

# Global Community Interactions: The Future Role Of Design In International Territorial Competition/Cooperation

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## Abstract

This paper aims to specify the domain of **Design Driven<sup>1</sup> Transfer activities** and identify future opportunities for international design driven activities which go beyond today's "individual internationalization actions" developed by single design institutions around the world and seek for new forms of international cooperation.

Universities and design centers worldwide have developed original solutions in the field of design research and design education which aim to internationalize their national systems and adapt to today's general tendency towards globalization. Briefly, the actions developed up to today can be divided into: actions for the internationalization of the curricula and actions for the internationalization of research models.

As other universities, the strategic design research community of the Politecnico di Milano has also been very active in international research and education projects. In particular, the main focus of the developed **research activities** has been to enable local communities to be capable of competing in global markets through strategic design tools. The communities involved in the research projects have been mainly small and Medium enterprises, artisans and local designers who long to reach new markets and therefore to compete nationally and internationally by strengthening their production with innovative design tools.

Starting from recent experiences, the intent of this paper is to stimulate a common reflection in order to propose possible future alternatives in the field of **global design<sup>2</sup>**. Case studies of projects developed with communities around the world will guide the reflection through doubts and critical points aroused in the past years.

**Keywords:** International design processes, Design driven innovation, Territorial specificities, Global design networks.

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<sup>1</sup> For further definitions of design driven innovation read: L. Collina, G. Simonelli, *Generating Tools: Fighting Barriers To Innovation* and E. Manzini, *Design As A Tool For Environmental And Social Sustainability*, in Design Issues In Europe Today, The Bureau of European Design Associations - BEDA White Book, ed. By Stuart Macdonald, The Publishers, NL, 2004; F. Zurlo, R. Cagliano, G. Simonelli, R. Verganti., *Innovare con il design*, Il Sole 24 Ore, Milano, Italy, 2002; R. Verganti, "Radical design-driven innovation: the secret of Italian design", *Design Management Journal*, 2003; G. De Michelis, Knowledge creation and design driven innovation in the augmented districts, Paper presented in the National Conference of the SDI Agency, Milano, 9-10 July, 1998; Jaana Hytönen, Juha Järvinen, Anssi Tuulenmäki, *From Design Services To Strategic Consulting: Improving Core Competence Of Finnish Design Consultancies*, Designium - the New Centre of Innovation in Design, FI, 2004.

<sup>2</sup> "Workshop on Global Engineering Education", *Journal of Design Research*, vol. 4, issue 4, 2004

## Transferring Design Driven Innovation

What are “design driven innovation transfer” projects? Who are the main actors of these projects and what are their aims?

Design driven innovation transfer projects are a “kit of actions” mainly offered by design institutions (universities and design centers) who have achieved a privileged knowledge in the field of design innovation and in particular have defined effective tools and methods for transferring this knowledge to communities of designers or of productive entities (enterprises or artisans). Over more Design Driven Innovation Transfer projects (which we will call DDIT projects for simplicity) are generally lead in territories in which a *gap* has been detected either in the field of design driven innovation knowledge or in methods of transferring design knowledge from research centers to local productive entities or in both areas.

Even though there is a lack of literature in the field of the design discipline which defines these projects as part of the range of actions that can be lead by design entities (single designers, firms or design institutions), the activity in this field has been ongoing ever since the birth of the discipline itself<sup>3</sup>.

Why is this an important issue for the future of the design discipline?

In the field of what is defined by the European Community as Transnational Technology Transfer<sup>4</sup> projects (TTT projects) there are new forms of actions which do not strictly concern the transfer of machinery or production processes, but which aim to enable local productive communities to reach new markets through the start-up of innovative new product development processes. These actions aim to transfer know-how to communities of enterprises or single enterprises which give them the capacity and the tools to research strategic partners in other territories, develop new products and achieve a higher competitive value on the global market. Today, in the age of globalisation, these actions may have a more important role in creating new product development processes which no longer act on a local scale but involve the entire production chain distributed over a large range of territories all over the world.

Within this new framework of global disseminated actors one can agree that there is a common need for a reconfiguration of DDIT projects and the definition of new transfer methodologies which are able to combine different productive territories in the development of innovative solutions.

The aim of this paper is to point out some areas of research which arise from a critical observation of recent successful DDIT projects.

### Historical starting points

Before beginning the critical analysis of recent DDIT projects, it is useful to have an overview of some suggestions given from past experiences in this field.

It is important to underline that the following suggestions are particularly referred to how a single designer or design research center should act in planning Design knowledge transfer projects in

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<sup>3</sup> for further information on the pioneers of design innovation transfer projects read: Bonsiepe Gui, *Paesi in via di sviluppo: la coscienza del design e la condizione periferica* in Storia del Disegno industriale 1919-1990, il dominio del design, Electra, Milano, 1991, pp. 252-269; Bonsiepe Gui, *Teoria e pratica del disegno industriale*, Feltrinelli, Milano, 1975, p.70; Papanek Victor, *Design for the real world*, Thames and Hodson, London, 1972; S. Balaram, *The idea of Design. A design issues reader*, edited by Victor Margolin and Richard Buchanan, The MIT Press, London, 19995, p.200; *Industrial Design: Basic Guidelines for a policy of UNIDO; Ahmedabad Declaration, 1979*. Other material developed in this field can also be found in work done by single design firms such as: Chapman and Yamasaki, Joe Careiro, the Campana brothers (in South America), ecc. and by single designers such as: T. Maldonado (in South America), W. Morris (in India), C. Eames (in India), M. Bellini, E. Sottsass, F. Otto, J.L. Larsen, B. Rudofsky, M McFadden, C. Moore (in India); and others.

<sup>4</sup> For further information on what is defined as TTT projects read: Identification of new methods of promoting and encouraging Trans-national Technology Transfer, SSA, FP6-2005-innov-7, INNOVATION-2005-1.2.3.3, [http://fp6.cordis.lu/fp6/call\\_details.cfm?CALL\\_ID=200](http://fp6.cordis.lu/fp6/call_details.cfm?CALL_ID=200)

“developing countries” or in “peripheral countries<sup>5</sup>” and not in general in all territories with a *gap* (as defined in the above paragraph) as could be the case for example of European artisans.

According to the experience of Gui Bonsiepe<sup>6</sup> in particular in South America, Design knowledge transfer projects should keep into consideration that:

- 1\_ the socialization of strategic production tools (*technologies*) must be sustained by the elaboration of innovative projects characterized by a high value of use;
- 2\_ the import of external design ideas (*design from other cultures*) should be reduced to minimum [...];
- 3\_ the influence of foreign consumption models [...] have formed and deformed the (*local*) consumers conscience. New products should be introduced slowly and accompanied by information in order to let the (*local*) consumer to form an authentic conscience of their (*local*) needs.
- 4\_ it is important to socialize the design process in order to let workers (*local community*) participate directly as producers of (*their*) material environment [...].  
(*italic words are the authors writing*)

According to the Ahmenabad Declaration (1979) in India, Design knowledge transfer projects should aim:

- 1\_ to understand the values of a society and to define a good quality of life inside its parameters;
- 2\_ to look for local solutions for local needs using local materials and competences and applying advanced technologies;
- 3\_ to build new values, to satisfy primary needs and to preserve the plurality of cultural identities.

The typology of technologies that should be used and transferred to communities within these projects has also been an important topic of discussion lead by the pioneers of Design knowledge transfer: V. Papanek's belief in the use of “autochthonous technologies”<sup>7</sup>; G. Bonsiepe's theory on “intermediate technologies vs. appropriate technologies”<sup>8</sup>; K. Schumacher's attempt to apply “intermediate technologies” and develop “vernacular solutions”<sup>9</sup>. However the aim of this paper is not to investigate this specific matter.

These two examples do not aim to give an exhaustive and omni comprehensive picture of the past actions in the field of design knowledge transfer projects, but merely aim to underline the importance that Design knowledge transfer projects have had in the past and to stimulate an international discussion on the meaning of these projects in today's new economic and geo-political paradigms.

### **The aim of design driven innovation transfer projects**

The general aim of DDIT projects is to identify and plan research themes in collaboration with associations, institutions and entities in order to promote design as a competitive factor of the national economic system and to spread out design driven innovation culture even in national and international manufacturing contexts focusing on the existing relationship between design and local manufacturing systems<sup>10</sup>.

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<sup>5</sup> Bonsiepe Gui, *Paesi in via di sviluppo: la coscienza del design e la condizione periferica* in Storia del Disegno industriale 1919-1990

<sup>6</sup> text translated from the author taken from Bonsiepe Gui, *Paesi in via di sviluppo: la coscienza del design e la condizione periferica* in Storia del Disegno industriale 1919-1990, il dominio del design, Electra, Milano, 1991, pp. 252-269

<sup>7</sup> Papanek Victor, *Design for the real world*, Thames and Hodson, London, 1972

<sup>8</sup> Bonsiepe Gui, *Paesi in via di sviluppo: la coscienza del design e la condizione periferica* in Storia del Disegno industriale 1919-1990, il dominio del design, Electra, Milano, 1991, pp. 252-269

<sup>9</sup> Idem

<sup>10</sup> In particular, the work done by the Strategic Design Research group of the Politecnico di Milano has concentrated on industrial districts.

Briefly, the general activities developed up to today through DDIT projects can be summarized as follows:

- \_the promotion and planning of didactic and education activities in the design field;
- \_the promotion of international events and confrontation/debate occasions on multidisciplinary fields linked to the design field;
- \_the development of education and research projects with institutions and associations, and together, the promotion of design as a competitive factor for local economic systems;
- \_the exchange of competences of university research units, through partnership or consultancy, for the development of specific projects of design innovation transfer for single companies or systems of companies, local manufacturing systems and industrial districts;

## **The Italian Experience: Case Studies**

Italian design is known all over the world as the main competitive factor of Italian industries, their driving force, giving birth to the so called “Made in Italy” phenomenon. In reality, the success of Italian products is also due to a synergetic collaboration between the territorial productive know how – a high density of small and medium enterprises throughout the country – and the project development know how – a high density of various actors who actively participate in the development of innovation.

Researchers of the of the Politecnico di Milano have tried to understand the birth and development of the “Made in Italy” phenomenon by mapping the Italian Design System and analysing/codifying the implicit Italian know-how in design, identifying its actors, processes and channels. This ongoing research has given birth to a clearer view of how the Italian design system works and has been the starting point for the development of tools for mapping and codifying other territorial systems (nationally and internationally) and creating “customized” strategic actions for developing innovation processes in specific territorial contexts.

This theoretical and empirical research has given birth to a methodology which is based on a bottom up and participative approach, identifying and planning research-actions in collaboration with local associations, institutions and entities in order to promote design as a competitive factor of the national economic system.

### **Typologies of DDIT projects**

The aim of the DDIT projects developed has been to expand awareness in design, nationally and internationally, to local territories and regions where it is still not considered a strategic competitive factor and to overcome the barriers between design and SMEs through “custom made” actions.

Hence, the aim of the DDIT projects has been to stimulate all the actors of the territory (enterprises, universities, young designers, students) to work together in the development of new products and in creating innovation processes starting from the development of what can be called “inseminating projects”. The “inseminating projects” can assume different forms according to the specific objectives the local Partner Institution is interested to achieve.

The following list of the possible “project scenarios” is a general description which needs to be put inside specific territorial contexts in order to assume defined plans of action. For this reason, all scenarios begin with a common auditing action which allows researchers to understand the local realities and to adapt the project offer in collaboration with the local Partner Institutions. Over more all scenarios are a combination of several activities which can also be delivered separately in different circumstances and involving a large variety of local actors.

### *Scenario 1: Mapping Of Territorial Design Systems*

Specific tools have been created for mapping and codifying other territorial systems (nationally and internationally) and creating “tailor made” strategic actions for developing innovation processes in specific territorial contexts. This scenario is based on the consolidation of strong collaborations with new contexts which are interested in understanding their local, regional or national design systems.

In order to achieve effective results, this specific typology of DDIT projects entails a previously well-conceived bond between international research institutions. The final goal of these projects is not merely to give a static and sterile photograph of a territory, but to create bonds between distant productive territories through the development of innovative processes. Therefore, the two territories working in the project (the one transferring the know-how – *transferer* - and the one absorbing the know-how - *transferee*) are both actively involved in searching opportunities for new product developments and innovation.

The common structure of this typology of DDIT projects is the following:

1\_Auditing – visits to enterprises and institutions.

2\_Application Of The Mapping Methodology: definition of the modality for collecting data and mapping the territory.

3\_Train The Trainer Workshop: transfer of mapping techniques to young researchers of the local partner institutions.

4\_Mapping The Territory: collection of information and data through surveys and interviews in the defined territory.

5\_Data Analysis: systematisation of collected data in a form which allows mutual confrontation between territories.

6\_Dissemination Of Results: from seminars and conferences to the publication of books or manuals.

### *Scenario 2: Cross-Fertilization And Internationalisation*

Professional support actions in the implementation of projects which work on stimulating cross-fertilization processes between international productive systems and design resources in new product development processes.

The role of the “transferer” in these projects is that of being a mediator between international enterprises and design resources and therefore a facilitator of the production of product systems (product, communication, distribution) adapt to access specific local and global markets. Through specific design seminars and workshops, single enterprises can get in contact with professional designers, other enterprises or retailing channels all over the world and work in different areas from brand value definitions to new product development.

The main goal of Cross-fertilization projects is to build a bridge to other markets and to give single enterprises, industrial districts and productive territories the liberty to access, 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 products (for some regions of the world) or “to delocalize” production (for other regions) appear to be vital actions and therefore to be able to decide with whom to communicate and how seems to become a means for survival.

These projects have a common structure, however the contents and outputs of the individual projects can be very different according to the requests.

In order to achieve effective results, this specific typology of DDIT projects entails the involvement of actors who have a very good knowledge of their local “Territorial Capital”<sup>11</sup> and therefore of the productive specificities and territorial design systems (local design actors).

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<sup>11</sup> F. Zurlo e S. Maffei, “Designing in a situated domain. Design competence as the result of context-specific sociotechnical relationships. The Sistema Design Italia case”, paper presented at the conference “Doctoral Education in Design”, Design Research Society and Norwegian School of Management, La Clusaz, France, 8-12 July 2000; F.Zurlo, G.Simonelli,

The common structure of this typology of DDIT projects is the following:

1\_Auditing – visits to enterprises and institutions.

2\_Definition Of Pilot Projects: collection of information from single SMEs who are willing to participate in pilot projects and built specific solutions.

3\_Development Pilot Projects: pilot projects are developed through a combination of project activities.

4\_Dissemination Of Results: from seminars and conferences to the publication of books or manuals.

### *Scenario 3: On-Field Design Courses And Seminars*

This scenario is a more traditional version of DDIT projects and consist in the development of a wide variety of design courses and education projects which can be held abroad in specific educational institutions or in productive territories.

These projects are mainly focused in two specific contexts:

\_in universities, educational institutions and design associations: for professional designers or students.

\_in local territories and regions (where design is still not considered a strategic competitive factor) to overcome the barriers between design and SMEs through actions for: entrepreneurs, product managers, technicians and enterprise stylists.

However, in recent years the main aim of these more traditional DDIT projects is to converge the above contexts throughout the knowledge transfer activities. This global tendency aims to defeat the historical barriers between academia and practice and to enable young designers and entrepreneurs to get to know each other inside a friendly environment.

The common structure of this typology of DDIT projects is the following:

1\_Auditing – visits to enterprises and institutions.

2\_Definition And Exploitation Of The Education Package: the main objective of the education activity is to give design tools to participants to develop new products and design driven innovation processes inside their local contexts. The course contents guide the participants through a design process going from research of future trends up to the definition of product systems (product, communication, distribution). The participants can be local designers, entrepreneurs or a mix of the two.

3\_Dissemination Of Results: from seminars and conferences to the publication of books or manuals.

**Figure 1: Brazil 2004\_Scenario 3: On-Field Design Courses And Seminars**

**Figure 2: Chile 2005\_Scenario 2: Cross-Fertilization And Internationalisation**

**Figure 3: Australia 2005\_Scenario 1: Mapping of Territorial Design Systems**

## Insights For Future Design Driven Innovation Transfer Projects: Networks And Local Cultural Mediators

As mentioned in the beginning of the paper, many design research institutions around the world have developed their own unique methodologies in the field of Design Driven Innovation Knowledge Transfer. As the Italian case studies, there are many other examples of successful DDIT projects that could be equally described and categorized in different ways and through different filters and reading lenses.

Can such a richness of different methodologies and approaches be exploited to generate new international collaborations? How can the combination of entities who have high experience in Technology Transfer give birth to the definition of future possibilities in the field of Design Driven Innovation Transfer?

The aim of this paper is to stimulate this reflection and give birth to an international debate in the field of DDIT projects. In order to do so, the following steps have been defined as a possible guideline for stimulating future confrontations in this field:

**STEP 1:** To identify and *map methodologies* developed in the field of Design Driven Innovation Transfer through the definition of best practices and clusterization of possible actions.

- a *collection of best practices* projects developed by the partner institutions and by other entities of their respective regions in collaboration with communities of SMEs, single SMEs, artisans, and communities of designers which have given birth to bottom-up innovative processes through Design Driven innovation processes;
- an identification of common *methodological approaches* which result from the reading and analysis of the collected best practices;
- a definition of a *map of methodologies* from which to position future scenarios and possibilities in this field.

**STEP 2:** To identify *Technological and Productive Specificities* of the regional territories which are considered to have an innovation potential for future strategic global product development processes.

- a common definition of *technological and production TRENDS*, technologies and specific territorial productive know-how that can be considered as potentially innovative in the future (for example traditional know-how which is actually dying because of the high competition of low cost production markets; artisan knowledge which can achieve innovative potential from design processes; etc.);
- an identification of regional *technological and productive specificities*, territorial productive areas which according to the previous definition of production TRENDS can be considered to have high innovative potential for the future;
- a definition of a *map of technological and productive specificities* which combines the findings of each region.

**STEP 3:** To define *Possible Future Productive Combinations* through the development of new products which are born from the combination of different regional Technological and Productive Specificities. This activity is an applied research activity in which Design Driven Tools are applied in order to combine identified regional specificities through New Product Development Processes (NPDP).

- a common definition of *Design Driven Innovation Tools*, know-how which will be re-interpreted from the already existent studies on best practices of single enterprises or single product development processes;
- a *Project Work*, which will define possible scenarios for the implementation of future possible first Pilot Projects.

**STEP 4:** To generate an articulated and, in perspective, self-sustaining organisation which will be formed by a System of International Networks.

- a **Network of Design Innovation Representatives:** actors who become reference points for any productive entity which is interested in finding strategic partners for the development of innovative solutions and for gaining a competitive value. There are many centres and service providers who already work as regional representatives for innovation and internationalisation, but these entities do not have the connection with Design Communities and lack of a Design Driven Vision. The Design Driven Vision is the one which allows different actors to combine their capabilities in an innovative way and to find new solutions through the combination of existing technologies.
- a **Network of Design Innovation Stakeholders:** actors that have been identified from the Network of Design Innovation Representatives as owners of **Technological and Productive Specificities** and therefore are considered to have an innovation potential for future strategic global product development processes.
- a **Network of Territorial Design Communities:** owners of Design capacities and which are responsible for developing innovative products which combine Technological and Productive Specificities of different regions.

## Conclusion

Why are DDIT projects considered strategic tools for the future?

In the history of European Design, the designer has always been a mediator between enterprises and technology/material providers. Through the development of innovative product solutions, the designer has combined single enterprises with different productive capabilities and of different manufacture sectors. This was possible when the production was concentrated in a circumscribed territory (region or nation) and where designers could have the knowledge of what was “technically possible”. However, in today’s dissemination of production on a global scale, this kind of role of the designer is becoming more difficult and therefore needs a support, a service provider, that can facilitate the knowledge of what is “technically possible” also at a global scale.

The aim of future DDIT projects is to provide a service both to communities of designers and industries in order to continue competing and collaborating in the complexity of today’s economic paradigm.

Eventually, DDIT projects could allow:

\_the design communities to achieve more clients at an international scale and also to get to know the productive potentialities of territories around the world;

\_the productive communities to go beyond the usual “internationalisation barriers” which mostly characterize SME and artesian communities and to meet strategic partners.



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