contractor SMEs become anonymous producers of goods which have been designed and will be sold elsewhere and by others.

There is, thus, a clear even if underneath formal innovation demand. But it is a demand largely unsatisfied. It is not that formal innovation supply (design & fashion centres or

education institutes, celebrated designers, etc.) is missing: what misses is a *bridge between formal innovation demand and supply*. From here derives the idea of a regional policy aimed at providing such a bridge.

On this basis the paper:

- proposes a concept of formal innovation, in the frame of innovation theories;
- explores potentiality of formal innovation as regional development factor;
- identifies forms and instruments of a possible regional policy for formal innovation;
- verifies previous assumptions with reference to an ongoing experience in Tuscany in the context of its regional development programme.

Even if considerations made in the paper may be suitable for some generalization, theoretical and empirical references are primarily related to a context in which Technological Innovation (TI) and Formal Innovation (FI) processes operate in a framework of SMEs that are spatially organized as SESS, sectorially specialized in fashion and design driven productions, operationally belonging to sub-contracting networks.

2. INNOVATION AND FORMAL INNOVATION

2.1 Innovation: a short recall

Innovation is usually interpreted by means of two broad categories: organizational and technological innovation; the latter is, in turn, divided into product innovation and process innovation. These labels are more correctly referred to innovative *processes* rather than to single *events*, given that change phenomena are normally intertwined so that various innovation typologies result simultaneously present.

Standard knowledge about innovation can be summarised in the following statements:

1. when considered within the single enterprise, innovation leads to the notion of *innovative enterprise*, which is able to learn from and to react to context turbulence;
2. so learning processes (of both individuals and organisations) are located in the core of innovation phenomena, to the extent that learning economies are forecasted to substitute scope economies, as these ones replaced scale economies as entrepreneurial targets: now enterprise behaviour is no longer characterised by its tension towards an indefinable optimal structure but by the continuing reshaping of its structure in order to react innovatively to the endlessly changing context (Di Bernardo and Rullani 1990);
3. this implies an increasing importance of human factor of innovative processes and hence of labour and working processes;

4. focusing innovation process on labour aspects, besides product and market ones, means that innovative competitiveness is largely dependent upon learning attitude of workforce; but learning processes realise through many forms of practical activity of many individuals, so attention must be drawn not only on current labour skills but also and primarily on the mechanism, embedded in the spatial context in which the firm is located, that grant education, training, updating and reproduction of the local professional culture: innovation–labour–territory represent a strongly linked nexus.

Dynamism and vitality of SESSs have attracted attention on incremental or adaptive innovation, which induces continuos improvement processes that are capable to generate economic effects sometimes more relevant than those generated by the canonical Schumpeterian trajectory (invention-innovation) and the associated product life cycle (Rosenberg 1987). This approach reached its zenith with the Japanese *Kaizen*, in terms of an incessant quality improvement to which the whole enterprise manpower participate (Imai 1986). Yet, reality contrasts standard theoretical assumptions: when, for instance, high rates of product innovation are found not only within science based sectors characterised by strong R&D intensity but also within traditional (or "mature") sectors, where R&D is almost negligible. Product innovation in traditional sectors and SESSs, is in no sense linkable to new technological paradigms. But it cannot be constrained in the category of incremental innovation.

This sort of innovation manifests in durable consumers goods as new aesthetic characters (fashion clothing) or as new use ways (jeans dress from work to general wearing) or, in intermediate products (textile) as new materials (e.g. new fibres) requested by aesthetic exigencies.

Theorists consider this innovation path with haughty attitude, as if it were a pseudo-innovation, mainly because it does not pass through the conventional innovation channel (basic and applied research, technological testing, prototypes, etc.) nor it is measurable by means of customary indicators (R&D investments, patents, etc.); even less it opens new markets: new products do not substitute old ones owing to higher performances or lower prices but only for form's sake. But –this is the point– the substitution is made possible, through fashion mechanism, by subjective perceptive of consumer who feels the new product as radically differentiated from the old one. Here a weakness point is clearly recognizable in the traditional taxonomy of innovation, which distinguishes between incremental innovation, radical innovation and new technological paradigms (Freeman 1987).

2.2 Formal innovation

2.2.1 *An autonomous but not insulated phenomenon*. Then we repropose the category of *Formal Innovation* (Bianchi 1988, 1994a), in order to render autonomous the concept of a peculiar innovation which:

- does not necessarily imply new technologies or organizational changes, even if it is frequently associated with them;
- can, but not necessarily, make use of new materials;
- generates already existing products, but in new forms;
- by means of the new form, exalts the aesthetic and/or symbolic content of the formally innovated product;
- supplies, so, the formal value added, which makes the difference in terms of competitiveness, especially but not only on the fashion and design commodity markets.

Figure 1 locates formal innovation (FI) within innovation typologies. But the matter is a bit more complex. A research has been carried out by the High School of Industrial Design of Florence (ISIA 1995) in order to ascertain the possible linkages between FI and other aspect of the innovative process. Hundred objects (chairs, clothes, lamps, desks, crockery, etc.) with indisputable traits of FI were taken into consideration. The test proved that FI was associated:

- in 58% of cases with a structure change of the product;
- in 36% with changes in production process;
- in 22% with new uses of the same product;
- in 14% with new materials.

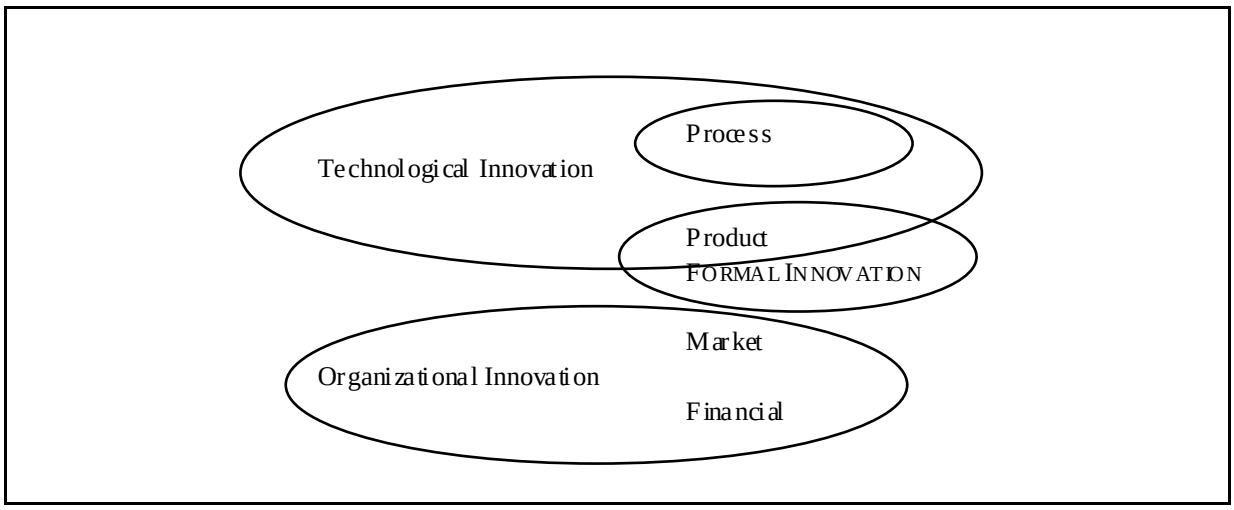

Figure 1 Formal Innovation within Innovation Forms

2.2.2 *Aesthetic contents and symbolic values.* The objective of FI is primarily dependent on the need to de–mature already existing products in order to re–create quasi–rents as those stemming from the general product innovation. This is done by attributing new aesthetic contents and symbolic values to products otherwise doomed to the terminal phase of their life cycle.

In this respect, the market reaction is deciding: the formally innovated product must be perceived by the market as "new" and "necessary". Two examples can explicate the point. The Alessi kettle, reshaped to dissimulate its practical function, has been a success owing to its "ludic component" (Gobbo *et al.* 1990), which makes it perceivable as a toy rather as a kitchen tool, despite its real usage. The celebrated Swatch watches are even too much known for adding words: they are undoubtedly instruments for time measuring, but they are sold and bought for their symbolic values.

The phenomenon is entirely within the market segmentation mechanism. Commodities gain their respective market niches by the power of a famous trademark, which raises entry barriers against new competitors. Whether these barriers rest on R&D investments or on an unrepeatable imagine, created by means of design sunk costs, marketing and advertising does not matter.

If it is indisputable that aesthetic social cultural, when translated into FI, was a significant factor of the Italian economy successes during the 1970s and 1980s (Porter 1990), it is, on the contrary, questioned whether this aesthetic advantage could be assumed as given once for ever.

2.2.3 *Formal vs. technological innovation.* In fact, *technological innovation* (TI) and FI follow the same time trajectory: quasi–rents are temporary and fate away owing to the Schumpeterian creation/destruction process. But they originate from very different production functions: R&D, researchers, technological education, on the one side; creativity, designers, aesthetical education, on the other.

However, FI genesis is worthy of some deepening. FI originates from three distinct processes:

1. *random creativity:* it is normally the fall out of artistic creativity; new stylistic features pass from say, paintings to everyday objects (see: Liberty style, Jugendstïl, etc.); the process is casual and sometimes linked to serendipity;
2. *planned creativity*: it is the standard source of FI, especially that which expresses in terms of industrial design; design offices, designer teams, project workshops carry on structured formal research, generally supported by marketing surveys in order to identify the appropriate marketing mix (product, price, market segment, communication);

3. *fashion creativity*: it is similar to the previous process, but here there is a seasonal rhythm and a specific role of the fashion designer, who acts as an intermediary between socio-cultural milieu and enterprise system; the process may move from society to enterprise, as semeiological interpretation of societal signs (e.g.: the generalization of jeans clothing), or viceversa, as consumer inducement (e.g.: the periodical change of skirt length); a mutually interacting process is also conceivable.

As to real manifestation of FI genesis, the already cited research (ISIA 1995) allows to know something more about, respectively, the choice to innovate and its implementation. In 85% of the 140 enterprises constituting the sample the decision to innovate is taken directly by the entrepreneur, with non perceptible differentiation in terms of firm size or of activity field. Only among SMEs there is a role (even if minimal: 12%) played by suggestions from salesmen and customers.

On the contrary, firm size discriminates as to the ways in which the FI is implemented. In the smallest enterprises (less than 25 employees) the project is designed personally by the entrepreneurs (72% of cases) or by local professionals (19%). Only enterprises with more than 250 employees have internal design staff (67% of cases), but almost of them have recourse to qualified and renowned designers (93%), also when they have internal staff.

2.3 The formal innovation cycle

The cycle of FI presents some analogies with the cycle of TI, but also some peculiarities of its own, which are irreducible to the other. The cycle of FI can be decomposed in phases, which will reveal useful in order to analyze possible FI policies.

Phase A. Identifying the market. The enterprise has, firstly, to ascertain if there is a potential market for its new product, at least a corresponding latent need. The enterprise, especially if it is a SME, cannot influence consumer needs; at the most, it can develop an advertising campaign to promote the product, but it cannot impose symbolic values which are what are in a given community at a given time. The enterprise problem is to understand major demand trends, by putting out a feeler or, better, acquiring internal instruments for “listening” to the society. Again, these are solutions which clearly exceed a SME capability.

Phase B. Acquiring FI skills. The enterprise, once assessed the existence of a potential market or a latent need, must equip itself of the pertinent skills (designer) to transform the market potential into a new (marketable) product. The possible designers may be remote in many senses: spatially, economically and culturally. The enterprise problems here are those of: attracting remote professionals (or developing local capabilities for generating these skills); financial resources availability; seeking a common language. All these action lines exceed not

only a single SME capacity but very often also that of a territorial system of SMEs and claim for pertinent policies.

Phase C. Making designer working. The enterprise and the designer have to understand societal trends in order to identify symbolic values that the new product must match. The enterprise (even a large one) cannot be assumed to own internal skills for the task: and *de facto* they are normally supplied by specialized consultants.

Phase D. Persuading the market. Only oligopolistic companies can try to influence societal trends or to induce new (real or artificial) needs. In general, trends are considered as given. But the market may be persuaded that the possible new product (which is so far still unknown by the market) satisfies symbolic values of the current trends. At this point, enterprise activity shifts from analysis to action: usually by means of marketing campaign aimed at attracting attention on the latent symbolic offer (not yet on the specific product).

Phase E. Identifying and designing the product. This phase comprises two different steps. The first one regards the conceiving a set of drafts of the possible product. Designers or fashion stylists propose their ideas to be tested against results of market analysis. The second step involves the interaction between the (external or internal) designer and the enterprise internal functions in order to grant the technical producibility of the product. Designer idea is transformed in a production plan.

Phase F. Producing the product. Here there are the standard production problems of a good with a high aesthetic content. Project prescriptions must be carefully implemented: from this the central role played by quality control functions. In the case of most innovative products or large production scale, the phase includes two feed–back cycles, (i) that between designer and production engineer, in order to mutually adjust project and production plans, and (ii) that between enterprise and market, in order to gain lesson from market reactions to experimental sales of the new product.

Phase G. Marketing the product. Innovation strategy focuses on product formal values and imagine, in the attempt to merge in a single message both product and enterprise imagine. Trademarks and griffes constitute not simple labels but the product identity. Advertising and communication policy must hence use a promotion campaign consisting more of communication than of advertising: articles by famous signatures on magazines, conventions and conferences, performances and cultural debates, etc. The process ends or, better, renovates by means of a permanent market hearing to nurture a feed–back able to consolidate aesthetic investment profitability in terms of enterprise reputation.

2.4 Spatiality of formal innovation

2.4.1 *Appropriate context.* FI can be assumed to have an intrinsic spatial nature. As for TI, also for FI spatial context more or less appropriate to generate and diffuse innovation can be identified. In the case of TI it is rather easy to reconnect innovation potential of a certain territory to its endowment in terms of scientific education and research centres, R&D investments, cultural level of the population, etc.

For FI to detect the potential innovativity of a territorial context involves slippery factors such as creativity, imagination, aesthetic taste, etc. Of course, it is not impossible to recognize different spatial densities of FI supply (designers, fashion stylists) and demand (producers of goods with a high formal value added). Yet, the question why FI supply and demand concentrate in a place and do not in another remains unanswered. The rare literature about creativity (Andersson 1985) deals mostly with scientific and technological creativity. By intuition, it can be admitted that an age–old tradition of aesthetic culture, as that which expresses in figurative arts, or of material culture, as that which expresses in arts and crafts, can locally root bents, skills and sensitivity which spatially differentiate a context from another. Geographical locations of productive activities with high formal value added (areas and/or districts of fashion, furniture, jewelry, pottery, etc.) may test this hypothesis.

The (preliminary) conclusion can be the following: there are spatial disparities of aesthetic culture and creativity; *if* these are the original sources of FI; *if* FI, as every other innovation form, is a development factor, *then* those disparities mean competition advantages disparities, which are susceptible to be reinforced through pertinent policies.

2.4.2 *Formal innovation as regional development factor*. Innovation policies cannot be the same for TI (based on the cycle: base research–applied research–prototypes–engineering–industrial production and with delayed returns) and for FI (based on the cycle: market trend analysis–ideation–design–production and with a very short access–to–market times). As policies address normally spatial entities and not single enterprises, references should be made to territorial systems. In terms of FI, a territorial system: (i) can either aim to low, middle or high market segments and (ii) may either consists of an *innovative* enterprises agglomeration or of an *imitative* enterprises agglomeration.

Quasi–rents, that motivate FI process, generate in phase E (product ideation and design). But, before product becomes standard and, hence, accessible also to producers which compete only on price, imitative enterprises have the opportunity to enter the market appropriating of minor quasi–rents, provided they are fast in time–to–market (for instance, in terms of ready fashion). Now the ready fashion market is larger, owing to lower prices, than the high fashion market.

Therefore it is possible also for enterprise systems without FI leadership to survive and grow, as well, if imitative processes are efficaciously managed.

FI is less appropriable than TI, to the extent it is strictly linked to a trademark renown. But market boundary between leaders and followers is much more mobile, to the extent the new product stemming from imitative processes, even if cannot satisfy symbolic needs of the most sophisticated demand, can benefit, within the less sophisticated demand, not only by symbolic value of the original innovative product but also by a comparable practical performance coupled with a lower price.

Finally, FI demand within SESSs, owns some peculiarities which must be taken into consideration:

- FI demand is often implicit, in the sense that it does not express through specific enterprise or SESS functions;
- FI demand is, moreover, implicitly denied by sub–contracting relationships, within which sub–contractor SMEs are given product design by sub–contracting firm;
- in any case even the realization of products designed elsewhere requires some degree of aesthetic competence;
- this competence becomes crucial when enterprise or SESS objective is imitative FI, which implies to enter an evolutive path, in terms of FI.

As this point the idea of a bridge (regional policy) between FI demand and supply emerges.

3. FORMAL INNOVATION POLICIES

3.1 European and Italian experiences

In order to identify institutions and initiatives aimed at generating and diffusing FI a survey has been carried out (Koenig 1995). Here reference will be made only to 13 cases of major interest (7 in Italy, 3 in France, 2 in Germany, 1 in Spain). Even if in many cases FI is not explicitly assumed as an institutional mission, nonetheless it has been possible to ascertain the existence of activities or policies substantially addressed to FI also within structure having education, promotion, TI missions.

French experiences seem the most mature ones, fully embedded in national and regional economic development policies; they include: French Institute of Design, several regional Design Centres, and Anvar, the national agency to support R&D.

German cases rely on a deeply rooted tradition: not by chance the Art, Design and Graphics Faculty is located in the famous Weimar Bauhaus; Meisenthal Glass Atelier is a sectorial agency: both are primarily committed in education.

The Barcelona Design Centre owns a sound reputation for the quality of its diversified initiatives (education, consulting, promotion, exhibition, etc.).

Italian experiences share the common character of being born within a SESS specialized in a single production sector, in general as a permanent activity resulting from an initial promotion and marketing initiative (normally, an exhibition). This is to prove the lack of national and regional policies explicitly aimed at FI. Italian cases include:

- Cantù Exhibition Centre: specialized in furniture, it interfaces designers and enterprises, diffuses technical information, analyzes markets and certifies product quality;
- Faenza Art Institute, Design Institute and International Museum of Ceramics promote separate and joint education, research and marketing initiatives in the field of ceramics;
- Udine hosts Promosedia, a centre for promoting image and sales of local chair production;
- Living–the–Time, in Verona, is an annual exhibition, which organizes many initiatives (workshops, competitions, seminars) about furniture industry;
- Author Crafts, in Colle Valdelsa near Siena, is located within a SESS specialized in crystal production, and periodically gathers local producers and internationally renowned designers to experiment and implement new forms of crystal objects and new applications of crystal.

To this list is to be added the Formal Innovation Network, a project promoted by Regional Government of Tuscany, which is currently taking its first steps.

Experiences have been examined with references to the phases of FI cycle as illustrated in par. 2.3 in order to ascertain cycle phase they cover. Results are given in Table 1.

Table 1 Institutions for formal innovation

Name	Country	Nature	Interventions provided per FI cycle phase						
			A	B	C	D	E	F	G
French Institute of Design	France	N		X					
Regional Centres of Design	France	R	X	X	X				
Anvar	France	N		X	X		X		
Weimar Faculty of Art & Design	Germany	U		X					
Meisenthal Glass Atelier	Germany	S		X			X		
Barcelona Design Centre	Spain	R			X	X			
Cantù Exhibition Centre	Cantù (I)	S	X	X	X		X		X
Art and Design Institutes	Faenza (I)	S		X		X	X		X
Promosedia	Udine (I)	S	X		X	X			X
Living–the–Time	Verona (I)	S			X	X			X
Author Crafts	ColleVdE (I)	S	X	X		X	X		X
Tuscany FIN	Tuscany	R	X	Xp	Xp	X			Xp

Legenda: N=national; R=regional; U=university; S=sectorial; p=pilot projects.
Source: Koenig 1995.

4. TUSCANY EXPERIENCE

4.1 Tuscany development today

Tuscany development is one of the most pertinent example of the so–called "Third Italy model" (Becattini 1975; Bianchi 1986, 1994b), that based on SESSs and industrial districts of SMEs operating in traditional sectors and benefiting from high levels of production process flexibility. The model is well known: so it will suffice to recall only some points, which are crucial to this paper purpose.

a. Current economic structure of Tuscany originates from an autonomous development path with less evident fordist features. Cities and little towns of Tuscany hold some development pre–requisites (as the past century handicraft tradition: Cozzi 1988), but they have never been development triggers. Nonetheless history, economy, politics and culture have created here a local mechanism of social regulation, which integrates entrepreneurship, workers and local government, so avoiding acute social unrest and easing an atmosphere of mutual trust and cooperation (Bortolotti 1994).
b. Relevant characters of industrial districts (technological dynamism, the competition–cooperation mix, face–to–face relationship, spontaneous evolution processes, a continuing change without sudden discontinuities, etc.: Piore 1991) are not stranger to FI processes. Attitude to adaptive innovation is particularly suitable for a not radical innovation as FI is and eases imitative and diffusive processes, which are reinforced by local cooperative culture. Reluctance to radical TI (as automation) instigates market niche searching, through customized products rather than through standardization. Manual dexterity, artisan quality plus production flexibility erect access barriers against competitors on price.
c. However, even if these features are contemporary manifestations of a long tradition, they cannot be assumed as given once for ever. As a matter of fact, they are currently put under stress by world–wide processes of globalization and innovation and by total quality and time–to–market imperatives (these phenomena are described in Bianchi 1994b, 1996). The most critical changes are affecting: local culture homogeneity, inter–generation reproduction of professional and managerial skills, local regulation model (Bortolotti 1994).
d. Another SESS difficulty is nested in a dominating entrepreneurial culture focused more on production than on product and market problems. So it is necessary to sustain current SESS evolution by means of a new nexus between tradition and innovation (both technological and formal). In the lack of this, modernization processes might result in uprooting SMEs from their local context and a consequent identity loss, which would be ruinous for FI based productions. Industrial districts or, in general, SESSs are neither in their terminal phase, as if they were only ephemeral episodes nor they have already got a safe status in

the post–industrial economy under the flexible specialization banner. Flexibility and ability to product customization have been, and still are, the basic strength points of these geo–economic systems, which have to be reinforced by appropriate policies, including that aimed at FI.

4.2 Formal innovation and regional planning

Preparatory analyses of regional planning in Tuscany pointed out that "regional innovative processes move at slower pace and lower level than in the comparable Italian regions" (Regione Toscana 1992a: p. 22). The need to improve Tuscany competitiveness is assumed as a "regional planning priority to be pursued through:

- supporting SME competition on international markets;
- helping SMEs to diversify their production;
- promoting innovation in its various forms: technological, organizational and *formal*" (*ibidem*: p. 24).

FI is clearly assumed as one of the regional development strategical fields. The assumption is in no sense obvious, neither in Tuscany nor in Italy, given the gap between standard culture of both private and public decision makers, even in those areas where productions with high formal value added are dominant.

There is a passage in the Policy Enterprise Programme (an instrument of the Tuscany Regional Development Programme), which is worthy of a quotation:

> "Despite Tuscany is a world pole of fashion industry and holds a significant world market share of furniture, no really important formal innovation in these fields has originated in our region. Competitive advantage granted by exploitation of manpower versatility and SME flexibility has forced Tuscany industry into material phases of production process, with a substantial exclusion from the previous (designing and projecting) and the subsequent (marketing) production process phases. Fashion styling and design and, hence, formal innovation, as market control, have remained in the hands of North–Italy or foreign trademarks" (Regione Toscana 1993: p. 18).

On these grounds, the 1992–1994 Regional Development Programme identified

> "the need to invest in research, education and transfer of formal innovation (design and fashion styling) because formal innovation processes are not only under the potential supply capability and the potential user sectors' exigencies (textile, clothing, footwear, furniture, industries) but also under the standards of other Italian regions with a lower specialization in these sectors, not to mention the current standards in comparable European regions" (Regione Toscana 1992b: p. 56).

So the decision to promote a regional policy for FI was made. The potential field to cover is very vast and implies relevant socio-cultural issues, especially if designer or fashion stylist is not seen as the arbitrary inventor of new whimsical forms but as a responsible member of the economic community. Between the extreme points of a simple form re–design to match market trends and the quasi–artistic creativity aimed at unique and signed items, there is a large domain to explore: that of relationships between latent and manifest community and consumer needs, enterprise goals, market constraints, technology opportunities, designer rational creativity (Bianchi 1994a).

FI can interface this intricate nexus of relationships, provided it is correctly assumed within a specific policy. A regional policy for FI has so to act as an interpreter of FI demand and as a promoter of feasible project solutions. It is a very challenge for regional planning authority. Objectives of FI policy, as outlined by Regional Development Programme seem reasonable, even if the cultural complexity of the project does not seem to be entirely grasped. However the Tuscany FI policy did the right first move, starting from the identification of territorial areas and sectors having high density of production with high formal value added.

4.3 Identification of potential clusters of FI supply and demand

The goal was to identify spatial clusters, in terms of SESSs, potentially able to express a FI demand and with FI oriented productions. The procedure comprises the following steps:

1. *Sector selection.* Only enterprises producing final consumer goods have been considered, assuming that capital goods (tools and machinery) do not have a relevant formal content. Paper, book and newspaper together with food and beverage industry (here classified as other sectors) have been excluded because aesthetic content of these productions is not dealt by design or fashion styling, but rather by graphic crafts, which have a peculiar FI process. FI influences, chiefly, production sectors linked, on the one side, to home furnishing and interior decoration (“house system”) and to personal look and clothing (“fashion system”). For several reasons, Regional Government decided to dedicate the first phase of its FI policy to the so–called “house system” and, hence, to design research as FI source.
2. *Firm size selection*. Only enterprises having their headquarters in Tuscany have been taken into consideration, assuming that local branches of extra–regional enterprises would not have been real active partners of a regional policy. Also Tuscan enterprises with more than 500 employees have been excluded, assuming that they have their internal design functions and, in any case, an already established relationship with FI supply. Table 2 illustrates sector composition of enterprises entered into the working database.
3. *Spatial localization.* Basic areas (corresponding to municipalities) with sector specialization rates higher than regional average have been aggregated, under the

constraints of contiguity, of a minimum of 500 employees (within enterprises of the sector in the area) and of belonging to the same local system (as daily urban system: Istat–Irpet 1989), to constitute sectorial–territorial clusters. Then clusters have been, furthermore, aggregated into inter–sectorial areas, under the territorial contiguity constraint, in order to obtain the spatial breakdown of the regional "house system" production. 13 intersectorial–territorial integrated clusters have resulted (Tab. 3): all of them can be seen as areas hosting territorial systems of SMEs with a potential high demand of FI.

Table 2 Enterprises producing consumer goods - Tuscany 1994

	Employees
Total consumer goods	24968
Other sectors	6048
Fashion system	13338
House system	5582
of which:	
Wood and furniture	*3438*
Marble and stone	*885*
Glass	*378*
Ceramics	*325*
Metal furniture	*203*
Gold and jewelry	*341*
Cutlery	*12*

Source: IRES Toscana

Some peculiarities emerge, which are worthy of few notes:

- marble and stone sector and gold and jewelry sector are highly concentrated in a single cluster (respectively, Carrara and Arezzo), of which represent the dominating industry;
- on the contrary, furniture sector is significantly present in every cluster but represents the dominating industry only in some of these;
- also ceramics and glass sectors are diffused in all the clusters, but reveal main differences as to concentration;
- metal furniture and cutlery sectors, even if of minor quantitative relevance, constitute significant agglomerates, respectively in Vicopisano and Quarrata.

The 13 intersectorial–territorial integrated clusters could be, reasonably, interpreted as the target areas of a regional policy for FI.

Table 3 Intersectorial–territorial integrated clusters. Tuscany. 1994
Employment. Percentages and absolute values.

	Ceramics	Wood and furniture	Marble and stone	Metal furniture	Cutlery	Gold and jewelry	Glass	Total	Total employees
Carrara	2,05	8,75	85,19	3,12		0,05	0,84	100,00	5.451
Quarrata		97,05	0,62	0,08	2,12		0,13	100,00	2.268
Borgo a Mozzano	3,59	27,98	10,36			3,40	54,67	100,00	735
Vicopisano	7,18	72,77	1,27	14,47			4,31	100,00	2.460
Lari	1,26	78,26	12,12	2,01			6,35	100,00	1.946
Sesto F.no	52,83	19,85	16,70	1,46	1,03		8,13	100,00	1.245
Empoli	32,21	26,54	2,36	0,89	0,17		37,84	100,00	3.558
Poggibonsi	2,71	71,94	4,04	6,82		0,37	14,12	100,00	4.248
Greve	48,30	48,51	2,22	0,73			0,25	100,00	810
Cavriglia	18,36	53,73	1,58	1,22		0,55	24,55	100,00	527
Arezzo	0,54	16,90	1,49	4,63		77,79	3,06	100,00	4.106
Monteroni	10,83	49,92	15,89	6,27		9,59	7,49	100,00	1.900
Montalcino	30,28	62,26	6,25	1,07			0,14	100,00	728

Source: IRES Toscana

4.4 The Formal Innovation Network Project

The project, decided by the Tuscany Regional Development Programme 1992–1994, aims at structuring a Formal Innovation Network (FIN) in order:

- to link the existing regional competencies in terms of FI supply;
- to detect the latent FI demand in the SME territorial systems;
- to bridge FI demand and supply, also reinforcing the latter by means of cooperation agreements with FI supply centres external to the region.

The project philosophy, hence, is not to create a new institution, but only a “light agency” to promote, foster and incentivate synergies among already existing entities and initiatives. This implies a permanent activity of research, proposal and animation in order to increase and diffuse enterprise sensitivity to FI and new attitudes of FI supply towards SME needs and potentialities.

The FIN Project (Koenig 1995) has been developed by the Regional Planning Department in cooperation with Koenig Centre and the participation of the Florence Industrial Design High School and the Florence University Specialization School for Industrial Design. Summarily, FIN missions include:

- enhancing innovative culture within SMEs, with special reference to FI;
- fostering cooperative interactions between different territorial systems, also by means of FI pilot projects;
- promoting local enterprise and production imagine on national and international markets:

- offering technical and formal quality certification;
- evaluating enterprise and territorial impact of FI projects;
- developing network operations with other territorial systems of SME, both in Italy and abroad;
- granting design consultancy along the entire FI cycle, from current production assessment to market promotion via telematics and multimedia devices;
- organizing education, training and retraining courses in matter of enterprise culture and FI creativity.

FIN Project is currently (July 1996) in progress. Its directorate and technical secretary have been already appointed; census of regional FI supply centres has been carried out; three pilot projects of FI have been elaborated. FIN implementation plan makes mandatory a result assessment at the end of each years of operations.

REFERENCES

Andersson O. Å. (1985) *Kreativitet*, Prisma, Stockholm.

Becattini G. (1979) Dal “settore industriale” al “distretto industriale”. Alcune considerazioni sull'unità di indagine dell'economia industriale, *Rivista di Economia e Politica Industriale*, 1.

Bianchi G. (1987) Maturità precoce, in G. Mori (ed.), *La Toscana, Storia d'Italia*, Einaudi, Torino.

Bianchi G. (1988) La Toscana prossima ventura, considerazioni e illazioni sullo sviluppo e le sue prospettive, *Design e dintorni*, 1.

Bianchi G. (1994a) Innovazione formale e sviluppo economico in Toscana, in E. Mucci (ed.), *Design 2000*, Franco Angeli, Milano.

Bianchi G. (1994b) Tre e più Italie. Sistemi territoriali di piccola impresa e transizione post-industriale, in F. Bortolotti (ed.), *Il mosaico e il progetto. Lavoro, imprese, regolazione nei distretti industriali della Toscana*, Franco Angeli, Milano.

Bianchi G. (1996) Double Shift. Towards a Convergence between Spatial Systems of Small and Large Enterprises?, Paper for the *36th Congress of the European Regional Science Association*, Zurich, 26-30 August.

Bortolotti F. (ed.) (1994) *Il mosaico e il progetto. Lavoro, imprese e regolazione nei distretti industriali della Toscana*, Franco Angeli, Milano.

G.K. Koenig Centre (1995) *Proposta di progetto di un centro per l'innovazione formale*, Firenze.

Cozzi M. (1988) Alle origini del design. La Toscana unita fra artigianato e industria, *Design e dintorni*, 1.

Di Bernardo B., Rullani E. (1990). *Il management e le macchine. Teoria evolutiva dell'impresa*, Bologna, Il Mulino.

Ferrucci L., Varaldo R. (1993) La natura e la dinamica dell'impresa distrettuale, *Economia e politica industriale*, 80.

Freeman C. (1987) *Il rito dell'innovazione*, Franco Angeli, Milano.

Garofoli G., Mazzoni R. (1994) I sistemi produttivi locali: un'introduzione,. in G. Garofoli, R. Mazzoni (eds.), *Sistemi produttivi locali: struttura e trasformazione*, FrancoAngeli, Milano.

Gobbi L., Brugnara R., Morace F., Valente F. (1990) *I boom. Prodotti e società degli anni '80*, Lupetti & Co., Milano.

Imai M. (1986) *Kaizen. Lo spirito giapponese del miglioramento*, Ed. Il sole XXIV ore, Milano.

Isia (1995) Ricerca sulla domanda di innovazione formale, Exercise Paper, Academic Year 1994-95, IV course (professor: G. Bianchi).

Istat, Irpet (1989) *I mercati locali del lavoro in Italia*, Franco Angeli, Milano.

Porter M. (1991) *Il vantaggio competitivo delle nazioni*, Mondadori, Milano.

Piore M. (1991) L'opera, il lavoro e l'azione: l'esperienza dell'opera in un sistema di produzione flessibile, in F. Pyke, G. Becattini, W. Sengenberger (eds.) *Distretti industriali e cooperazione fra imprese in Toscana*, Quaderni di studi e informazioni, 34.

Regione Toscana (1992a) *Analisi per il Programma regionale di sviluppo*, a cura dell'Irpet, Giunta Regionale-Dipartimento Programmazione, Firenze.

Regione Toscana (1992b) Programma Regionale di Sviluppo per il triennio 1992/1993 della Regione Toscana, *Bollettino Ufficiale della Regione Toscana*; Supplemento Ordinario, 29 del 27 maggio.

Regione Toscana (1993) *Programma obiettivo "Politica dell'impresa"*, indetto dal Programma regionale di sviluppo 1992-94, Giunta Regionale-Dipartimento Programmazione, Firenze.

Rosenberg N. (1987) *Le vie della tecnologia*, Rosenberg & Sellier, Torino.