

In the present times when global linkage is the key for progress, it has been NID's endeavour to foster a network of international design institutions that can derive strength from one another in the development of a vision and strategies for future directions in design education that are appropriate in the context of emerging 'Global-Local' convergence. With the organisation of the International Conference DETM 2005 and compilation of articles through this publication, NID has created a forum for discussion on an important issue that is relevant to all global institutions of design education that seek to benefit from the blend of their traditional educational systems and contemporary perspectives.

About NID

The National Institute of Design, established in 1961 by the Ministry of Commerce & Industry, Government of India, has evolved as one of the foremost global institutes in design education, offering professional education programmes in industrial, communication, textile, and IT integrated (experiential) design. During its illustrious journey spanning over four decades, NID has developed unique multidisciplinary academic culture that has been enriched by strong industry linkages, design consultancy, research and outreach activities, and a commitment to spread the power of design to the social and economic sectors. NID is a unique institution with many problem-solving capabilities, depths of intellect and a time-tested, creative educational culture in promoting design competencies and setting standards of design education.

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Design Education Tradition and Modernity

Vijai Singh Katiyar
Shashank Mehta

Design Education Tradition and Modernity

Scholastic Papers from the International Conference, DETM 05

Editors
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Foreword

Design is now being increasingly recognized as a value adding link between culture and products, services and experiences and between businesses and customers. As a "problem defining and creatively solution seeking discipline" design has immense potential to foster partnerships with governments, target industries and other stakeholders not only to provide a leading edge in the market place but also to develop a better quality of life.

The new Millennium has heralded sweeping winds of globalization, aided by converging technologies and "ideas driven" economy. Though globalization has opened doors of economic prosperity to the "majority world" it has also raised the issues of sustainability, appropriate technology, culture-centric preferences, survival of local arts and crafts etc., like never before. The challenge before design education is, therefore, to proactively respond with speed and imagination to the emerging contexts. This calls for introduction of innovative approaches to design education, collaborative practices, international linkages and partnerships, with focus on development of a fresh design pedagogy which draws upon the time tested traditions of design education and practice, while absorbing the convergent and ubiquitous new media and technologies.

The issues of tradition and modernity have therefore, perhaps never been more relevant to design education than in the 21st century where the dynamics of globalisation and its socio-economic consequences have prompted design educators and thinkers to critically appraise the role of design in enhancing and delivering the quality of life in a more accessible and inclusive manner.

The three-day International conference on Design Education: Tradition & Modernity (DIEM) organised by the National Institute of Design under the leadership of Mr. Shashank Mehta and Mr. Vijai Singh Katiyar, faculty members was an attempt to bring together on a common platform eminent design educators, practitioners and senior students to address some of the issues in the context of deep-rooted design traditions on one end of the spectrum, and the need for a relevant and holistic approach to design education to meet the demands of the global economy, on the other. The Intent Statement on Design Education adopted at the end of the conference endorsed by the delegates from 27 countries from different continents not only reflects the intense deliberations that took place during the conference, but also encapsulates the vision of global design education fraternity and paves way for a healthy forward dialogue and sharing.

The National Institute of Design takes great pleasure in publishing the full-length papers presented at the path-breaking DIEM conference. I am sure this publication will promote dissemination and discourse of diverse design knowledge and experience on a range of issues that are relevant to the design education in different parts of the world: the developed, developing and least developed. The concerns of design education may vary in details in different contexts and countries but the broad directions seem to be having a lot more convergence than anticipated as is evident from the presentations.

Dr Darlin O Koshy
Director, NID.

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Stimuli for Change

Projects for building territorial design systems – *Methodology and Case Histories*



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Worldwide Italy is known more for design driven innovation capabilities than for technological innovations. Italian Design has been the key factor for the promotion and internationalization of Italian manufacturing sectors since the national crisis caused by the 2nd World War, giving birth to the undisputable success of the so called "Made in Italy" products.

Due to this success, many countries which are striving for innovation today, have turned to Italy for understanding the "innovation processes" in industries and the smity of design's contribution to innovation, in order to replicate the same circumstances in their national manufacturing systems. To satisfy this request, several projects led by individual professionals, institutions and associations have been developed abroad with the intent to promote, internationalize and transfer the different aspects of Italian design know-how to other contexts and international realities. However these projects have been sporadic events which, apart from their singular success, have not given birth to strong changes or autonomous developments/evolutions of the transferred know-how in local communities and therefore have not initiated the expected ongoing processes of innovation throughout the clusters of industries in the territories in which they were implemented. In other words the projects and actions lead till now in the field of design knowledge transfer to industrial districts or clusters of industries abroad have only had a "short term sense" and therefore cannot truly to be considered "change initiators".

Keywords: *industrial districts, territory, Made in Italy, university and enterprises, design projects*

Introduction

Worldwide Italy is known more for design driven innovation capabilities than for technological innovations. Design has been the key factor behind the undisputable success of the "Made in Italy" products since the 2nd World War. Many countries which are striving to replicate the Italian success in their manufacturing sector have turned to Italy to understand the "innovation processes" in industries and the contribution of design to innovation. For this purpose, several projects led by individual professionals, institutions and associations have been developed abroad with the intent to promote, internationalize and transfer the different aspects of Italian design know-how to other international contexts.

However, these projects have been sporadic events that, though individually successful, have not given birth to strong changes or autonomous developments/evolutions of the transferred know-how in local communities. These projects have, therefore, have not initiated the expected processes of innovation throughout the clusters of industries in the territories in which they were implemented. In other words, the projects that aimed at transfer of design knowledge to industrial clusters abroad have only had a "short-term sense" and, therefore, cannot truly to be considered "change initiators".

Answering Territorial Needs – Methodology Building

The methodology of the Politecnico di Milano to respond to national and international requests for innovation in industry has been developed over a five-year research process, which is briefly described in the following paragraphs.

The industrial production system in Italy mainly comprises industrial districts of SMEs. The crisis of the small and medium industries in Italy led to increasing requests from national and local entities to find new solutions for increasing the competitive value of Italian industries in the global market. A group of researchers of the INDACO Department (Industrial Design, Art, Communication and Fashion) of the Politecnico di Milano began to reflect on how design, and in particular, design research could help the Italian industrial districts in this battle against the crisis which was leading them to eventual extinction. In fact, design having been the main factor behind the success of Italian products, researchers believed that if Italian SMEs were to compete with other industries worldwide, design had to be its main strength and value for the future. The main questions and doubts that led the research were the following: Why is design the main competitive factor of Italian industries? How does it contribute to innovation? What role will design have in the future economic, geographic and political assets of the world? What is the role of the design universities in this new scenario?

In order to answer these questions, research was conducted through Desk Research and On Field Research methodologies.

Desk Research – System Research: Before looking at ways to help the Italian SMEs and in particular Italian districts to survive globalization, the group developed two main researches which have been defined as System Research because their objects of investigation have been the Italian Design System and the Italian Industrial Production System. The main aim of this System Research was to investigate and understand the birth and development of the "Made in Italy" phenomenon by mapping both the Italian Industrial Productive System² (a map of Industrial districts, meta-districts and main productive sectors in which design has a main role) and the Italian Design System³ by analyzing/codifying both the tacit and explicit Italian know-how in design (identification of actors, processes and channels).

On Field Research – Action Research: Several On-field Research Actions have been developed in collaboration with local district entities (institutions, consortiums and associations) in order to test methodologies and research insights in different territories, industrial contexts and productive sectors. Since the year 2000, Sistema Design Italia⁴, has carried out approximately 20 projects in different Italian territorial contexts involving over 150 students, 60 professors in research action projects guided by design innovation.

Therefore, as mentioned above, the methodology developed and consolidated in the past five years is based on the results of the actions described above, a series of case histories, experiments, attempts, errors, failures and victories have given birth to a mature vision of how to work with industrial districts and territories and lead them through ongoing innovation processes. Thanks to the work of many researchers, today we have a clearer view of how design systems work and interact with production systems and have developed the right tools for mapping and codifying other territorial systems and creating "ad hoc" strategic plans of action for developing innovation processes in specific territorial contexts.

Methodology Filters

The systems research has come to the conclusion that the competitive factor of Italian products is mainly due to the strong bond and interaction between peculiar competencies of productive know-how of specific territories and the project planning know-how of tacit and explicit design resources leading to continuous innovation processes. Therefore, the following methodology works on autonomous development of innovation by integrating local entrepreneur capacities (small and medium enterprises) with local project capacities (diffused design).

The role of a design research center, such as a design university, in this process is that of a mediator between enterprises and design resources, between local communities and global markets, between the productive systems and regional politics. The center also acts as a catalyst of design driven innovation processes, as an investigator of innovation between different cultural models and technical knowledge. The center aims to rediscover traditional techniques and find ways to reutilize them and serves as a guide through the transition from tradition to innovative concepts.

Before analyzing each step of the methodology, it is important to understand the main characteristics of projects undertaken in territories about which little is known to the research group. Some of these characteristics are not new to the design research community especially in the "Design for Development" field of research; but it is important to state the values that push the researchers in these projects since they are fundamental for the correct application of the method in each of its phases. Projects for building territorial design systems should:

Have a bottom-up⁸ and participative approach⁹: To identify and plan research-actions in collaboration with local associations, institutions and entities and to involve the local resources in the project activities. If in some projects a top-down approach is used, in projects for industrial districts and territories a bottom-up approach is preferred since the stimuli for change is born inside the local community and creates change through different pro-action forms and modalities⁸. Participatory preparation of an action plan is the only way to find original and unique responses to a specific territory. In this perspective, each territory will have a different project response and there will be no pre-conceived "bundle" responses and no identical "case histories". The further away the context lies from the original context of the design research group the more this feature becomes important⁹.

Build alliances with economy, political and social paradigms: Design can do nothing if the political, social, cultural and economical conditions are not adept for catalyzing project processes (Zurlo 2004). The fault of alliance with economy and political paradigms has been one of the major failure factors of past design knowledge transfer projects. However, to know political and economical issues does not mean to reduce the autonomy of the researchers to develop a project, but merely that in the planning phase they will take into consideration the restrictions imposed in order to bring forward an autonomous response. In international projects, this feature becomes more complex because the project will need to also take into consideration the internationalization strategies of each nation involved a part from the restrictions of the financier and of the actors and territories involved.

Build capacities: To enable local communities to express what people are actually able to do and to be (Sen) is the main philosophy that leads the project. The main goal is to give communities the capabilities to communicate their ideas, to express their selves; to build a bridge to other markets, to give industrial districts and productive territories the liberty to access to other markets, the liberty to communicate and collaborate with other realities and cultures and encourage cross-fertilization of cultures in new product generation processes. This vision is especially important in today's scenario in which "to export" final products¹⁰ or "to delocalize" production appears to be vital for a company and therefore, they must be able to decide with whom to communicate and how.

Sustain regional identities: The definition of the identity of a territory or even of a cluster of enterprises is not a simple task, especially if one takes into consideration that the community of a certain territory is not able to read nor give it a form on its own¹¹. Moreover, since the beginning of the communication era, the contamination of cultures both virtually (through media) and physically

(through emigration) has put aside all the traditional values and rituals transforming them into mere 'ethnic objects,' 'tourist gadgets' or 'souvenirs.' In these territories designers have neglected all forms of 'ethnic' contamination and have abandoned their productive traditions. In projects for building territorial systems, territorial differences and specificities are considered to be a strength and not a threat to development. All projects must work on giving the local communities the tools to reinterpret their traditions and transform them in innovative solutions.

Never be in competition with the design community: All projects aim to integrate design communities (near and far) with local productive systems. Therefore, the design research group should create a strong trusting bond with designers and design firms in order to involve them actively in the project activities. In some cases, the designers can be part of the design research group and participate in the project planning.

Building Territorial Design Systems

The de-codification of the know-how achieved by past experiences and their reinterpretation in each new context has given birth to the following methodology, which becomes the framework in which each future project fits in creating unique results. Past experiences have shown that workshops and seminars that are not included in a long-term project are not sufficient for initializing autonomous innovation phenomena. Therefore, all projects proposed must aim to go beyond the past logics of sporadic consultancy visits that only solve small individual problems (single companies or small groups of students) without having a global vision of the development of a territory. These projects fail to have a long-term systematic approach and risk to abandon the territory in the processes of product development, promotion and distribution leaving a strong sense of frustration and delusion to local communities who are incapable of facing these challenges alone¹².

Like all other projects, projects for building territorial design systems also need "triggers" (advantageous circumstances) to avoid barriers that prevent the start-up of the project. Even if the territory does not present any design actors, the following circumstances must be fulfilled:

- the presence of a cultural intermediary of the project;
- the presence of a local entity who believes in and supports the project and who has a good relationship with the other actors of the territory (in particular with enterprises);
- the presence of a productive system (industrial or artisan);
- the presence a stable financier.

These circumstances do not guarantee the success of the project, nor the continuity in time of innovation processes, but they are absolutely necessary for starting the project.

The phases:

Reading the Territory: analysis of the district's environment and definition of the degree of innovation

Can a territory be read through a "design research" lens?

The system research lead on the Italian design system has showed that not only is this possible, but it is also fundamental for defining the **degree of innovation** of a specific productive territory before beginning any kind of action. The first phase of projects for building territorial design systems, is to analyze the territory by organizing visits to design entities and non-design entities that act in the different phases of the Product System¹³ (single companies, universities, design studios, design promotion associations, design centers, local design agencies, service agencies for districts, etc.) This phase can be called auditing. During auditing, the research group collects all information and systemizes it in order to give birth to a **territorial design map** in which the different entities are divided into groups¹⁴: direct actors (designers, stylists, design firms, etc.), indirect actors (prototype firms, photographers, etc.), flux actors (fairs, exhibitions, cultural entities, etc.) and support actors (design associations, design centers, etc.). Subsequently, a series of innovation indexes are calculated according to the number of actors present in the territory and the intensity of their interaction with the local productive system.

This phase reaches its best results when some local actors (local university or design center researchers) are part of the group of researchers. If the industrial district taken into consideration already has a high index of innovation and there is a complete collaboration on behalf of the enterprises, most information can be collected through a survey (questionnaire) to be filled-in by each entrepreneur.

Participative Action Planning

Once the innovative index of the territory has been defined and the local actors have been mapped, the research team defines the action plan in direct collaboration with the local entity and cultural intermediate of reference for the project. This is the most delicate phase of the project because it is in this phase that the research group must **build trust in design** on behalf of the local actors who will be called to participate in the single actions. The local actors must not only trust the research group, and therefore the project, but they must also be convinced that design can really initiate a substantial change. Trust translates project actions into economic advantages in terms of higher sales, new markets, lower costs, etc. Usually a **trust building seminar** is organized in which all territorial entities are asked to participate. The aim of the seminar is to share the action plan and look for approval, spread-out the culture in design as an innovating agent and competitive value, confront the project objectives with the district potentialities and search partners for each project action. To support this phase of the intervention, the team of researchers at the Politecnico di Milano began in 2002 a new System Research called "Design for Trust."

Action

All projects can be made of a combination of actions in the fields of design research, education and promotion. Each action has a specific aim that contributes to the creation of territorial design systems. The sequence of the actions will depend upon the presence of *design resources* in the territory and its index of innovation, i.e., the range from total absence of design resources and a very low innovation index, to a high presence of design resources and a high index of innovation (however, a high population of design resources does not mean that the district will automatically have a high innovation index, for instance, in the case of artisan production). The actions will lead the district through an increasing innovation process, starting from strengthening the relationship between the productive system and design actors up to creating local institutions for promoting design innovation processes. The sequence of the actions cannot be casual and must be based on the real potentialities of the examined territory.

The main aims of the actions are to:

- strengthen the education processes in design: contribute to the education of professionals, researchers, design service experts and design directors for SMEs;
- favour and push the birth of institutions which support design innovation processes (universities, design centers, specialization courses, etc.);
- favour and empower the creation of new entrepreneurial design initiatives (design studios, design incubators, etc.);
- strengthen strategic sectors of local realities (identity, tradition, etc.).

Monitoring the results

The final phase of monitoring the results is not just an observation phase, it is a pro-active phase in which, on one hand the local community has the possibility to continue actions on its own knowing that it can count on the support of the project research team, and on the other hand it is a time in which the project team can receive feedback on the actions carried forward and can evaluate its work. Evaluation visits can be useful if they have a real aim, for example, an exhibition or an evaluation of work done by the local community.

Archive of experiences

Since the field in which this methodology is applied is very complex and depends on an infinity of variables, the collection of all case histories, successes and failures is the only way to keep a record of the link between the typology of the territory and the kind of design project applied.

Case histories (three of the most significant projects)

1999-2001

DxD – Design for District Design for Industrial Districts. Expertise systems and new net connections for the competitiveness of Local Production Systems

Founded by: Regione Lombardia (Lombardy Region, Italy)

Abstract: DxD was the first experimental project for investigation of new ways of transferring guided design innovation to the local productive systems that took place in collaboration with one of the most important district areas in Italy. The so-called "DxD operation" was originated by the similarity of intents and by some favourable circumstances (a framework agreement between Lumetel (territorial district agency) and Politecnico; a funding by Regione Lombardia, an aid by Camera di Commercio di Brescia).



Figure 1: Projects developed by students

The question was "what can a district agency and a design university do together?" The most immediate answer was: a design award for the students. This first suggestion is definitely interesting to stimulate new design ideas and to become itself a way to promote the creative vibe, but it was also clear that the well-established dynamics of a design competition wouldn't suit our partners too well. A competition is an unusual event, restricted in time, which rarely leaves any sign in the territory. Furthermore,

participants and promoters normally don't have any kind of relationship other than through the initial announcement of the competition and the final award ceremony. The acknowledgment of these limits requested the definition of a new competition procedure that would have integrated the two realities: production (SMEs of the district) and project definition (young designers).

Aims: The aim was to lead the firms belonging to the district to undertake product differentiation policies as well as policies for the improvement of their communication system and for the development of services tied to distribution and marketing of the products, to better face the medium-high part of the demand.

Actions: Trust building seminar, 60 students worked for 3 months inside 25 companies giving birth to 40 projects (product, communication and services), final exhibition, and project catalogue.

Partners: Politecnico di Milano, Regione Lombardia, Agenzia Lumetel (Development Agency of the Italian District of Lumezzane), Club dei Distretti Industriali Italiani, Chamber of Commerce of Brescia

2002

Development of Industrial Districts in Brazil: starting from the experience of Regione Lombardia: Campina Grande
Financed by: SEBRAE (Brasil), PROMOS – Azienda Speciale della Camera di Commercio di Milano per le attività Internazionali, Camera di Commercio di Milano (Italia), BID

Abstract: The district of Campina Grande in Brazil is a very small productive reality, which produces final products in the shoe-wear sector. Campina Grande has a long tradition in working leather and producing leather shoes for woman and man, but because of a recent crisis all industries have abandoned this tradition and now produce only plastic and synthetic shoes.



Figure 2: Prototyping phase

Aims: The project has focused on building design capacities of young designers who were not able to find adequate education in their territory. After the success of this course, all students are now working in the local industries and the local university is starting a specialization course in fashion and shoe wear.

Actions: Mission and workshop, design course, monitoring the results, prototyping and local exhibition, agreement with local universities, design competition.

Partners: SEBRAE (Brasil), PROMOS – Azienda Speciale della Camera di Commercio di Milano per le attività Internazionali.

2002-2004

UDIP_Pyme: Design driven innovation for the SME in Chile: Centro di Eccellenza in Valparaíso
Financed by: ISTITUTO PER IL COMMERCIO ESTERO (Italian Institute for International Commerce), REGIONE LOMBARDIA, Universidad Técnica Federico Santa María (Valparaíso-Chile), Universidad de Valparaíso (Valparaíso-Chile).

Aims: Building a Design Centre in the Universidad Técnica Federico Santa María in Valparaíso, Chile ("Unità Specializzata nello Sviluppo di Prodotti ad alto Valore Aggiunto per la Piccola e Media Impresa" [UDIP-Pyme]). The Design Centre has the task to bring innovation to SMEs of the 5th Region of Chile through promoting design projects and linking the enterprises with universities and local, national and international entities. Therefore the aims of the project are:

- to give SME's the right tools for developing and bettering the role of Industrial Design competencies in new product development projects;
- to develop new project resources and design capabilities inside SMEs;
- to support the education and research in the industrial design fields;
- to support the promotion and diffusion of industrial design culture inside entrepreneurial environments;
- facilitate the development of entities and organizations that support SMEs in new product development processes;
- facilitate the development of relationships between Italian and Chilean enterprises (eg. through joint ventures, collaboration agreements, partnerships, etc.)

Actions: 2002-2004: Mission, auditing and forum, Design course in Italy for 6 professors of the Chilean universities (actors of the UDIP), Local workshops.

2005-2006: two Chilean PhDs in the Politecnico; Pilot Projects for SMEs: "Co-Branding project," "Private Label Retailing project," "Co-Design project"

Partners: Politecnico di Milano, ISTITUTO PER IL COMMERCIO ESTERO (Italian Institute for International Commerce), REGIONE LOMBARDIA, Universidad Técnica Federico Santa María (Valparaíso-Chile), Universidad de Valparaíso (Valparaíso-Chile)

Cestec (Centro Lombardo per lo Sviluppo Tecnologico e Produttivo dell'Artigianato e delle Piccole Imprese).

Conclusions

As can be seen in the case histories, there is no specific production sector in which the methodology cannot be applied. Before beginning the project, a selection of experts from the Politecnico and from local universities is done according to the typology of actions and the productive sector of the district.

The methodology is still in its testing phase, especially at international level since three international projects are too few to be able to consolidate it. However, the results achieved till today are very encouraging and the international projects' success lies mainly in the will of the territories to continue working and experimenting even in absence of an external support (especially in financial terms).

The future challenge lies in building international networks of cooperation capable of merging territorial production systems and design systems in international new product development processes.

Notes

- 1 "Cry for Physical Interfaces for Design Solutions: A case study of entrepreneurship for change through design," Ashok Bhandari, Subhashis Banerjee, Umakant Snni, in the Development by Design Conference 2002, India.
- 2 idem.
- 3 Simonelli Giuliano, Maffei Stefano, I territori del design, made in Italy e sistemi produttivi locali, Il Sole 24Ore, Milano, 2002.
- 4 A.A.V.V., Sistema Design Milano, Abitare Se gestà, 1999, Milano and Simonelli Giuliano, Paola Bertola, Sangiorgi Daniela, Milano distretto del design, un sistema di luoghi, attori e relazioni al servizio dell'innovazione, Il Sole 24Ore, Milano, 2002.
- 5 A network of research agencies for innovation and promotion in the design field, 8 centres inside universities spread out on all the Italian territory (Milano, Firenze, Roma, Chieti, Genova, Palermo, Napoli 1 e la Seconda Università di Napoli) in which small groups of researchers are fully active in promoting innovative research and education in the design field. - www.sistemadesignitalia.it.
- 6 "Technologies designed with user needs and local conditions as starting points would be quite different from those developed from above" (D. Raghunandan 2002).
- 7 "Ask the right question to those concerned so that they become freshly involved and seek a solution themselves." (Eames 1958).
- 8 Zurlo Francesco, Simonelli Giuliano "La ricerca Me design. Valorizzare le risorse dell'area del mediterraneo: quale ruolo per il design?", in Designing Designers 2004, POLLdesign, Milano, March 2004.
- 9 As said by an Argentinean writer and stated by Gui Bonsiepe in an interview, "The centre knows nothing about the periphery, and the periphery does not know anything about itself." A participative approach can, in these specific cases, be absolutely necessary to find solutions to a territories fault of innovation.
- 10 "The present imperative is: export or die." Gui Bonsiepe, "Peripheral Vision," Escola Superior de Desenho Industrial (ESDI) Brazil, 2004.
- 11 For those who live in a certain context its identity is transparent. Usually those who live a certain identity cannot see it. The identity must be defined by an observer, usually external, through linguistic distinctions (Bonsiepe 1995). Taken from: Zurlo Francesco, "Design Capabilities per le istituzioni socialmente capaci," in "Medesign, forme del Mediterraneo," Alinsa Editrice, Firenze, 2004, pp. 81-82.
- 12 "Design problems will only be resolved in the local context and not by outsiders coming in for a stop-over visit. This typifies one of the great disadvantages of short-term consultancy jobs, with people flying-in from the central countries with very little knowledge about the local context and believing that issues can be resolved by remote control" (Bonsiepe).
- 13 The Product System is the integration of product, distribution, services and communication.
- 14 For a more detailed description see: Simonelli Giuliano, Bertola Paola, Sangiorgi Daniela, Milano distretto del design, un sistema di luoghi, attori e relazioni al servizio dell'innovazione, Il Sole 24Ore, Milano, 2002 or A.A.V.V., Sistema Design Milano, Abitare Segesta, Milano, 1999.

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