

INNOVATION THROUGH SERVICE DESIGN. FROM RESEARCH AND THEORY TO A NETWORK OF PRACTICE. A USERS' DRIVEN PERSPECTIVE

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1. Can we create innovation through services development?

The statistics about economy and international trade in goods and services in advanced industrialised countries tells us something important about contemporary economic and social innovation.

A great amount of the revenues of GNP of these countries comes from the production, distribution and trade of services: this part of economy had been constantly increasing in the last decades. While manufacturing is slipping to less than 20% of GDP, by 2002 the share of the service sector amounts to about 70% of total value added in most OECD countries (Wölfl, 2005). The increasing relevance of the service sector is not exclusively bound to the growing of the service firms revenues, as it seems to be a general increase of the *service dimension* in the overall economy: "...both the white-collar share of industrial workforces, and the service share of industrial firms' output are generally growing, together with the growth of specialised service firms..." (Howells and Miles, 2001).

Becoming services the major driving force within contemporary economy, a wide debate is taking place on strategic issues like service productivity, innovation and international trade.

Even if the interdependence between manufacturing and services is growing and sometimes their relative borders are blurring (Pilat and Wölfl, 2005), the specific nature of services asks for distinct support and intervention models and policies.

The discussed distinctive characteristics of services _ *intangibility*, *heterogeneity*, *interactivity* (simultaneous production and consumption) and *perishability* (Zeithaml and Bitner, 2000) _ and of service firms _ generally small sized, typically focused on domestic or regional markets, knowledge intensive, etc. _ have important consequences on the evaluation and support of their productivity and innovation capacity and tradability potentials.

This paper wants to deepen the peculiarity of the service economy and of its innovation modes in order to investigate and propose a strategic role for design research and education. The basic question is if we can *create innovation through services development* and how *Service Design* can contribute to the definition of a renewed and integrated innovation model and approach.

To validate this statement in particular the authors refers to an emerging discipline, *Service Design*, that was born in the early 90's (Manzini, 1993; Erlhoff *et. al.*, 1997) starting from the awareness of the lack of an organic and autonomous design culture in contrast with the dominant economic vision of service sector and the consequent demand for more conscious design shapes.

This intuition opened a new experimental and research area that have been framed by PhD researches (Pacenti, 1998; Sangiorgi, 2004) and further developed within research and educational projects, developing dedicated design tools and methodologies.

The authors describes the evolution of the *Service Design* research and theory till the recent start up of an international Service Design Network and illustrate the potentials of a complete multidisciplinary and integrated Service Design approach for the innovation and competitiveness of service industries and institutions.

2. Service market growth: updating the situation

We are often informed by media that our national country GDP is still growing or falling. Rarely, at the same time, the same sources told us what percentage of this economical growth amount could be attributed to the growth of the service sector.

In fact if we take a look at the OECD data (OECD, 2005) we could note that the service sector has become the most important sector in all OECD economies.

The service sector now accounts for over 70% of total employment and value added in most OECD countries, with a particular increase especially in certain market services, such as telecommunications, transport, wholesale and retail trade, finance, insurance and business services, with community, social and personal services increasing in some countries as well.

The growing role of services depends on several factors, among which the higher consumer and business demand, the increase of outsourcing, the greater use of ICT and the growth of the competitive pressure and globalisation caused by the recent regulatory reforms of service markets and reduction of trade international barriers.

The growth of certain services, like social, community and personal services, can be related to the increase of the *final demand*; these kind of services are in fact generally income elastic and closely link to the size of the welfare states, while recent demographic changes (aging population) are affecting the demand patterns.

Particularly relevant has been also the growing of the *outsourcing* phenomena; manufacturing firms more and more feel the necessity to concentrate on their core competencies, while buying external specialised services that guarantee lower costs and higher efficiency, competence and specialisation.

A great impulse to outsourcing and in general to the service industry growth had come from *technological advances* (especially the ICT technologies). ICT are considered as one of the main innovation and productivity drivers in the service economy, narrowing the differences between services and other manufacturing activities; technology is changing the way some services are produced and consumed, becoming more similar to *commodities*, mass-produced like copies of movies or mass-consumed like on-line services.

Service providers are therefore starting to benefit from *economy of scale* opening up toward international trade, thus bringing to the emergence of first examples of global-scale service companies; Global international trade treaties like GATS (General Agreement on Trade in Services) highlight that service activities will soon become the most interesting part of the world trade, even if the specificity of service companies together with many regulatory and market barriers are still limiting this evolution.

Being services quantitatively the most important sector in OECD countries policy makers show a growing interest in understanding service productivity and innovation mechanisms in order to propose sounder reforms and structural support.

3. Innovation in services

Current industrial and innovation policies are mostly inadequate to the service sector needs, being still built around the manufacturing model.

The main features of services have been interpreted by the innovation literature looking for specificity within the innovation process (Green, Howells and Miles, 2001):

- *intangibility*: being performances, service products are often intangible therefore difficult to store (*perishability*) or transport, to be shown and experimented in advance by clients and also hard to evaluate for funding and protect via Intellectual Property Rights tools;
- *interactivity*: consumption and production generally coincide in the service supply and generally ask for an active participation of user, who is often interpreted as co-producer of the final performance. This interactivity causes an high *heterogeneity* of service outputs, being service often customised to user needs, and a difficulty to evaluate and trade services across countries.

Notwithstanding these characteristics, the European Community Innovation Surveys (CIS)¹ carried out in these last years have confirmed that *service companies are actually innovative*, even if there are relevant variations among the service sector and differences from the way manufacturing firms innovate.

The concept of innovation is interpreted as “doing something new”, like introducing a new process or a new service, or adopting a new organisational model.

However the *measurement of service innovation* is not immediate as it is within manufacturing firms and new models and methods should be developed. As already mentioned services generally don't have an R&D or Design department and often develop innovative solutions and formula within the *service development process and management*; instead of R&D activities, services often innovate through the acquisition of external knowledge or technology, like software, and the training of service staff and there are specific kinds of “intangible” innovations that are difficult to measure and protect, like the organizational and procedural ones.

Moreover a little attention has been given to a diffuse kind of innovation in service firms concerning the transformation of the supplier-user interface: **the “service relationship” or “delivery” innovation**. Looking at the impact of new formula like self-service or e-commerce and on-line services it is evident how much this kind of innovation is relevant for service development and competitiveness and how it should be interpreted in a separated way from the conventional product/process innovation dichotomy.

¹ The Community Innovation Survey (CIS) is the main statistical instrument of the European Union that monitors Europe's progress in the area of innovation. It creates a better understanding of the innovation process and analyzes the effects of innovation on the economy (on competitiveness, employment, economic growth, trade patterns, etc.). The first CIS has been carried out in 1992 and it is conducted every 4 years (<http://www.cordis.lu>).

This kind of innovation (see fig.1), which is peculiar to the service nature (intangibility and interactivity), is not yet integrated in the interpretative innovation frameworks and not investigated enough in order to propose *ad hoc* service innovation approaches and tools.

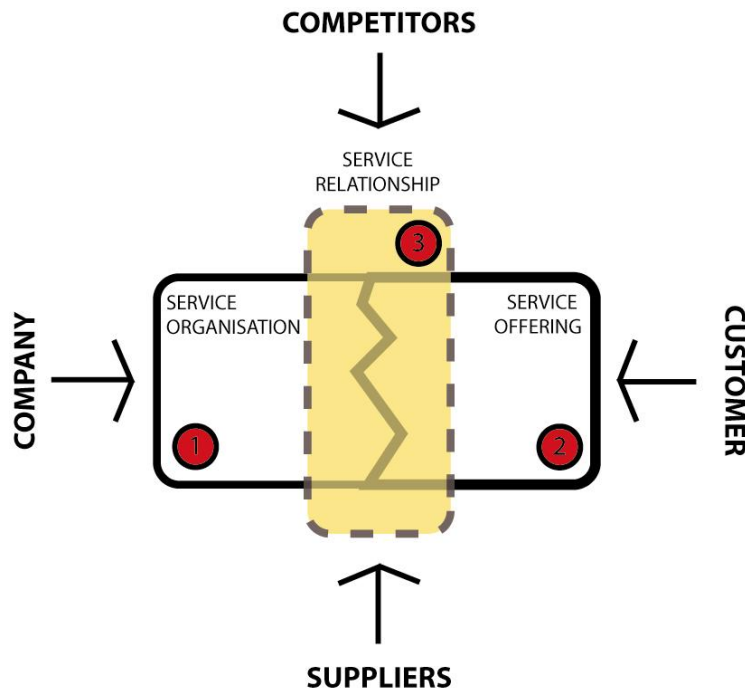


FIGURE 1. Levels and sources for service innovation

Another aspect that underlines the necessity of a greater attention to a *user perspective approach to innovation* is the kind of sources service companies mainly use for innovation. Again the main sources of information for innovation reflect the specificity of services: being highly dependent on the *human capital*, professional knowledge and the knowledge gained from practice have a primary role in fostering innovation, as much as the **relationship with users**, being customers considered as a fundamental stimulus for innovation processes, followed by competitors' and suppliers' input.

The need for an updated of the innovation model for services goes in parallel with the need to identify and reduce *existing barriers* that still prevent services to grow and that are again strictly connected to the key characteristics of services.

Even if the service sector is highly heterogeneous, main classes of barriers to service innovation and development (Green, Howells and Miles, 2001; Miles, 2001) have been identified:

- *Lack of support for trade and internationalisation*: it is agreed that the opening of international markets stimulate competitiveness and innovation. The General Agreement on Trade in Services (GATS) has provided a framework that governments can use to foster and liberalise trade in services (WTO, 1999).
- *Difficulty in valuing and Financing Intangible Service Assets*: most services invest little in traditional R&D, while they generally spend on technology acquisition, training and

intangible assets, like design, marketing or organisational change. These kind of investments are generally poorly reflected in business account and therefore limit the capacity of service companies to access to private finance or government support.

- *Adequacy of Intellectual property protections*: services are generally perceived as difficult to be protected, in particular for non-technology-intensive services and for their intangible assets.
- *Government support to Innovation*: the Government Innovation policies are still mainly oriented toward manufacturing industry; they are generally unable to recognise and support key innovation activities for services like training, market research or organisational changes.
- *Distance from innovation systems* (institutions, associations or research centres): one of the suggested direction (Green, Howells and Miles, 2001; Miles, 2001) in order to reduce the barriers and shortening the distance of many services from the innovation system consists in the development or sponsorship of *service innovation centres* as well as of *innovation networks* focused on services. Their roles should be to develop basic and strategic researches mainly oriented toward capturing and augmenting knowledge about customers and service workers in order to propose and test new service interfaces, applications and concepts.

4. A new field of design research an practice

So what could be the role of design research and practice in facing the issue of innovating and competing in the growing and challenging service market?

From the beginning Service Design, being rooted in the design culture, has been focused on the *interactivity dimension of services* proposing as main area of intervention the design of service experience, interface² and identity (the visible part of the service through which the user can interact and orient his/her behaviour and choices).

This *customer oriented perspective* has facilitated a specific kind of design-driven innovation, which is oriented toward generating new service ideas or products and new or improved modes of experiencing the service offering itself, through the use of technology potentials or the interpretation and proposal of new models of behaviour (see fig. 2).

² The focus on the interactive dimension of services starts also from the hypothesis of a potential similarity of service design concepts and approaches with the ones of *interaction design* (Pacenti, 1998). This partially explains the emergence of service design within interaction design curricula.

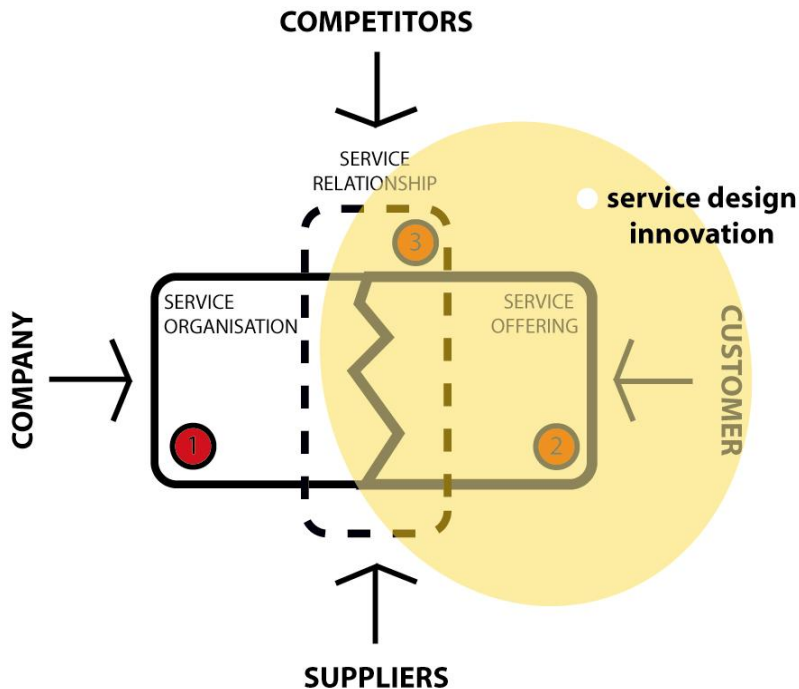


FIGURE 2. Main ambit of design-driven innovation

Considering the overall service innovation practice, the service design approach is partial and, in order to be effective, need to be connected and integrated within the existing economical and organisational approach.

Till now Service Design research and education have mainly dedicated its attention and energy toward defining a legitimate area of intervention and specific design tools and methods³. The growing interest and practice in service design within design schools and studios, even if with different approaches and starting points (system design, sustainability design, strategic design, interaction design, etc.), now asks for a further evolution of the discipline toward a concrete integration within service development practice and related disciplines and methods.

The exigency of *personalization* mixed with the necessity of an *industrialization* of the service delivery process evidences the necessity to diffuse and further develop the service design methodology and culture together with the marketing and management ones.

In order to build a renewed innovation approach in service field the market dimension (pricing and offering strategies) and the organisational and production constraints (organisational models and processes) should be integrated with the real innovation field that can be object of design: the

³ Service Design methods are both an evolution of existing marketing, management and design tools and the result of a dedicated design approach. The main and distinctive focus of service design tools concerns the design, description and visualization of the user experience, including the potentials of different interaction modes, paths and choices (Flow Diagrams, Storyboarding, Use Cases, Customer Journey, Video Sketching, Video Prototyping, Dramaturgy, etc). Other tools try to support the representation of the complexity of service organization like Blueprint, Service ecology, Service system map, Social network mapping, etc.

relational dimension in which the user perspective is included i.e. the social and cultural aspects that characterize and influence the service experience.

The challenge consists in how to manage in an integrated way the basic properties of services like *interactivity* and *intangibility* with some special features that are difficult to protect like the *organizational and logistic ones*.

The design-driven perspective starts from the consideration that what can actually be protected in a service is the *service concept*, meaning the general description of the offering and the elements which communicate the service itself (*service brand, identity and mood*); these elements are translated in the particular aesthetic of the interaction stream (*service encounters*) and in the peculiar characteristics of the *service evidences*, like tools, environments, etc. or in the proprietary script of the interaction/dialogue with the service operators.

In a *flat* service market these are the elements that can distinguish the service firms from the competitors and should attract investment.

The service design practice, supported by the growing of an *ad hoc* educational practice, could contribute in the modification of the commodified existing service offer and in the development of innovative service offerings.

This considerations lead us to imagine the necessity of a new form of *convergence* between economics and design; a new interpretative framework is required to depict and explore *a new theory of service innovation* that merges the contemporary innovation theory (more focused on the process/product dichotomy) with the contributions and models of the user-design driven approach.

This asks for a double path:

- *the service design disciplines approaching the service development field*, while augmenting the design capacities to dialogue with the economic and organisational culture and practice and integrating the service design tools and method within the wider innovation framework and needs;
- Add to the service innovation theory, models and analytical frameworks, *concrete and practical tools and guidelines for innovation*, integrating the user-design driven approach and methods.

5. Toward an integrated approach: the Service Design Network

This paper has underlined the relevance of services within contemporary economy together with the need for a renewed framework and approach to service innovation, that could identify, measure and interpret the different levels and ambits of innovation in the service sector.

The authors have suggested the potentials of bringing the *user-design driven approach* within this framework, representing the key “service relationship” perspective of service innovation, and the parallel need to bring service design discipline closer to the organisational and economic culture and practice.

Moreover the building of a renewed service innovation framework should be the basis for the development of an adequate policy able to reduce the existing barriers to service innovation and development and the distances of service firms from the innovation system.

The Service Design Network (SDN), activated in 2004, is an international group of universities, research centres and design studios working in the Service Design domain with the purpose to develop and strengthen the knowledge and expertise in the science and practice of innovation and improvement of services.

The SDN initiative is willing to contribute to the service economy evolution, bring research into practice and shorten the distance of companies with the innovation system, working as a sort of *innovation network* (Green, Howells and Miles, 2001; Miles, 2001).

Being aware that building a Service Design culture requires cooperation among disciplines and draws upon theories and practices to define a unique body of knowledge capable of addressing all the hard to soft aspects of the service, the SDN proposes different levels of integration:

- an integration among the different actors (Universities, research centres, design studios) working on the Service Design theme;
- an integration of the different competences and tools necessary for a complete Service Design project and for an effective design education and professional practice;
- an integration of the different levels of approaches to Service Design (organisation, offering and interaction levels).

The intent to integrate actors, competences and approaches concerns not only the design community, but also the technology and business community as well. The augmentation of dialogue and collaboration with other disciplines is the basis to build an integrated approach to innovation and competitiveness, bringing the user-design driven approach within a renewed service innovation framework.

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