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PREFÁCIO

Celso Carnos Scaletsky, Maíra Meira Nicolleti e Fernando Guimarães Horlle

O 4º Design Culture Symposium aconteceu entre os dias 16 e 17 de novembro de 2021. Novamente, o evento foi todo realizado de forma presencial remota. Foram selecionados nove artigos envolvendo ao menos cinco Universidades: Politécnico de Milão (It), Universidade de Camerino (It), Universidade Federal do Paraná (Br), Universidade Federal do Rio Grande do Sul (Br) e Universidade do Vale do Rio dos Sinos (Br). Três palestras foram realizadas. A primeira palestra foi proferida por Flaviano Celaschi, Reitor do Departamento de Arquitetura e coordenador da unidade de Design na Università di Bologna (Itália) e Diretor científico do Mestrado Executivo em Inovação em Design de Negócios na Bologna Business School (Itália). Sua pesquisa trata de Design Driven Innovation, Open Innovation e Design Processes. A segunda palestra foi realizada pelo professor Fernando Secomandi, brasileiro radicado na Holanda. Fernando Secomandi é pesquisador e professor assistente no departamento de Design, Organizações e Sociedade na Faculty of Industrial Design Engineering, Delft University of Technology (Holanda). Sua pesquisa explora a interseção entre o Design de Serviço e a filosofia da tecnologia. Encerrando o simpósio, recebemos o professor Aguinaldo dos Santos. Aguinaldo dos Santos é pesquisador e professor associado do Departamento de Design da Universidade Federal do Paraná (UFPR), onde coordena o Núcleo de Design & Sustentabilidade desde 2002. Sua área de atuação inclui a lean production e o design para a sustentabilidade, tendo como objeto de pesquisa principal a habitação de interesse social e sistemas produto-serviço.

Os 9 artigos apresentados, observaram uma grande diversidade de como trabalhar a temática sistema produto-serviço e foram discutidos em duas mesas redondas – M1 e M2. Na Mesa 1, Marta Corubolo, do Politécnico de Milão, abordou o tema SPS sob o viés de comunidades colaborativas que habitam em espaços compartilhados (coliving), buscando de forma cooperativa soluções para bens e serviços. Aguinaldo dos Santos apresentou uma importante reflexão sobre a relação entre os conceitos de economia distribuída e sistemas produto-serviço sustentáveis. Aguinaldo demonstrou os benefícios mútuos desta relação. Márcia Regina Diehl, Carlo Franzato e Débora Barauna trouxeram o tema SPS para os contextos de organizações do ensino superior, em situações pandêmicas e transformação digital. Encerrando a M1, Alessandra Dias Guglieri apresentou o tema SPS, seus efeitos de sentido e a construção de narrativas. A Mesa 2 contou com o artigo de Natalí Abreu Garcia, Jaqueline Freitas Comparin e Carlo Franzato. Por meio de um estudo de caso, os autores construiram cenários ligados à temática da sustentabilidade, guiada pelos Objetivos de Desenvolvimento Sustentável da ONU. Márcia S. Silva, Carolina W. Chaves e Keyla C. Rodrigues estabeleceram uma relação entre a Teoria de Mudanças (TdM) com o conceito de sistema produto-serviço e igualmente seguem na direção de um design sustentável. Samara Ferreira Crispim trabalhou o SPS como um agente do desenvolvimento territorial regional e local, usando instrumentos das metodologias de design thinking. Outro artigo, de Nicole Cecchele Lago, Márcia Elisa S. Echeveste, Natália Valmorbida Morães e Maria Auxiliadora Cannarozzo Tinoco relacionou o

método de Engenharia de Requisitos com SPS sustentável. Finalmente, o artigo de Celso Scaletsky, Fernando Horlle, Liana Chiapinotto e Tássia Ruiz buscou, a partir de uma revisão da literatura, discutir o conceito de sistema que frequentemente, segundo os autores, é perdido.

As três palestras e os nove artigos demonstraram a importância do conceito de sistema produto-serviço e a amplitude de sua abordagem. O tema sustentabilidade, como era de se esperar, dificilmente estará descolado da construção de sistemas produtos-serviços. A urgência desta abordagem se mistura com a especulação de futuros mais ou menos previsíveis. Diferentes áreas, design, arquitetura e engenharia, enxergam para o mesmo conceito de formas distintas. Neste sentido, observa-se a importância de um olhar ao menos multidisciplinar, quando a transdisciplinaridade ainda estiver distante de ser alcançada. A aplicação do conceito, igualmente, circulou em diferentes contextos: organizações de ensino, territórios, produtos, habitação, entre outros. Renovamos, enquanto autores de um dos artigos e organizadores do evento neste ano, porém, a importância da construção de um sistema. Um sistema mutável, vivo, onde o todo seja maior do que as partes.

Esta publicação encerra o quarto ciclo desta experiência conduzida pelo Grupo de Pesquisa Design Estratégico e Cultura de Projeto do Programa de Pós-Graduação em Design da Unisinos. Nesses quatro anos, trabalhamos com as temáticas Research Through Design, User experience edition: wellbeing, emotion and behavior, Scenarios, Speculation, Strategies e Product Service-System. O nome do simpósio é escrito em inglês, os títulos das temáticas igualmente. Trata-se de nosso desejo de, um dia, este evento tornar-se um evento de importância internacional, além das fronteiras da Unisinos e do Brasil. Ainda temos um bom caminho pela frente. Continuaremos a trabalhar com a ideia de um evento que promova a discussão de temas específicos, a cada ano definidos pelo grupo organizador.

Desejamos a todos uma boa leitura.

Celso Carnos Scaletsky, Fernando Guimarães Horlle e Maíra Meira Nicoletti

SEÇÃO 01

to be held in English

**PRODUCT SERVICE SYSTEM DESIGN FOR
COLLABORATIVE HOUSING AND THEIR COMMUNITIES.
THE CASE OF AN ITALIAN COLIVING PROJECT**

Marta Coruboro

**NEXUS BETWEEN SUSTAINABLE
PRODUCT SERVICE SYSTEMS AND DISTRIBUTED ECONOMY**

Aguinaldo dos Santos

**PROJETAÇÃO TRANSDISCIPLINAR DE UM
SISTEMA PRODUTO-SERVIÇO
EM UMA ORGANIZAÇÃO EDUCACIONAL**

Márcia Diehl
Carlo Franzato
Debora Barauna

**SISTEMA PRODUTO-SERVIÇO COMO NARRATIVA
PELA PERSPECTIVA COMPLEXA**

Alessandra Guglieri

Product service system design for collaborative housing and their communities. The case of an italian coliving project

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ABSTRACT | This paper aims at investigating the design contribution in applying a PSS approach to the housing domain, and more specifically to the collaborative housing sector. Introducing the case study of an Italian Coliving project, the paper presents the process and a set of tools used to define the conditions for the community of residents to grow and act as a co-producer of collaborative services and a trigger of a sustainable lifestyle.

KEYWORDS | collaborative housing, coliving, strategic design, service design, community

1 COLLABORATIVE HOUSING AS A PRODUCT SERVICE SYSTEM

A product service system (PSS) can be defined as 'an innovation strategy, shifting the business focus from designing (and selling) physical products only, to designing (and selling) a system of products and services which are jointly capable of fulfilling specific client demands' (Manzini, Vezzoli, 2002). The concept of PSS, moves from the possession to the access, from the satisfaction of a need through a product to 'selling functions through a mix of products and services, while fulfilling the same consumer demands with less environmental impact' (Yoon et al, 2012).

Mont (2001, 2002) identifies 4 elements that constitute a PSS: a system of products, services, networks of actors, and supporting infrastructure. Considering such elements, PSS assumes strategic evidence in pursuing social, economic, and environmental sustainability. Increasing accessibility and availability of integrated goods and services while reducing resource consumption and promoting inclusiveness and societal wellbeing (Mont, 2003) is a goal of primary importance for any organization operating in the present and future times.

This paper connects to the current sustainability challenges and in particular to the urbanisation trend which is increasingly putting pressure to find affordable and effective solutions for the housing sector. According to the United Nations (2018), by 2050, 68% of the world's population will live in an urban environment, leading to increasing densification and housing shortage. In this framework, the mainstream housing system appears to be still anchored in a product-based paradigm, where home and dwellings are designed and offered taking into account primarily their physical and infrastructural qualities and are conceived and addressed to a single user (be it an individual or a family), thus favouring isolation and anonymity. The needs to satisfy are still those of sleeping, cooking, washing and storing and the value is strongly linked to the quality of the materials and spaces, and to the economic real estate values (often in an ownership-based speculative scheme). Such perspective highlights its limitations especially when considering on the one hand the challenges connected to the current family configurations and their evolving needs in a downsizing of traditional welfare services, on the other hand the positive density of a city as potential source of innovation. By assuming the home as a centre of relationships that expands to

neighbourhoods, it is possible to address the needs of a broader community, relying on its resources and on a greater variety of stakeholders in imagining new ways of living that are accessible, sustainable, and desirable. "It is (the home), most basically, shelter from the elements; it is security and privacy from the outside world; it is space in which to relax, learn and live; it is access to more or less comfort, but the home also places the household in a specific neighborhood context which may influence accessibility to relatives, friends, shopping, leisure, public services and employment" (European parliament, 2006).

The tradition in experimenting new forms of collective and shared living spaces finds its roots in the '60 and '70, mostly in the North Europe countries (Lietaert, 2007). The results in the evolution of the housing solutions are a series of models recognized and often encouraged by the public sector, for their potential to explore new forms of distributed welfare.

Scholars and practitioners suggest a huge variety of terms, often connected, to describe alternative forms of housing which are collective, participative, often self-organised, and share a series of facilities and spaces: cohousing, community-led housing, participative housing, social housing, self constructing groups, cooperatives, communes, integrated residences, student houses and more. This broad spectrum tells us about flexible and inclusive living models that refer to people with different needs, generating benefits that extend from its inhabitants to reach the neighbourhood and the city. We adopt the definition of Collaborative Housing to encompass all those "solutions where collaboration between the residents is an inseparable part of the housing models" (Rogel et al. 2018, Rogel and Corubolo, 2012). While acknowledging differences among these multiple experiences, such examples can be considered as promising cases of sustainable PSS primarily because they tend to enable a convergence between personal interests and social and environmental ones "steering individual expectations and behaviour towards more sustainable ways of living and producing" (Meroni, Manzini, 2017). More specifically, they act on:

- Widening the accessibility to sustainable goods and services (i.e.: ecological and eco-efficient materials and systems) and to sharing and collaborative solutions (i.e.: purchasing groups, sharing economy services, social eating, communal laundry facilities) which support the adoption of more sustainable lifestyle;
- Contrasting isolation and reducing the stress and complexity of life in modern society by recovering mutual aid and a sense of belonging, through community building;
- Increasing participation of users and empowering communities in defining and managing their housing and neighbourhood contexts, thus diffusing more participative ways of living the city.

In particular, some elements appear to be relevant for the purpose of this paper: the role of the final user and community in the development and management phases, the collaborative nature of the

relationships among residents themselves and with external actors, and the relevance of shared spaces and activities in enabling such interactions.

Despite these clear advantages, such initiatives often remain at a niche level for a series of reasons that literature often refers to 1) the complexity and duration of bottom up processes, 2) lack of initial funding schemes to tackle the real estate sector, 3) the necessity of specific and interdisciplinary competences, 4) the knowledge around alternative form of living as practicable and accessible solutions, 6) traditional top down city planning.

2 THE COLIVING MODEL

The last decade has seen the growth and diffusion of a slightly different housing model named 'Coliving', in the most famous examples of Welive or The Collective. These solutions offer individuals a private housing space and access to a range of communal facilities and services, and therefore can be considered a form of collaborative housing. However, differently from bottom-up cohousing schemes, this more recent model is operated by a service provider, usually a company, who develops the real estate project, rents the spaces and manages collective activities and responsibilities.

More specifically:

- 1 Private spaces are designed as micro-studio flat or rooms, with no or little facilities in them, in order to promote the use of shared and collective spaces;
- 2 Collective spaces¹ are considered the centre of the building and are designed to host collective activities;
- 3 All-inclusive rental schemes enable access to both spaces and services;
- 4 The length of stays ranges between very short-term versus short-medium term and the location between rural versus urban;
- 5 A community manager role and a dedicated series of tools are designed and used to trigger and manage relationships among residents;

Although providing access instead of ownership and integrating the product (room) with the service dimension (initiatives and facilities), the Coliving configures itself as a PSS to be accurately designed in order to guarantee an orientation towards sustainable and truly collaborative housing. The Coliving model, indeed, places itself in a hybrid zone in between top down interventions (such as social housing model promoted by public institutions) and bottom-up initiatives in which elective communities choose to promote collaborative forms of housing, strongly sharing communal values. In the Coliving case, the promoter is a for-profit private entity (real estate developers, hospitality owners, start-ups) separated and totally different from the future residents, but at the same time interested in building a community of inhabitants. This emphasizes the need of

designing processes able to act with a strategic role. In the words of Manzini and Vezzoli (2003), to be capable of "creating new stakeholder configurations and developing an integrated system of products, services and communication that is coherent with the medium-long term perspective of sustainability, being, at the same time, economically feasible and socially appreciable today".

This paper presents the development of a brand new concept of Coliving in the Italian city of Milan: the use tools and methods derived from strategic and service design disciplines contributed to set the community at the centre of the PSS design being it the trigger and the mechanism that allows a shift towards collaboration and sustainability.

3 THE CASE STUDY: A MILANESE COLIVING PROJECT

The Milanese Coliving project is promoted by a for profit company which aims at proposing a new housing model for the city of Milan (Italy). The case study has been developed since 2019 and has involved from the beginning a group of designers responsible for the general concept and the design of the collaborative service. The Coliving is developed to host up to 130 persons in around 100 rooms and offers around 600sqm of shared spaces and services such as: a convivial lounge and kitchen, a fitness and wellness club, a vegetable garden, a coworking space, a cinema room, terraces and gardens and a zero waste store.

The aim of this work was, as anticipated, to give shape and literally envision a Coliving model built around the values of: well-being, inclusion, sustainability and, most important, community. This last word is here to be intended as both the goal and the means of the intervention. In the founders' intention, relationships among residents are both an integral part of the Coliving functioning system and a measure of the initiative's success and its impact. Thus claiming for models of value co-production and for co-produced as well as collaborative services (Selloni, 2017)

I will describe here the major steps that were often conducted in an interconnected and parallel process, focusing the discussion on a limited number of tools used.

3.1 Phase 1 - Strategic design to envision the Coliving concept

The first phase was focused on developing a shared vision for a future settlement of Coliving. Indeed this initial step started months before the identification of the location, the creation of the overall team (i.e.: including architects, IT developers, financial board and more) and the launch of the initiative.

The goal of this part was twofold: on the one side to gather and share knowledge among the client and the designers on existing sustainable and community-based housing solutions and on the other one to explore different scenarios of the future. By leveraging on previous experiences and on the initial research, the scenarios were built around 5 main parameters:

- 1 The kind of involvement of the residents in the life of the building: ranging from passive state (information, consultation) to more proactive ones (codesign, co-production, co-management)
- 2 The governance models, meaning the system of relationships between the management team (personified in a community manager appointed by the company) and the community of residents. The four parameters are:
 - 2.1. service delivery (with almost no user involvement);
 - 2.2. animation of the group of residents (proposing initiatives, events and courses, responding to single requests);
 - 2.3. support and accompaniment of participation in shared activities and collaborative services;
 - 2.4. enabling collaboration and self-management of services;
- 3 The degree of openness towards the neighbourhood and the city, identifying either a close, semi-closed and open community according to the permeability of spaces and receptive and welcoming character of the community and therefore the willingness to act as a hub beyond the walls of the building;
- 4 The duration of stay, considering the short, medium or long stay of residents in order to frame both economic sustainability issues and motivations, approach towards Coliving and target lifestyles;
- 5 The service orientation, in a continuum that ranges between services focused on solving a problem (performance oriented) and services focused on creating links and bonds between people (relationship oriented). Thus exploring (and cross checking) the composition and the balance of initiatives and activities aiming at both solving everyday problems and building a community.

These 5 parameters generated three main scenarios that were discussed in a series of workshops and finally codified in the resulting one, which served (and still does) as the overall presentation of the project and as a compass to orient the multiple professionals participating in the development.

3.2 Phase 2 - Designing the community

The second phase started on the basis of the scenario building and focused on the design of the community and more specifically on the relationships between the residents themselves and with the community manager.

In the perspective of a truly collaborative household, inhabitants are not a passive audience to inform, but a series of people exchanging ideas, aid, resources, skills and networks. In order to

encourage the growth of a sense of belonging and reciprocal moral responsibility, it is necessary to start a reflection on 1) the main value around which to aggregate people, 2) the kind actors to involve, but also 3) the channels of communication, 4) the touch points and typology of encounters, 5) the rules of engagement, 6) the roles that members can play and 7) the rewards they benefit from participating in the activities. All this resulting in the development and adoption of a "Community Toolkit", conceived as a series of processes and tools to be used when designing the conditions for a community to be born and grow. This acquires a fundamental importance when the Coliving project builds its identity and functioning scheme on the active contribution of residents in proposing, organizing and managing part of the collective initiative, therefore participating directly in the (co)production of value.

In this paper, I present two of the tools that have been developed to tackle in particular the governance of a community and the reward system.

The Governance map. We assume a Coliving company to be a community-based organization (Mainieri, 2021), when it i) is the expression of a shared value, which relies on a shared purpose more than on a top-down mission and stems from the recognition of a common need; ii) is open and outward-looking, welcoming whoever has the will and/or the ability to contribute to the generation of value; iii) assumes internally the strategic and decisional process while enabling the collaboration among members. This means that the design action refers to a community which is not totally in charge of its self-determination and management (as in the cohousing examples), but that needs to grow and live for producing wellbeing and value for its members as well as to sustain the economic model of the Coliving. In this trade-off lies the necessity of identifying trajectories of growth associated with different phases of relationship between members and the company as well as various codified roles.

The Governance map aims to identify the main roles within the community and the company (or organization), defining for each one their responsibilities and tasks. By analysing the lifecycle of existing communities, four are the progressive phases and relative roles that emerge:

- within the members:
 - discovering - passive user;
 - onboarding - supporters;
 - engagement - activists;
 - leadership - contact person /project referent;
- within the company
 - community manager

- facility manager
 - central company

The map supports the definition of the various roles, the tasks associated with each of them and directed towards the community (peer-to-peer) or towards the company and the responsibilities undertaken towards the project.

Figure 1. The Governance map



Source: the authors.

The Rewards Map. The rewards map aims to identify, based on the previously identified roles and related activities, what motivations drive the members of a community to take action and what rewards the organization and peers can provide to incentivize and govern participation.

This tool explores how the motivations that drive a user towards participation change and modify as the role assumed changes. Starting from the definition of extrinsic and intrinsic motivations², it is possible to analyse how the former are more associated with elementary roles (such as the user) and how intrinsic motivations are added and substitute the former as the engagement increase (Mainieri, 2021).

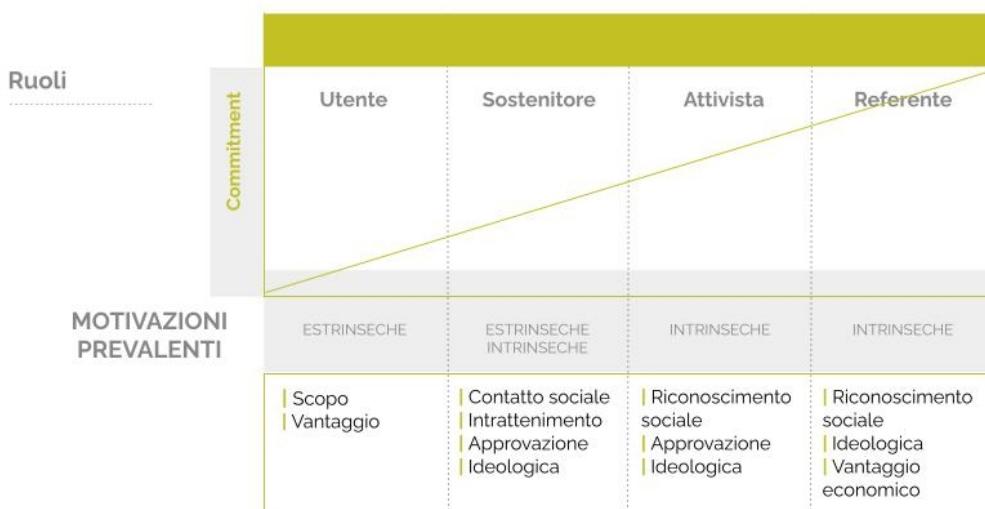
Moreover the map identify 3 different groups of rewards:

- economic rewards: assigning an economic value to actions performed by members, related to extrinsic motivations of opportunity and convenience (e.g.: discounts, token or virtual coins, vouchers);

- visibility rewards: attribution of visual, codified and recognizable value to members' participation, related to social recognition motivations (e.g.: badges, merchandising, storytelling and networking)
- access to the brand core values and exclusive experiences: attribution of experiential value to active member participation, related to motivation of belonging (e.g.: experiences, activities, codesign with the company)

This tool allows the design of an integrated and consistent reward system, able to link the different roles of the governance models, the activities carried on by members and the motivations that drive the proactivity and participation.

Figure 2. The Reward map



Source: the authors.

3.3 Phase 3 - designing collaborative and co-produced services

The last phase was dedicated to design a series of collaborative services such as a purchasing group and social-eating initiatives. Service design tools and methods were used to frame the stakeholder involved in the processes, to associate tasks to governance roles, to explore user journeys and to identify the main touchpoints. Blueprints were designed to explore the technical delivery and set up of each service and used to inform the design of the interiors and of IT solutions. It is worth mentioning the strong correlation and interdependence between the service design and the community design phases.

4 CONCLUSIONS

Collaborative housing can be considered to be a sustainable product service system by enabling a reduction in the use of space, energy and resource consumption, in adopting more eco-efficient solutions, in activating shared use of appliances, services and households. Moreover it contributes to diminishing the sense of isolation by activating regular social interactions and building a sense of belonging and ownership by empowering people to take action and participate actively. The innovation shifts from the product design to a wider system made of product and services (private,

semi-private and collective spaces associated with initiative and shared activities), network of actors (in various combinations of promoters, final users, building companies, technical suppliers, neighbourhoods, public institutions) and supporting infrastructures (in terms of existing private and public, social and economic contexts, rules and resources), which requires for a systemic approach to the single projects, but overall to the housing domain. As regards the Coliving sector, which is the focus of this paper, the combination of such elements can produce a variety of results, not completely exploiting the potential of building strong and active communities. But on the contrary sometimes resulting in a model that understands housing accessibility as a temporary and passive use of an individual-based service, with collaborative services as optional add-ons. On this point, the PSS and related design disciplines can play a major role in maximizing the generation of sustainable qualities by focusing its action also on the community as the main lever and mechanism by which to produce the above-mentioned benefits. Indeed, the specific case study here presented introduces the design, start up and growth of a community of residents, as a different and specific object of design and of PSS, which is not intended as a 'network of actors' participating to the delivery of services, but as a group of users coproducing shared value through their daily collaboration and giving shape to a community-based organization. This means to further investigate the community design processes, by deepening the knowledge on how community-based organizations are developed, grow and last in time.

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NOTES

¹ Communal dining and lounge spaces, Gyms, Swimming pools, Laundry rooms, Cinema rooms, Gardens/terraces, Co-working spaces, Car sharing facilities.

² Intrinsic, which means that they pay back inner emotions - and therefore related to values of status, recognition, fulfillment - or extrinsic, i.e. economic or otherwise opportunistic.

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