

Industrial Districts of Italy: Local-Network Economies in a Global-Market Web

To Enio Benedetti

Industrial districts, flexible specialization or “Third Italy” represent a well known phenomenon of successfully cooperating chains of small businesses, mostly in northern Italy and especially in the Veneto region.

The phenomenon of small business collaboration is not limited to Italy and certainly not to geographical districts. *Networks* of small and medium enterprises (SME) is becoming a respected and rich field of concentration in the era of Network Economy. “SME Networks” is not only a concern of business and management, but also of information technology, regional economics, self-organization and global competitiveness.

Current special issue of HSM explores the phenomenon of Italian industrial districts through the original research of people most intimately knowledgeable of the phenomenon of *Terza Italian* - Italian economists. The issue has been edited by Professor Lucio Biggiero, HSM Guest Editor. The following seven papers have been selected to form the special issue:

- L. Biggiero: Italian Industrial Districts
- L. Pilotti: Evolutionary and Adaptive Local Systems
- S. Albertini: Networking and the Division of Labor
- G. Corò and R. Grandinetti: Small and Medium Enterprises
- M. Mistri: Industrial Districts and Local Governance
- I. Paniccia: The Performance of Industrial Districts
- F. Belussi: Path-Dependency vs. Industrial Dynamics

In this issue

1. *Lucio Biggiero* proposes the use of concepts of cybernetics and systems, like feedback, hierarchy, complexity, hypernetworks, requisite variety, recursivity and second-order cybernetics, as being the proper tools for studying and understanding SMEs and IDs. He states: “Cybernetics offers a sound theoretical basis for understanding the key concepts and redirecting industrial policy interventions.”

Based on those concepts, Biggiero defines network as “a set of connected elements,” and concentrates on networks of firms, called hypernetworks. Clearly, this vantage point bring forth the concepts of density or centrality ratio, size, structural equivalence, etc., as the research agenda relevant for IDs. “IDs are regional hypernetworks,” concludes Biggiero.

2. *Luciano Pilotti* takes a different view of IDs, based on learning, knowledge and neural networks thinking. The process of internalization of cognitive and coordinative competencies is viewed to be at the core of IDs performance through innovation. Pilotti views IDs to be “multilevel neural networks”, using sources, poles, nodes and promoters as descriptive tools. In this view, actors are oriented to build a

community of learning, reducing transaction costs, producing new knowledge through innovation and sharing values.

Pilotti's networks are dynamic, thriving on dynamic learning processes, systems innovation and technological relationships evolution. Whether the cognitive division of labor (or the division of cognitive labor), knowledge and its coordination are at the core on IDs as neural networks.

3. *Sergio Albertini* expands on similar themes: networking, knowledge and learning. Interestingly, like the two previous authors, he also refers to the network economy as "post-fordism". Albertini notes the decreased relevance of the division of labor and stresses the importance of "interaction" of actors and corporations. He prefers using networking to network, stressing the *process* of networking as a proper object of inquiry, rather than measurable structures and outcomes, or "static structural characteristics," as he puts it. (He also talks about the division of cognitive labor.)

Knowledge now becomes "produced", acquires contextuality and the knowledge production process complements the production process. The notion of "circular process of knowledge transformation" emerges. Rather than morphological features of networks, Albertini stresses specific process of coordination and the principle of self-organization as the two most distinctive aspects of IDs as networks.

4. *Giancarlo Corò and Roberto Grandinetti* abandon the neo-Marshallian notion of district as a closed local network, and explicitly recognize the role of globalization in continually producing, maintaining and degrading "local" networks. This "opening up" of local systems is a key transformation which they document on a survey in nineteen industrial districts of Italy.

"The ability to self-generate the human, financial and cognitive resources required for its own reproduction," is a distinguishing feature of ID according to these authors. This brings it closer to the Silicon Valley experience and thus crosses the conceptual boundaries of Italy.

The de-localization, extending the value chain (into network) and the evolution of human resources through horizontal (rather than vertical) cooperation are some of the other carrying ideas of this article.

5. *Maurizio Mistri* focuses on the problems of *governance* of industrial districts in Italy. What are the roles of local governments, local cultures, local social organizations in the development of IDs? Can law, government and political institutions help to initiate, promote, enhance and maintain the ID experience? These issues are very important if we consider the issues of transfer, replication and triggering the ID experience in different contexts. Mistri talks about "collective organisms and systems of rules" rather than networks.

Analysis of the Law 317/91 leads Mistri to conclude that "no administrative authority can give birth to a district, just as it cannot prevent it from dying." ID is not an area or network, but a dynamic socioeconomic reality.

6. *Ivana Paniccia* is attempting to measure performance as well as socioeconomic structure of twenty four IDs in Italy, in an effort to relate performance to structural factors. To that purpose she uses definition of ID as a "sociogeographical entity characterized by a community of people and population of firms."

Paniccia's work towards establishing quantitative, measurable and empirical dimensions of ID research belongs among the pioneering ones, especially in terms of

including structural analysis. This represents extensive effort: units of analysis, sample selection, operational definition of ID, collection of data, interviews, calculation of indexes and multivariate analysis: Paniccia has absorbed the entire methodology.

Her results seem to encourage that superior performance is not strongly linked to specific structures, but rather to their (more general) dynamic, circular and cyclical processes of transformation.

7. *Fiorenza Belussi* studies two specific industrial districts: one older, based on path-dependency, continually reproducing itself and diffusing stable knowledge, the other, newer, based on rapid growth and generative learning, producing new and contextual technical knowledge, continually and originally redefining itself.

The problem is clear: a sociogeographical definition of ID can hide and subsume two fundamentally different organizational patterns under the same umbrella. There is a possibility that global-networks and IT-based network economies à la “Silicon Valley” are different “animals” from the original Marshallian IDs of Italy.

Belussi has undertaken an extensive empirical study, exploring the roles of knowledge production, evolution of local structures and that of local institutions. Again, circular flows of knowledge production emerge as a potent, modern conceptual tool. How can two, initially quite similar local systems, diverge along so very different rules? They probably were not *that* similar to begin with.

Overall, these seven articles represent crucial evolution from static and structural to dynamic and organizational thinking and view of IDs in Italy.

Autopoiesis of SME networks

A still unexplored issue concerns the *autopoiesis* (self-production) of SME networks as they become embedded in global network economy. These networks are not stationary and do not resemble fixed infrastructure, wired linkages or mathematical constructs. Their nodes are not fixed and their linkages cannot be “counted”. These dynamic networks are in constant flux, their nodes being continually created, degraded and displaced, their connections being continually redefined, reconfigured and redirected.

The industrial districts (IDs) of Italy are still undetermined with respect to what lies at the core of their success. Many causes, aspects and attributes have been advanced: socio-territorial cohesiveness, flexible specialization [4], family+trust relationship, self-organization, shared knowledge, etc. Although all these characteristics are undoubtedly descriptive and important, they could well be the outcomes or effects rather than the core causes of ID’s success.

The answer appears to lie in the mastering and controlling the customer-supplier value chain, the whole production process. The ID small businesses are not just market-scattered competing clusters, nor are they simple appendices to large companies and conglomerates. Instead, they increasingly respond to customer markets directly, through activating linkages most suitable for specific customization. They emerge, persist and disintegrate according to the alternative and requisite manifestations of customer-supplier value chain.

In Fig. 1, the string of small businesses covering the defining (initial) value chain is sketched. As the alternative chains develop (in response to new customers, technologies or products/services), like I and II in the picture, the

Figure 1.
Industrial-district formation along the value chain

original businesses do not “cover” all activities of new chain-processes. A room for new business or business expansion-reengineering is thus open and flexibly filled. Some original companies, unable to adapt, may go out of business, their knowledge agents absorbed into newly emerging units. As long as SME network responds and “covers” the ever-changing chains, the network remains self-organizing (autopoietic) and self-sustaining.

It is the chain or process induced productive synergy which distinguishes SME network from a simple collection of independent businesses.

Such networks of small businesses represent a newly emerging mode of production, eminently suited to global competition, innovation, flexibility and knowledge production - they could become autopoietic (self-producing) and thus self-sustainable in an ever-changing global environment.

Autopoietic organization can be defined as a network of interactions and processes, involving at least:

- 1) *Production (poiesis)*: the rules and regulations governing the entry of new components, such as emergence, input, birth, membership, acceptance.
- 2) *Bonding (linkage)*: the rules governing associations, arrangements, manufactures, functions and positions of components during their tenure within the organization.
- 3) *Degradation (replenishment)*: the rules and processes associated with the termination of membership, like death, separation, consumption, output and expulsion.

In Figure 1, the above three poietic processes are connected into a *cycle of self-production*. Observe that all such circularly concatenated processes represent productions of components necessary for the subsequent processes, not only the one labeled as "production." Although in reality hundreds of processes could be so interconnected, the above three-process model represents the minimum conditions necessary for any autopoiesis to emerge.

An autopoietic system can thus be defined as a system that is generated through a closed (circular) organization of production processes such that the same organization of processes is regenerated through the interactions of its own products (components), and its boundary or distinction emerges as a result of the same constitutive processes.

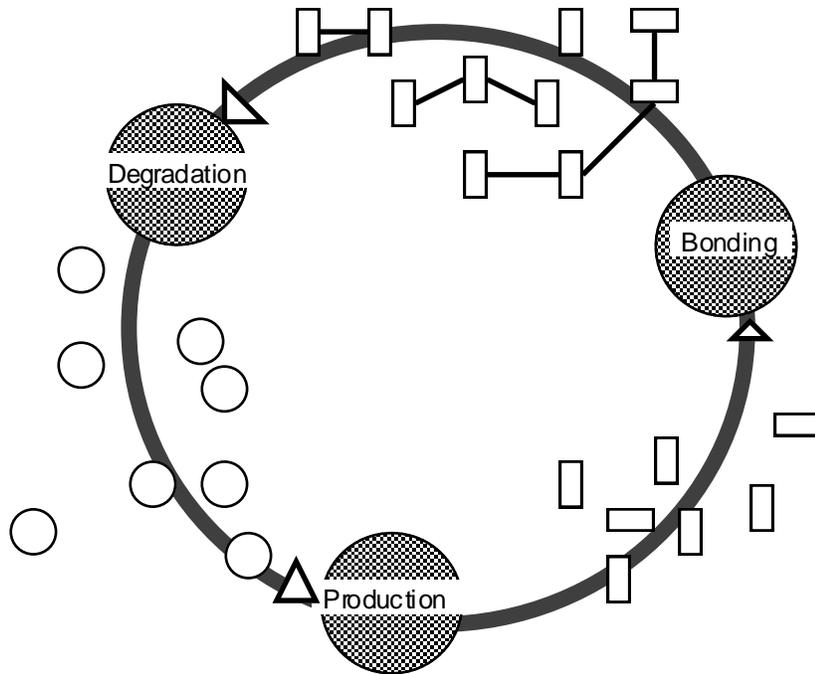


Figure 2. Circular organization of interdependent processes and their "productions"

Autopoietic organization is an autonomous unity of a *network* of productions of components, that participate recursively in the *same network* of productions of components, which produced these components, and which realize such a network of productions as a unity in the space in which the components exist.

Conclusion

It should become clear that SMEs are becoming an integral part of a Network Economy [2] and are no longer limited to Italy. American "Silicon Valley", Bavarian "Isar Valley", Norwegian "Nordvest Forum" plus a large number of SME networks in other regions, from Australia to Spain, attest to the fact that the advances of the global economy bring forth the *regional advantage* [5] and substantially enhanced regional autonomy.

Although the process of globalization undoubtedly brings forth more apparent centralization, supranational institutions and economic integration, it is also accompanied by enhanced regional and local autonomy and empowerment.

The nation state is clearly in its decline and will probably not recover. But supranational institutions, promoted by increasingly disempowered nation-state bureaucrats, are not going to take over. Paradoxically, it is the region - a less artificial unit than either nation-state or integrated suprastate - that is going to become the natural unit of economic, political and cultural production and activity.

For these reasons, Italian industrial districts are not going to remain geographically and culturally embedded phenomena, but are going to spill over, influence and spread in hundreds of new and "untypical" forms all over the world,

including regions of Italy itself. It is the Veneto, Orange County and Isar Valley where the network-economy future lies.

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