D1.1 Families_Share framework, and local and international user needs and requirements

WP1 – Conceptual framework for users' engagement, needs' analysis, behavior analysis strategy and co-design

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Executive Summary

This document reports on the activities conducted in WP1 and includes a framework for collective and inclusive innovation in childcare and in Life-Work Balance, a mapping existing initiatives on time-sharing and socializing tasks in order to define a set of best practices and lesson learned to be exploited for the pilots' implementation. Starting from this framework and from the relevant dimensions identified, activities in WP1 have been focused on engaging stakeholders and communities to identify local needs and bottom-up initiatives in relation to childcare, opportunities and barriers related to the introduction of peer-to-peer approaches to childcare. A participatory approach has been implemented to facilitate the identification of needs within the existing communities and relevant public and private stakeholders. To refine and deepen the understanding of local communities' needs and to define the services to be activated in the Families_Share platform, a co-design process was followed to actively engage the stakeholders at each CityLab in the actual design of the Families_Share services through participatory methods. Specific actions have been instantiated and implemented at each CityLab to involve stakeholders. Finally, inputs and service concepts emerged during workshops have been synchronized and worked out at the international level to provide a concrete input for the platform and mobile-based services design and implementation.

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1. Introduction

The Family_Share project aims at exploring bottom-up solutions for childcare leveraging the experiences in seven European cities (called CityLabs). Recognizing the negative impact of the economic crisis in social and market conditions, the project aims at proposing new forms of socialization for in European urban areas to cope with the balance between life and work. Families_Share is co-designing and implementing a social innovation digital platform to support families by means of the sharing time and activities connected to child assistance, parenthood, after school activities, family activities and free time.

In pursuing these goals, the first part of the activity in WP1 (Task 1.1, Task 1.2) focused on (i) the creation of the baseline for citizens and communities' engagement by defining the methodological framework for the design of the Families_Share platform; (ii) the identification of the stakeholders' needs at the local and international level; and (iii) the first phase of the co-design of the platform which is going to be developed in WP2 and deployed in the 7 CityLabs in WP3.

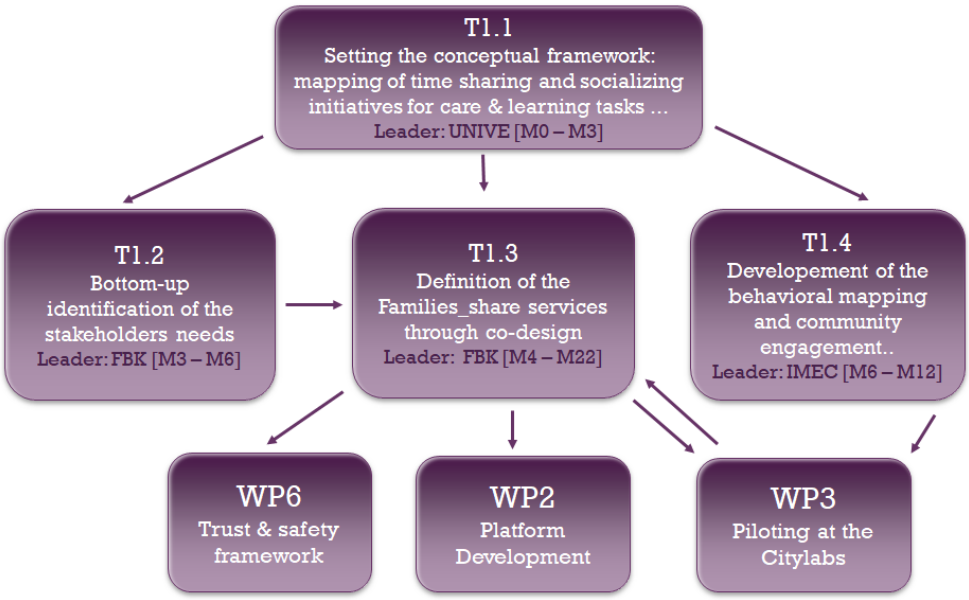

Figure 1: WP1 tasks and their connection with WP2 and WP3

The WP1 activities focused on the active involvement of existing communities across the CityLabs, as well as private and public stakeholders. For logistic reasons, the Budapest CityLab has not yet been activated and therefore the co-design has been based, at present, on the insights from other CityLabs only.

The goals of the activities carried out in the first 6 months of the project, as part of WP1, were the following ones:

- The definition of a **conceptual framework and methodologies for collective innovation**. To this end, Task 1.1. has been devoted to identify principles and framework for collective and inclusive innovation in family/ work balance and after-school activities, a mapping of existing initiatives on

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time sharing and socializing tasks at the international and local level, and a set of best practices to be exploited for the pilots' implementation (T1.1 UniVE)

- The **engagement of the local communities.** Starting from the framework and from the dimensions identified, the activities in WP1 were focused on **engaging stakeholders in the local communities to identify their needs** and bottom-up initiatives in relation to childcare, opportunities and barriers related to the introduction of peer-to-peer approaches to childcare. As part of Task 1.2, a participatory approach has been implemented to facilitate the identification of needs within the existing communities and relevant public and private stakeholders.
- The **initial co-design** of the Families_Share approach and platform. By refining and deepening the understanding of local communities' needs and in order to define the services to be implemented in the Families_Share platform, a co-design process (Task 1.3) was followed by actively engage the stakeholders at each CityLab. Specific actions have been instantiated and implemented at each CityLab to involve stakeholders. In synergy with WP6, activities will be performed to empower users to encourage their active participation in co-design activities.
- Finally, inputs and service concepts emerged during workshops have been synchronized and worked out at the **international level** to provide a concrete **input for the platform and mobile-based services design and implementation.**

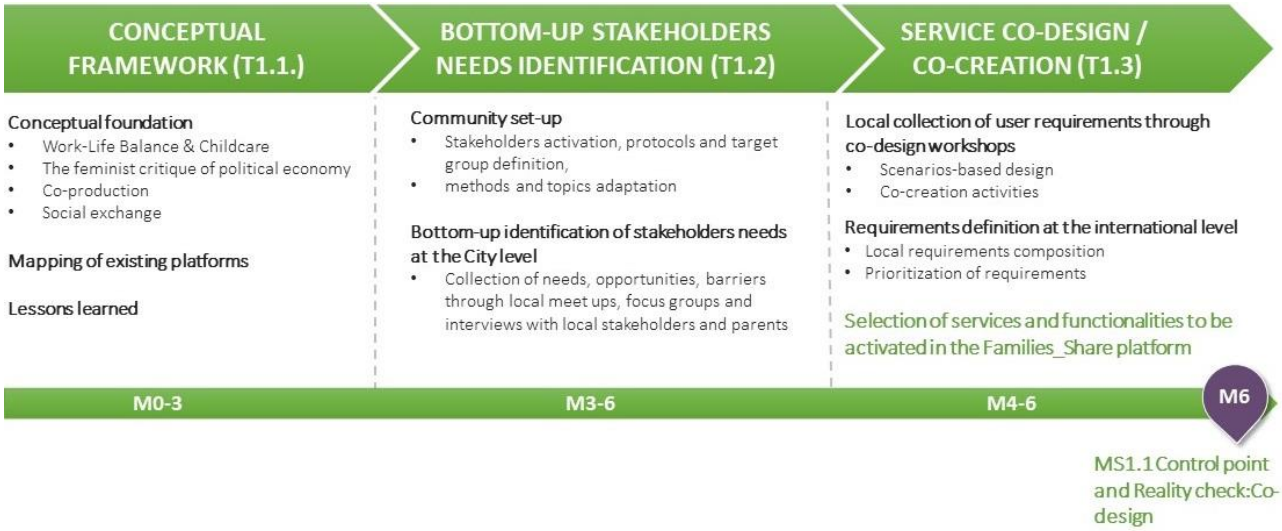

Figure 2. The activities carried out in the first 6 months of the project, as part of WP1

In summary, the needs analysis has been conducted in the 6 EU cities where participatory needs analysis, co-design and co-creation processes will be set up (WP1), leading to the development of the first Families_Share Platform prototypes (WP2) which will trigger socially innovative models for socialising childcare in urban neighbourhoods (WP3). The CityLabs will also be sites at which new socialisations and networking models based on sharing family tasks will be devised and tested. At the same time, the Families_Share prototypes allow for improved software development and adaptation of the technology to user feedback as part of a comprehensive co-design activity. The digital and social innovation processes fostered through co-design and co-creation of the seven CityLabs will be supported and triggered by the awareness-raising campaign and its events and communication tools. The social, economic and cultural impact of the Families_Share activities will be measured through the combination of a bottom-up process and state-of-the-art research methodologies. Furthermore, the pillars will work out actions aimed at ensuring local sustainability and national exploitation of the Families_Share Platform.

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1.1. Intended audience

This document presents the conceptual framework and the reports on the work conducted in the CityLabs for the collections of user needs and for the first part of the co-design. It is aimed at Families_Share consortium members to progress on the finalization of the design and the implementation of the first release of the Families_Share platform. It also contribute s to the overall dissemination of the activities and the results of the project.

1.2. Document structure

The document is organized as follows.

Section 2 presents the conceptual framework in which we posits the elaboration of Families_Share activities together with the technological perspective on which we based the design of the Families_Share platform.

In Section 3, a mapping of existing offline and online initiatives for time sharing and socializing tasks is then presented. The analysis points out a number of best practices and guidelines that provided a common ground for the needs exploration and co-design activities conducted across the Families_Share CityLabs.

Section 4 introduces the Families_Share approach for bottom-up elicitation of user needs in the diverse CityLabs and the strategies for stakeholders' involvement. Then, the specific results of each CityLab is presented and discussed.

Section 5 introduces the Families_Share approach for co-design in the CityLabs together with a summary of the co-design workshops run at each CityLab.

Finally, section 6 describes the exercise of aggregation and reconciliation of the user needs done at the project level to share the lesson learned in the diverse CityLabs as well as the initial basic concepts for the actual design of the Families_Share platform that is going to be finalized as part of WP2 before the second phase of co-design at the reprise of WP1 at month 2020.

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2. Theoretical background: co-creating social innovation and local welfare services through the use of (collaborative) technology

In building the conceptual framework of Families_Share Project—considering the motivations, the objectives, and the pillars of the project—we have borrowed from several theories and concepts elaborated in different disciplinary fields that spam from theories of social innovation to studies related to new alternative economies.

Furthermore, Task 1.1 has been devoted to identify principles and framework for collective and inclusive innovation in family-work balance and after-school activities as well as to collect existing initiatives on time sharing and socializing tasks in order to derive a set of best practices with the aim to inform the project activities and specifically the pilots' implementation.

Eventually, Families_Share aims at contributing to the ongoing debate in the role of technology in facilitating citizen engagement in a context of social innovation. To this purpose, the project encompasses an evolutionary design approach through which the users are involved throughout the whole lifecycle of the project since the initial phases of bottom-up needs elicitation, the co-design of the initial platform as well as during the piloting phase to complete design as part of the appropriation process. In this respect, technology is shaped not only through the design process, but also through concrete and local use. The challenge is to create an enabling environment—in each individual CityLab and among the CityLabs as well—that supports the creation of a debate in which different voices can be taken into account and where individual and collective competences, skills and motivations are recognized and valued.

2.1. Work-Life Balance and Childcare

Work-life balance is recognized as a problematic and delicate issue in the European Union. While over the past 20-30 years in Europe, part-time employment has been on the rise, studies show that most Europeans perceive that they work at high speed and under pressure. Austerity measures have forced cuts in public spending and often raised fees for accessing public services, including care related ones, at the same time the economic crisis is associated with job losses, pay cuts, and temporary and informal work (EurWork, 2013). The increased number of workers on compressed weeks schedules proves to bring about light and shadow at the same time. This situation often entails more time available for social activities and parenting (and this is often the case for high-skill workers who choose alternative work arrangements) but low-skill workers who struggle to make a living and are beholden to the needs of corporations. Actually, in the last decades, there has been a decline in average working time, yet an increase in unpaid overtime has also been recorded. That reveal significant implications for the work-life balance of families: there is clear evidence that for low-income families in particular and for those where both parents are working (in particular those with boosted working hours or atypical employment schemes) childcare issues is a challenge now more than ever.

Indeed, the increasing number of families who suffer from income loss, employment instability or unemployment is demonstrating impacts on children lives. A study from UNICEF (Chzen, 2014) illustrates how 1.6 million more children were living in severe material deprivation in 2012 (11.1 million) than in 2008 (9.5 million) in 30 European countries. The same research shows how beside material deterioration, more and more children are suffering deprivation that is impacting on their informal education and after school activities also leading to the elimination of sports, music or other after school activities, together with a lack of funds to buy school materials or clothes.

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The NESTA report Innovation in Childcare (Rutter, 2016) pinpoints specific gaps in childcare provision for parents with atypical work patterns and argues that informal care often may provide the best solution for parents who have ad-hoc, emergency and atypical childcare needs. In particular, if supported by digital tools and a bottom up design approach that starts from existing physical meeting points and networks to further expand them.

Because of the shift in the work landscape—which is becoming the norm in most European countries—and given the increased rate in people who have accomplished higher Education studies, there is a pool of available skills and capabilities which remains unexploited and could be shared in local communities to compensate that impoverishment of learning opportunities of children in arts, music, coding and other informal educational activities. New forms of socializing care based on sharing economy models and enhanced or facilitated by new web-based digital tools can offer viable solutions to these challenges, not in view of replacing welfare state provisions but for complementing them. A broad range of family care and learning needs could be tackled socially—from those parents who find themselves out of the labor market or have spare time due to their working conditions.

The NESTA report (Rutter, 2016) indicated informal childcare and social networks as workable and valuable interventions that hold the potential to broaden and deepen access to childcare. Particularly for parents with atypical jobs and working patterns. Families_Share draws its design on the identified leverage from the NESTA study of increasing participation in reciprocal informal childcare networks through care credits; expanding the reach and take-up of digital platforms to match supply and demand easily and flexibly.

Families Share is also building on theoretical frameworks from social reproduction theories in feminist studies Federici (2012), among others, have highlighted the structural national and global complex and intersected inequalities in social reproduction work (including childcare) across gender, class, ethnicity, argued that globalization, while increasing employment of women, in fact did not help reducing the burden of domestic work being mostly undertaken by (often migrant underpaid) women, not even in the most technologically developed countries, despite the widespread adoption of household technologies. The project is going to take into account how a digital social innovation experiment such as Families Share can contribute to contrast increased inequalities among women, to see reproductive work and time recognized and valued in communities and to foster men in taking an equal share of this. Furthermore, within this theoretical approach, the idea of care as 'commons' emerges which is extremely relevant for Families Share as the project is bringing childcare partly outside the monetary-service economy, and providing a test-bed for a feminist approach to alternative economies (see Section 2.3).

2.3 Alternative and collaborative economies

During the financial crisis period, several self-organization and co-production initiatives have been witnessed in which citizens organize within communities to try to address their needs by sharing knowledge, goods and services.

This proliferation of new social and political arrangements—that spam from alternative form of participatory democracy to alternative markets based on reciprocity—are difficult to classify, still, as pointed out by Vlachokyriakos (2017), a number of values distinguish them from the practices of the dominant economy:

- they build communities based on cooperation and collaboration rather than competition;
- they are based on mutuality and reciprocity in bold contrast with isolation and atomization;
- they exemplify an alternative model of self-organization based on direct democracy and horizontal participation rather than centralized control;

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- they encourage pluralism and diversity as opposed to imposing a global monoculture.

In the following sections, we review some perspectives that reconsider and propose new conceptions of economy and capitalism, making room for novel approaches and alternatives forms of economy.

2.3.1. Sharing economy and collaborative consumption

Sharing economy or collaborative consumption initiatives are an emerging phenomenon that entails "the use of networked tools to enable a range of sharing, exchange, and co-use practices" (Lampinen, 2015). Online peer-to-peer exchange involves "the transfer of valued goods, services, or information in exchange for other valued resources. The form of the exchange is crucial to understand outcomes, since the form of interaction defines the level of uncertainty and risk that individual face "(Lampinen, 2015).

The sharing economy discourse is central to a better depiction of public-interest services, as argued by Selloni (2017), because it is closely connected to the interlinking of active citizenship, social innovation, new forms of economies and new forms of welfare.

In this new landscape, it is worth focusing on the key elements of the so-called "sharing economy", that refers to the confluence of three broader socio-economic developments (Constantiou, 2017):

- **Access over ownership.** Consumer attitudes and behaviors are increasingly shifting from hyper-consumerism and the primacy of buying goods toward buying access to goods and "servitized" products (e.g., streaming movies on Netflix rather than buying DVDs, relying on Uber rather than buying a car). This development is also called access-based consumption or the on-demand economy.
- **Peer-to-peer**. Internet-based networks and platforms increasingly mediate interactions and transactions among peers typically coordinated by trust relationships and personal reputation (e.g., buying second-hand goods on eBay). This development is also called the peer-to-peer economy.
- **Allocation of idle resources**. More and more private individuals participate casually in economic activities by resorting to privately owned resources (both assets and labor), which would otherwise remain idle (e.g., renting out private, unused storage space on ShareMyStorage). This development is sometimes called collaborative consumption.

The sharing economy has emerged as an alternative model in several domains (Curry and Dunbar, 2011). Many stakeholders stress the positive impact of the sharing economy while several authors start reflecting on the consequences of new forms of exchanges. Characteristics of sharing economy is the fluidity guaranteed by the advantages given by the digital economy, that "it has become relatively easy to organize outside of formal organizations, which allows sharing economy platform to use a range of mechanisms to coordinate platform participation in novel ways" (Constantiou, 2017).

A main issue for sharing economy platforms is to understand the type of organizational coordination mechanisms. Actually, any group of individual that has to complete a task has to contend with two factors: (i) specialization (that impacts on the division of labour for the task into subtasks), and the (ii) coordination of subtasks to accomplish the overall task.

Mintzberg distinguished 6 different organizational coordination mechanisms: from mutual adjustment (coordination work is done through a process of informal communication between people conducting interdependent work) till a standardization of processes and norms.

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Constantiou and colleagues (2017) proposes to classify sharing economy platforms according to four models obtained by combining two key dimensions:

- tight or lose control over participants;
- high or low rivalry between participants.

In this classification, each of the prototypical examples uses a different organizational coordination mechanisms (See Figure 3). For instance, the "Gardners" model – exemplified by the Couchsurfing platform – proposes a model where the service is run collectively by member communities. The interaction is largely left to participants themselves and coordination among members is mainly achieved though "mutual adjustments".

	Control	
Rivalry	**Loose** Minimum standards or guiding principles for platform participation are set by the platform owner	**Tight** Platform participation is specified, standardized and monitored by the platform owner
High Pricing scheme based on real-time changes in supply and demand	***Chaperones*** Prototypical Example: **Airbnb** • Value proposition: Service differentiation • Other examples: Homeaway, Rentomo, Apprentus	***Franchisers*** Prototypical Example: **Uber** • Value proposition: Low costs and efficiency gains • Other examples: Lyft, Postmates, Caviar
Low Pricing scheme based on compensation of the suppliers' costs	***Gardeners*** Prototypical Example: **Couchsurfing** • Value proposition: Self-organization and community building • Other examples: BeWelcome, BlaBlaCar, Peerby	***Principals*** Prototypical Example: **Handy** • Value proposition: Low costs and risk mitigation • Other examples: TaskRabbit, Zeel, Deliveroo

Figure 3. Four models of sharing economy (Constantiou et al., 2017)

2.3.2 Co-Production of public value

Even if it has been around for decades, the concept of co-production has in fact experienced a revival in the last decade, and public management researchers had paid increasing attention to the role of third sectors and citizens in public service delivery (Brandsen et al., 2012).

More in detail, co-production has traditionally referred to "the mix of activities that both public service agents and citizens contribute to the provision of public services. The former are involved as professionals, or *regular producers*, while *citizen production* is based on voluntary efforts by individuals and groups to enhance the quality and/or quantity of the services they use' (Parks et al. 1981, 1999). In co-production people deliberately choose to contribute time and effort in the production of services that were previously the responsibility of professional actors and organizations alone.

What is different with respect to classical volunteering is that co-production takes place within a context of professionalized service delivery and that it concerns services the people involved themselves use, i.e. not or not solely for the benefit of others (Pestoff, 2011). So the term of co-production has been used to explain

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different phenomena and aspects of citizens and/or third sector participation in different phases of the policy making or in public service delivery. By identifying a set of different service activities that has been defined as "co-production" by different authors in the field of public administration and public management, Bovaird and Loffler (2012, 38-9) distinguished the following range of service activities that can be collocated within the umbrella of "co-production activities":

- Co-planning of policy (such as, deliberative participation)
- Co-design of services (such as, user consultation)
- Co-prioritization services (such as, individual budgets)
- Co-financing services (such as, fundraising, charges, agreement to tax increases);
- Co-managing service (such as, leisure center trusts, community management of public assets, school parent-governors);
- Co-delivery of services (such as, peer support groups);
- Co-assessment (including co-monitoring and co-evaluation) of services (such as, tenant inspectors, user online rating, participatory village appraisal).

In the past decade, the study of co-production focalized in the way in which the constant interaction between multiple actors that are involved in these different "co-production activities" can co-create public value (Alford 2009). To this purpose, Moore suggested that public value can be conceptualized "partly in terms of the satisfaction of individuals who [enjoy desirable outcomes] and partly in terms of the satisfactions of citizens who have seen a collective need, fashioned a public response to that need, and thereby participated in the construction of a community" (1995, p. 47). Bovaird and Loffler (2012, 42-43) also suggested that value added in co-production activities has several dimensions that differ from private sector to public and third sector organization. The dimensions they identified are:

- user value;
- value to wider groups (such as family or friends of service users, or individuals who are indirectly affected);
- social value (creation of social cohesion or support for social interaction);
- environmental value (ensuring environmental sustainability of all policies);
- political value (support to democratic process, e.g. through co-planning of services with users and other stakeholders);

While in the private sector "value" has traditionally referred to the first two items, for public and third sector organizations, all of the five elements of public value are relevant. In all of these elements, "value" refers to the citizen satisfaction with the service, as well as the extent to which it is able to meet their social and economic needs.

The concepts of co-production and "public value" undergone a change in the last decades contextually with the evolution of the traditional idea of a public administration totally managed or coordinated by the public authorities with top-down relationships. The new concept of New Public Governance (Osborne 2006; Osborne 2010) reflects “a more plural and pluralist model of governance and provision of welfare services, based on public-private networks, where citizens now have even more active roles as co-producers of some or many of the services they expect, demand or even depend on to fulfill a variety of their most important roles” (Pestoff 2012, p. 14). In this respect, service management theory is currently evolving the traditional formulation of co-production. In fact, the concept of "service" is now conceptualized as a process through

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which value is added to any service or product (Osborne et al 2016): value is co-created through the transformation of service components at the point of co-production (Lusch and Vargo 2006).

Taking into account these changes in public services delivery, contextually with the emerging new technologies that are increasing the users control over public services, Osborne et al. (2016, p. 640) recently defined co-production have as «the voluntary or involuntary involvement of public service users in any of the design, management, delivery and/or evaluation of public services». As understood in these terms, co-production can have both a different nature and a different locus: while the nature of co-production refers to voluntary or involuntary participation of citizens/users in public service delivery process, the locus refers to the public service both as entities in their own right and as part of holistic service delivery systems. By combining these two elements (nature and locus of co-production), Osborne et al. elaborated a four ideal types of values that are co-created by users (see Figure 4), that are:

- the traditional co-production of public services, where public value is co-create by citizens that co-produce public services with public authority;
- the co-design of public services, where public value is voluntary co-create by citizens that are involve in the improvement of the performance of an existing public service (such as: in its design, evaluation or improvement);
- the co-construction of public services, where public value is the result of the interaction of the service user with the service system as a whole to construct his/her lived experience of the service;
- the co-innovation of public services, where public value is the result of the voluntary involvement of service users in the co-innovation of new forms of public service delivery within service systems.

As the authors argued, these four ideal types should in a future focus also on the impact that digital and e-services have in our comprehension of co-production, the latter understood as the voluntary or the involuntary participation of citizens in different aspects of public service delivery.

		Locus of co-production		
		Individual service	***Service system***	
Nature of co-production	***Involuntary***	I: Co-production	III: Co-construction	*Towards the co-creation (or co-destruction) of value*
	Voluntary	II: Co-design	IV: Co-innovation	

Figure 4. Conceptualizing co-production (Osborne et al., 2016)

A specific case of co-production are the initiatives in childcare, which are becoming more and more common in Europe. According to NESTA Study Innovation in Childcare (2017), an alternative to traditional childcare

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consists in involving parents together with trained volunteers in order to reduce staffing costs, expand the social mix of adults in childcare settings and in general to reduce costs to parents and families.

Furthermore, a study in 8 EU countries have provided many different examples of direct contributions in economic, political, pedagogical and social terms by parents to the value created by childcare facilities throughout Europe (Pestoff, 2011). A lot of efforts have been put to improve the provision of childcare at national level, however, the existing public offerings are in short supply in many EU member states, while private sector organizations too often fail to meet the needs families, especially those of low-income families.

To that end, Family_Share project is a case in point since its aim is to realize a platform of social innovation to facilitate co-production initiatives in childcare. Previous studies focused only on traditional forms of co-production. According to NESTA Study Innovation in Childcare (Rutter, 2016), for example, an alternative to traditional childcare consists in involving parents together with trained volunteers in order to reduce staffing costs, expand the social mix of adults in childcare settings and in general to reduce costs to parents and families. Furthermore, a study in 8 EU countries have provided many different examples of direct contributions in economic, political, pedagogical and social terms by parents to the value created by childcare facilities throughout Europe (Pestoff, 2011). A lot of efforts have been put to improve the provision of childcare at national level, however, the existing public offerings are in short supply in many EU member states, while private sector organizations too often fail to meet the needs families, especially those of low-income families Families_Share project, therefore, will also contribute to the current debate on the role of technology on co-creating public value in co-production initiatives in Europe.

2.4 The perspective on technology design in Families_Share: developing a participative, inclusive and constructivist approach

The theoretical stance taken in Families_Share with respect to technology is that of *sociomateriality* which recognizes as the acceptance and the use of a specific technology depends on the institutional and organizational norms in which it take place whereas, at the same time, the technology in use affects those institutional and organizational norms (Leonardi, 2012). Our approach, therefore, is that of designing technology not as a bundle of functionalities but rather as a system of constraints and affordances (Faraj & Azad, 2012) that supports and fosters specific social practices. In this respect, we embrace co-design (Sanders and Stappers, 2008) as a practice aimed at firmly rooting the design of innovative technologies into local communities and existing networks and organizations of citizens, parents and stakeholders.

2.4.1. Co-design and participation

The practice of co-design implies the participation of end users to the design process. It is not just a set of methodologies but rather it is a mindset, which holds the belief that all people have something to offer to the design process when given appropriate tools to articulate themselves (Sanders, 2002). The major advantage of the involving users in the design process is a deeper understanding of the psychological, organizational, social and ergonomic factors which eventually lead to the development of products that are more effective, efficient, and safe (Abras, et al., 2004). Actually, there are different ways of involving the users in the design of a digital artefact, typically during the requirements gathering and usability testing (Abras et al., 2004).

Co-design dates back to early ’70s in Scandinavian countries with the goal of improving workplace production by putting together the expertise of the designers and the situated expertise of the people whose work was to be impacted by the introduction of a new system (Sanders & Stappers, 2008). While at the beginning the notion of Participatory Design was meant as a reflective practice (Bannon et al., 2012) which involved

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practitioners in a given field, later it evolved into a set of practical tools to involve citizens in designing social innovation (see for example Jégou and Manzini, 2008).

In our approach, we both involve the citizens and other stakeholders since the beginning in a critical reflection about their practices and the (possible) support provided by a digital technology as well as we will continue the design process once the technology is in place.

The former approach has been tackled in 5 CityLab of the projects by means of the scenario-based design approach (Rosson and Carroll, 2002) which consists in presenting and discussing stories that represents a specific technology in use with the purpose of discuss possible solution as well as identify potential problems of given solutions (Bødker, 2000). The use of scenarios is best suited within activities of higher level of participation and engagement: focus groups or group discussions are more suited for exploring reactions toward specific technical solutions but individual interviews/discussions may too provide useful insights. Creative methods and co-creation tools can be used to better explore alternative ideas and to make ideas concrete (example: card sorting, user journeys etc.).

The latter takes places in the Kortrijk CityLab where the Cokido approach is already being used and it will be pursued in the second phase of the co-design activities by the other CityLabs. It consists in an evolutionary design approach through which users' complete design as part of the appropriation process (Carroll, 2004). In this approach requirements are derived by observing how technology is appropriated—that is, how technology is refined and shaped to meet users' local and contextual needs. This focus on the appropriation process allows designers to consider mutual adjustment between the technical side and the social side.

Families_Share has the ambition to be strongly localized and rooted into available open data sets to exploit all opportunities in terms of existing childcare services, leisure activities and facilities. A specific methodological framework was therefore needed in Families_Share in order to meet a number of issues, related to i) the specific type of services to be designed (shared childcare where high levels of trust among participanst should be guaranteed); ii) transnational nature of the project, with the CityLab simultaneously running and collecting stakeholders and communities perspectives; iii) the necessity to take advantage and incorporate–since the beginning of the exploration, already available open-source platforms (specifically Cokido) and the existing local initiatives related to socializing childcare and sharing time.

The methodological framework developed for Families_Share project is grounded on participative approaches. In particular, participatory action research, feminist studies and the co-design literature were inspired the development of the methodological framework. We discuss them in the following.

Participatory action research approach

Our approach is characterized by a perspective of inclusivity and a full recognition of the value of engaging in the research process for all intended and potential beneficiaries of the intervention (Cargo & Mercer, 2008). In this respect, Families_Share is a collective action in which citizens (parents in particular), Public Amministration representatives, business owners, HR managers and other stakeholders collaborate with Families_Share partners in order to co-create knowledge that supports the fulfilment of socio-technical interventions. Participatory action research entails an approach to social investigation, and an approach to take action to address a specific problem or to engage in sociopolitical action. Following Maggie (2009), we recognize two twomain elements, namely:

1. Action: Research should be more than just finding out; research should also involve an action component that seeks to engender positive change.

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2. Participation: Research is a participatory process that requires the equal and collaborative involvement of the 'community of research interest'.

In line with the community-based participatory research, Families_Share methodology is based on the idea of creating a strong partnership that involves local communities in the whole research process.

Feminist studies and constructivism

Families_Share methodology also commit to a constructivist view of technological artefacts design grounded in the most advanced Science Technology and Society studies (STS, Suchman, 1994). According to feminist STS studies, technology design is not a neutral practice. Rather, it is informed by implicit 'gendered scripts' (Rolandsen, 2013). Depending on the implicit representations of users, gendered scripts are embedded into the way functionalities and services are built to respond to needs, and user experiences are shaped in ways that can be more or less empowering for men and women. A similar mechanism is in place in relation to other social differences (class, age, cultural background etc.). For this reasons, it is important to pursue design methodologies that are sensitive to both gender and social differences in order to take into account from the early stages of design, avoiding stereotyped representations of women's and men's needs. Such approach becomes even more crucial when the topic of design are gendered practices such as childcare—traditionally considered as a typically female domain.

In framing Families_Share methodologies and deploying them at the local level, attention has been paid to ensure that a gender-balanced composition is achieved throughout the co-design process, and that diversity is also represented with regards to ethnic backgrounds, socio-economic status, age and family types.

Co-design and participatory design of ICT

Another important strand of research that strongly affects Families_Share methodological approach is that coming from works in the field of participatory approaches for the design of ICT solutions. Co-design implies the participation of end users to the design process. It is not just a set of methodologies but rather it is a mindset which holds the belief that all people have something to offer to the design process when given appropriate tools to articulate themselves (Sanders, 2002). The practice of co-design dates back to early '70s in Scandinavian countries with the goal of improving workplace production by putting together the expertise of the designers and the situated expertise of the people whose work was to be impacted by the introduction of a new system (Sanders & Stappers, 2008).

2.4.2. Reconceptualizing technology as *sociomateriality*

The duality of the technical and the social aspects of a practice is the base of the so-called *sociomateriality* stance, which steers away from the debate of technological determinism versus social constructivism (Leonardi et al. 2012). Although it is well known the behavior of people is not determined by the technology they employ (Orlikowski, 2000), there is also plenty of evidence that artifacts have a sort of agency in the sense that they can "modify a state of affairs by making a difference" (Latour, 2005). The notion of sociomateriality is offered as a theoretical construct to overcome this distinction in that it recognizes that (i) materiality is social because it is created through social processes and it is interpreted and used in social contexts and (ii) social action is possible because of some materiality (Leonardi, 2012).

The common approach in the design of technology is to reduce (digital) artefacts to the sum of their features bringing to the conflation of the product with its emergent uses (Faraj & Azad, 2012). For example, an Excel spreadsheet can be used as a calculator (by using the feature of actively evaluating functions written in cells while filling other cells with numbers) but also to implement an electronic version of a form (by using the grid

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layout to align labels and the possibility of filling other cells with new text). Although the two uses employs two distinct albeit overlapping subset of functions of Excel, they are so radically different that they might be conceived as different applications. Indeed, the difference emerge when considering the technology-in-use rather than the technology-as-designed (Faraj & Azad, 2012).

While the notion of *sociomateriality* entails a technology-in-use point of view, it is not sufficient to explain how technology is used in a given context. Recently, a number of scholars have considered extensions of the *affordance theory*, initially developed in the context of Ecological Psychology (Gibson, 1979). The notion of affordance offers an alternative representation of the technological artifact with respect to its description in terms of features and functionalities (Faraj & Azad, 2012).

In its original formulation, an affordance is a potential for action offered by the environment to an organism. Although, we tend to classify objects according to their qualities (or properties), in fact we perceived them in terms of their affordances, not their qualities (Gibson, 1979).

Norman (1988) has initially proposed the use of the concept of affordance in the design of artifacts. In his terms, affordances are properties of objects that suggest a possible use and the role of design is to carefully craft affordances to be clearly perceived by the users. The same argument has then been pushed by other authors in the field of Interaction Design: for example, Gaver (1991) suggests the concept of *false affordance* to explain how people fail to interact with artefacts in some conditions. This notion of affordance as an intrinsic property of an artifact might be useful but it has been criticized as a misunderstanding of the original notion (see among other Norman, 2008).

In the field of Information Science, the term affordance has been adapted to conceptualize how the materiality of an artefact may favors or foster and at the same time constraints a set of specific uses (Zammutto et al., 2007). In this respect, it is a relational concept more similar to the original meaning and it emphasizes in explaining how artifacts can be used in diverse way and have multiple effects on the organization of works (Leonardi, 2011).

In this respect, in the Families_Share project, we exploit the notion of *affordance* as defined in the field of Information Science in the context of co-design in order to drive the design decisions regarding the platform. In eliciting the needs in the diverse contexts of the CityLabs, we aim at eliciting possible uses of the technology and design to specifically favor, foster or constraint them.

2.4.3. Technologies and local communities

Even in our globalized world, geographical local communities are still important for people not only as a place where they are physically located and spend time but also as a cultural place to strengthen community identity, connect with other people and, recently to develop social innovation activities (Moulaert et al., 2005).

The notion of community is largely discussed in literature and for the sake of Families_Share, we will consider a community in a broad sense of a social group whose members share similar interests (Wenger, 1999) and have a sense of belonging (McMillian, 1996). The Families_Share project's concept, in fact, is located at the intersections of (capitalist) economic crisis and recession impacts, characterized by cuts on public spending and raising fees for public services as well as job losses and employment instability. It is based on the idea that the capitalist model has somehow failed and a post-capitalist era needs to be constructed. In order to partially face the challenges that the economic crisis has brought about, the project aims at developing new

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forms of socializing care based on a sharing economy model, within a time-sharing solution and facilitated by a digital tool. The Families_Share CityLabs can be read through the lenses of the "resilient communities" scenario as described by Kostakis and Bauwens (2014). Their focus, in fact, is mostly on re-localization and re-creation of local communities and represent the starting point from the development of strong peer production in the field of childcare.

In this respect, information technologies may expand the ways of interacting within local communities and may lower the barriers to participation in social innovation activities (Han et al., 2014). Community informatics is a research field focusing on how information technologies may support local communities goals (Williams et al., 2010). Among the different types of information technologies, mobile phones and social networks gainer a lot of attention from researchers and practitioners in community informatics (Han et al., 2014). Smartphone adoption is widespread not only among young population and it creates distinctive affordances allowing people to access locally relevant information anywhere and anytime (Green, 2003). Similarly, social network (and in general web 2.0 technologies) contributed to lowering the barriers to participation by providing easy-to-use interfaces to support the creation and sharing information (Han et al., 2014).

Han and colleagues (2014) discussed three specific affordances of mobile information technologies in supporting a locally geographical community. Namely, mobility, immediacy and social presence.

Mobility refers to the possibility offered by smartphone to access information services in any place and in any time. In the context of social communities, mobile phones may facilitate access and interaction with various types of community information (for example reading local news) as well as fostering social communication among members of the community.

Immediacy refers to the quality of bringing somebody into direct involvement with something. For example, the immediacy of mobile phones include the possibility of making memos and taking photos, for example. There is some evidence that increased immediacy contributes to social presence (for example Rau et al. 2006).

Social presence refers to the degree of salience of the person in a mediate communication. The has been much research highlighting the correlation between mobile technology and social presence, for example regarding internet connectivity in public spaces contributes to generation of social interaction (Hampton et al., 2009)

2.4.2.1 Time-banking

One of the most interesting application of information technology in support to local communities is time banking. Specifically for us since it includes several characteristics that might be similar to the approach to childcare fostered by Families_Share.

Time-banking is a practice of exchanging services that use time as currency. Developed during the 1990s in order to increase social capital by focusing on the value of the individual rather than on the value of a strong currency, and allowing people to exchange skills and time rather than money (Cahn, 2000). During the last decades, banking time has undergone a process of evolution, moving from a series of experimental programs to a much wider movement that has spread globally over time. This evolution has generated regional associations, training materials, academic documents and software systems. Nowadays, organized time banks are found in more than thirty countries, including Russia, China and in various countries in Europe, North America, South America and Africa. In the USA, for example, there are about 500 time banks that together account for more than 37,000 registered members, with the smallest with around 15 members, and

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the largest ones with more than 3200 members. UK is another country in which several banks are present, with an estimation of around 3,000 organizations and around 32,000 registered members.

Time-banking emerged as an innovation platform, and over the last 30 years much has been learned about how time banks can act as a vehicle for social change. One of the main functions performed by time banks is to facilitate exchanges of services between the various members. By using information technologies, bank members can list the services they can perform, where and when they can perform them and they can list the services they would like to receive. When a member performs a service for another member, the recipient's time credits are transferred to the supplier account. The type of services usually exchanged include childcare, cooking, gardening, etc. A moral obligation is fostered when receiving a service to return it.

Usually, there are some basic rules in the time banks such as (i) all hours are the same regardless of the type of service taken into consideration; (ii) time credits cannot be converted into cash; (iii) members can spend time credits only in some specific ways (e.g. provide personal support, promote charitable purposes, build community resources, to remedy a social problem and so on).

The credits earned have a double purpose: on one hand, they have purchasing power while on the other hand they conveys the meaning that work has value. While the first aspect has an extrinsic characteristic, the latter have an intrinsic one. Furthermore, trust is created among the different people within the community by also involving those people who usually would be excluded by market transaction and in this way can feel more integrated in the community.

Time-banking as a means of exchange can be obviously used in many different ways and settings. Among the benefits can be far-reaching, the most important are the following three:

1. Saving, getting more for less. Time-banking uses and exploits resources, existing within a community or group, that are generally neglected during transactions and conventional economic services. Through these activities, a multiplier effect is created that enlarges the pool of available resources in any system, and all this could create innovation by helping the people involved to rethink their beliefs. Through time-banking, a new relationship between service users and suppliers can be foreseen.
2. Social justice. Equality is reached in every hour exchanged by means of the principle of an hour for an hour. Given that an hour is the same for every human being and every individual has something to offer, time-banking can help all people to feel more appreciated, useful and therefore feel part of something, thus promoting a sense of belonging. Furthermore, there is equal access by maximizing resources, whether it is an individual's ability to spend time with someone else, or any other service. Time-banking members enjoy the same access, one hour, which is equal for everyone, sometimes even for resources that could be inaccessible to certain people because they are above their means, for example, given their initial position. All this allows people to learn new skills or take advantage of training opportunities.
3. Strengthen communities. Time-banking has as its objective also to create greater cohesion among the various subjects, build social networks of people who give and receive reciprocal support, and favor and allow those people who come from different contexts and who were therefore unlikely to meet, to actually meet and maybe form friendships or anyway connections between them. In this context, therefore, time-banking can be seen as a very effective tool for community development, which allows both individuals and groups to make changes, choices and control of their lives and neighborhoods.

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According to Cahn (2000), five values are at the core of time-banking:

1. Assets: each person has skills or resources that he can share with others.
2. Redefining work: there are some activities and some forms of work that cannot be bought with money, such as revitalizing neighborhoods, making democracy work, improving social justice, building strong families. Time credits have been designed to recognize, reward and give greater importance to these activities.
3. Reciprocity: all the subjects are involved, and help can be compared to a two-way street where the donor and the receiver meet.
4. Social networks: mutual help is essential to mend communities, to regain strength and trust. Communities are built by putting down roots, creating networks and trust. Through time-banking, these activities can be strengthened and supported.
5. Respect: being at the basis of any personal relationship, and being at the heart and soul of democracy, respect is a key element of time-banking.

In the work by Han and colleagues (2014) a mobile app proved to effectively support a local community in appropriating time-banking practices by means of the affordance of *mobility*, *immediacy* and *social presence* introduced above. In particular, the researchers observed the formation and reinforcement of social connection among participants specifically fostered by the use of technology.

It is worth noting that, despite the moral call, a time-banking model, since it is based on counting hours, has the risk of being drawn to monetary exchange. The challenge that this approach has to face is not to fall into the hegemonic power structures, which is a long term risk. In order to resist on that, stakeholders need to adopt an alternative thought. For this point, Ossewaarde and Reijer (2017) recently argued that the majority of commons-like platforms were born as not marked oriented but then changed and became capitalist players. They reveal how the digital commons in the sharing economy can produce what the authors call an "illusion of the commons" and how this illusion in turn gives rise to cynicism among digital commoners. The authors approach the digital commons as a source of resistance for commoners against appropriation of resources (including natural resources, parks, or urban spaces) by capital. Through 'commoning', alternative social forms and worldviews come to development. However, they emphasize the capitalist dynamics of economic practices of sharing that are conducted through global digital platforms of organizations such as Airbnb and Couchsurfing. Such platforms appear to be facilitators of "sharing", but at the same time, they act as capitalist players that focus on profit maximization. Commons are considered both "ecological commons" and "digital technology commons" or "information exchange commons". For the last ones, the risk of overexploitation does not exist. The authors argue that whenever a mutual exchange of sacrifices is involved in practices of economic exchange, these practices are *drawn toward* the monetary economy and consequently they become vulnerable for being subsumed in the system of global capitalism.

Similar critical issues have been discussed by Bellotti et al. (2014) that pointed out the limits of the "bank" metaphor. A "bank" is actually different from a "community" and suggestion is given to frame the exchange in terms of an "helping network", that is "a social network in which you do not simply connect people, but offer to do something for them or let them do something for you. You acquire contacts through service exchange with different people and the more you do this, the bigger your network becomes".

In the context of Families_Share, we borrow the lesson learned from the time-bank experiences and, at the same time, we aim at contributing to a better understanding of the role that information technologies can

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play in sustaining local communities and local innovation activities. The Families_Share project, in fact, aims at realizing a digital common platform in which communities of families can cooperate in order to self-organize childcare, whereas 'caring time' could be considered as a common. The possible risks of being drawn to monetary exchange will be discussed along the design phases and as part of the exploitation strategy of the project.

3. Online and offline childcare initiatives on time sharing and socializing childcare tasks

As part of WP1 activities, we collected and analyzed existing offline and online initiatives on time sharing and socializing tasks in Europe. The mapping exercise aims at providing a general picture of existing and past initiatives on time sharing and socializing tasks and to eventually derive a set of best practices and guidelines for the development of the Families_Share platform.

The analysis started with a survey, sent to all CityLabs partners, for collecting semi-structured data on existing initiatives on time sharing and socializing tasks. Each partners contributed by listing current and past initiatives taking place in the CityLab region or nation, and reporting other initiatives or online applications.

The preliminary list collected through the online survey has been further expanded with additions from online search, reaching a total of 33 initiatives (see Table 1). For each initiative, the following characteristics have been identified:

i) the policy sector in which they are used;
ii) the type of resource exchanged within the initiative (e.g. services, goods, information, etc.);
iii) the target community (e.g. parents, neighborhoods, local communities, etc.);
iv) information about the role and strategy of the public authority in the project (i.e., private, public or mix);
v) information on the dimensions (childcare, community building and self-organization, see description below);
vi) information on the technology used (whether website or mobile app);
vii) the geographical area;
viii) a reference to the initiative website.

In order to focus the mapping analysis around the main concepts guiding Families_Share project, three dimensions have been identified and explored for each initiative:

- *Childcare*: this dimension includes all the initiatives that involve some sort of childcare activities ranging from after-school and vacation care, artistic, educational and recreational activities for children.
- *Community building*: this dimension covers initiatives that foster community building and networking among participants.
- *Self-organization*: this dimension includes the initiatives based on peer- to-peer-based activities.

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	Characteristics				Dimensions			Technology		Geographical area	Reference
	Policy sector	Type of resource	Target community	Type of strategy	Childcare	Community building	Self organization	Website	App		
AuPair	Childcare	Services	Parents	Private	●			✓		Worldwide	www.aupair.com
Benapp	Local network	Services and goods	Local communities	Private	●		●		✓	Italy	www.benapp.it
Bsit	Childcare	Information	Parents	Private	●				✓	Central/ Northern Europe	bsit.com/en/parent
Budapest Downtown Community Space	Childcare	Information	Parents	Public	●			✓		Hungary	belvarosikozossegiter.hu
Care.com	Shared social economy	Service	Parent	Private	●			✓		Worldwide	www.care.com
Childcare.co.uk	Childcare	Information	Parents	Private	●			✓		UK	www.childcare.co.uk
Cokido	Childcare	Services	Parents	Private	●	●	●	✓		Central/ Northern Europe	www.cokido.org
De Gezinsbond	Childcare	Information	Parents	Mix	●			✓		Central/ Northern Europe	www.gezinsbond.be/en
Dorpspunt Beveren	Local network	Services	Local community	Private		●	●	✓		Central/ Northern Europe	www.facebook.com/groups/Dorpspuntinbeveren/about
Echo	Skill sharing	Services and goods	General audience	Private		●		✓	✓	UK	economyofhours.com
Familink	Childcare	Information	Parents	Private	●	●			✓	Italy	i3.fbk.eu/projects/mobile-territorial-lab
Flavr	Food sharing	Goods (Food)	Neighbourhood	Private		●	●	✓	✓	Central/ Northern Europe	flavr.be
Flüchtlinge Willkommen heißen	Shared social economy	Information	Refugees	Private		●		✓		Worldwide	www.refugees-welcome.net
Gimm-e	Childcare	Information	Parents	Private	●	●		✓		Central/ Northern Europe	welcome.gimme.eu
HelloMom	Childcare	Services	Parents	Private	●	●		✓		Hungary	helloanyu.hu
Hoplr	Local network	Information	Neighbourhood	Private		●	●	✓		Central/ Northern Europe	www.hoplr.com
Jojob	Shared social economy	Goods (carpooling)	General audience	Private			●		✓	Italy	www.jojob.it
Komae	Childcare	Services	Parents	Private	●			✓	✓	Worldwide	www.mykomae.com
Lets	Shared social economy	Services nd goods	General audience	Mix			●	✓		Central/ Northern Europe	www.letsvlaanderen.be
lisminut	Shared social economy	Services	Local communities	Private	●		●	✓		Central/ Northern Europe	listminut.be/nl
Parc	Childcare	Information	Parents	Private	●	●			✓	Central/ Northern Europe	www.parcapp.be/parent-community-en.html
Peerby	Shared social economy	Services and goods	Local communities	Mix		●	●	✓	✓	Central/ Northern Europe	www.peerby.com
Playday	Childcare	Information	Parents	Private	●			✓	✓	Belgium	www.playday.be
Repair Café	Skill sharing	Services and goods	Local communities	Private			●	✓		Worldwide	repaircafe.org
Share your meal	Shared social economy	Goods	General audience	Private			●	✓		USA	www.shareyourmeal.net
Shared Earth	Skill sharing	Goods	General audience	Private		●	●	✓		USA	www.sharedearth.com
Sharetribe	Childcare	Services	Parents (single)	Mix	●		●	✓		Central/ Northern Europe	www.sharetribe.com
SocialStreet	Shared social economy	Services and goods	Neighbourhood	Mix		●	●	✓		Italy	www.socialstreet.it
Thuis afgehaald	Food sharing	Goods (Food)	Neighbourhood	Mix		●	●	✓		Worldwide	www.thuisafgehaald.be or shareyourmeal.net
Timerepublik	Skill sharing	Services	General audience	Private		●		✓		Worldwide	timerepublik.com
Toolsharing	Shared social economy	Goods	General audience	Private			●	✓		Italy	www.toolssharing.com
WeGov	Local network	Information	Citizens	Mix		●		✓		Central/ Northern Europe	www.wegov-project.eu
Yoopies	Childcare	Services	Parents	Private	●		●	✓		Central/ Northern Europe	yoopies.com

Table 1. Analysis of initiatives on time-sharing and socializing activities.

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3.1. Analysis of initiatives

In the following, we discuss the main results of the mapping exercise, presenting summary graphs of the phenomenon investigated. The section ends with the presentation and the discussion of a number of best practices derived from the mapping activity, that will be taken into account in the design process.

3.1.1 Analysis of geographical areas

The 33 initiatives can be divided into six territorial groups: while four of them are single states (i.e. Italy, Hungary, United Kingdom, and USA), the other two aggregate more states (i.e. the item "Central/Northern Europe" that includes The Netherlands, France, Luxembourg and Germany; and the item "Worldwide" that includes platforms that are commonly used in European and non-European countries, such as the USA and Russia).

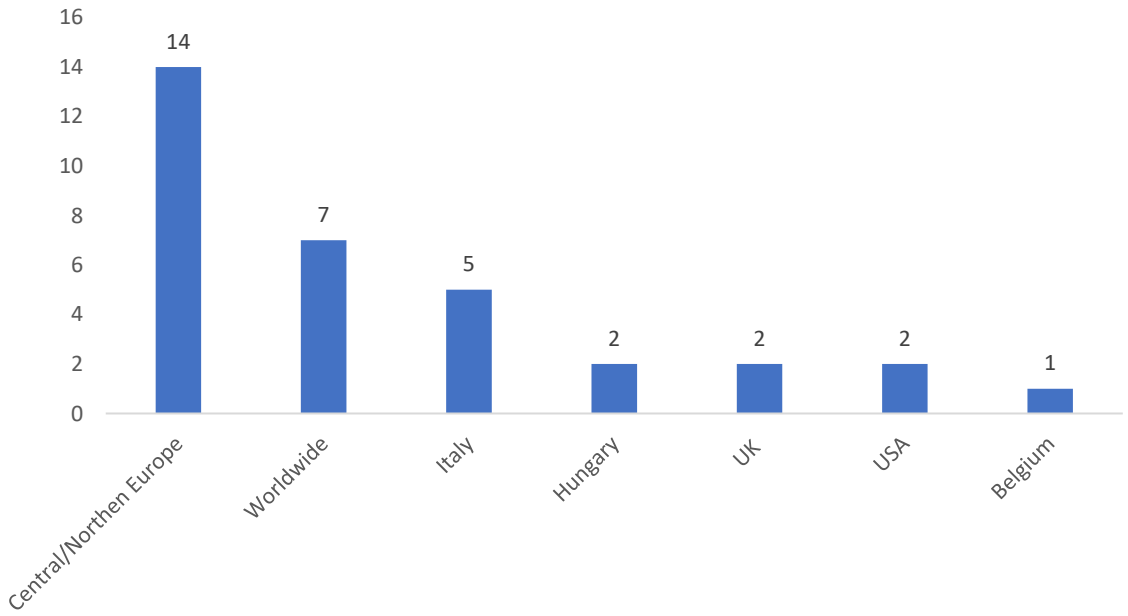

Figure. 5. Geographical Areas of the Platforms

Figure 5 presents the geographical areas in which the platforms are located or in which they are more expanded. It shows that the platforms of social innovation mapped are mainly located in Northern and Central Europe, in particular in the territory of Flanders and, more generally, of Belgium. Several platforms are also spread all over the world. Two examples are farsighted: *Repair Cafè* and *Timerepublik*. The former was born in Amsterdam, and after attracting great success in this city and in the Netherlands, it expanded two years later in other European countries. The latter was founded, in 2012, in Switzerland with the support of Italian and American groups and expands in the following years in 110 countries, including Brazil, Spain, France, Germany, Denmark and Russia.

3.1.2. Policy sector analysis

Even if all the platforms can be included in the macro-area of the sharing economy, five specific sectors can be identified, that are:

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- *Childcare*: platforms for sharing and mutual aid for childcare, after-school activities, babysitting etc. Some examples are *HelloMom*, and *PlayDay*;
- *Shared Social Economy*: platforms for the sharing of services or goods, usually for a fee. Some examples are *Fluchtlinge Willkommen heißen* and *PeerBy*;
- *Skill Sharing*: platforms for sharing a specific skill or a specific service. An example is *Shared Earth;*
- *Local Network*: platforms created to strengthen the sense of community and mutual trust. Examples are *Dorpspunt Beveren*, *Benapp* and *Hoplr*.
- *Food Sharing*: platforms created for the purchase / sale of food. Example are *Share Your Meal* and *Flavr*.

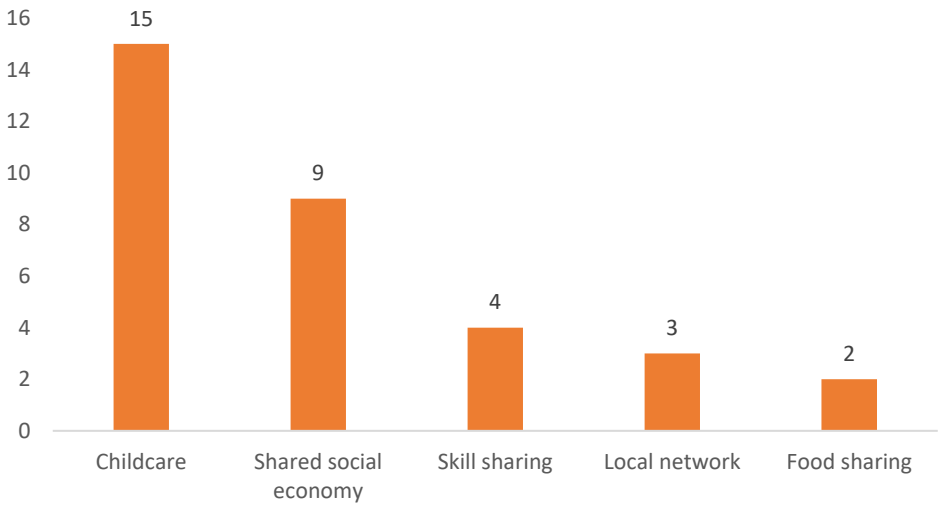

Figure 6. Thematic areas of the initiatives

Figures 6 depicts the 15 social platforms that are targeted in the childcare sector (such as *Bsit* and *Gimm-e*). In addition, 6 other platforms adopt a sharing economy model (such as *Care.com*, for the sale of services, and *Toolsharing*, for the sharing of tools).

3.1.3. Analysis of the role of the government

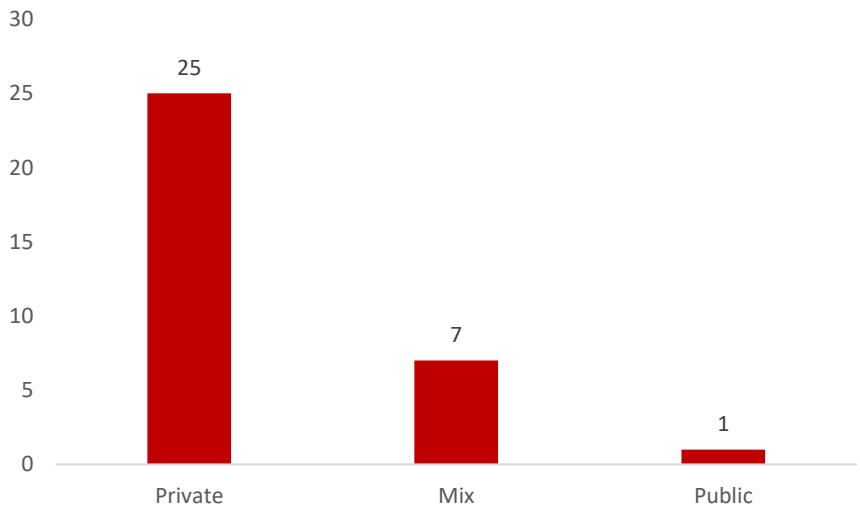

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Figure 7. The strategy adopted

As shown in figure 8, 25 initiatives were born and were evolved with private intervention alone. Our analysis, in fact, showed that the platforms are born during the financial crisis with the birth of numerous co-production initiatives in which the citizens of the communities have tried to satisfy their needs through the sharing of knowledge, goods and services. Despite this, there are also social platforms born out of a public initiative, for example *Budapest Downtown Community Space* in Hungary, a program that offers services to families (babysitting, baby counselling, etc.) and that stems from the desire of the state to want to help its citizens in activities often only given private initiative.

However, existing public offerings are scarce in many European Member States, while private sector organizations providing high quality childcare solutions too often fail to meet the needs of families, especially those of low-income families. Among the analysed platforms, neither have emerged some that are born from a private initiative, are supported by the state, such as *De Gezinsbond*.

3.1.4. Technology analysis

Figure 8 shows the platforms with respect the technology used, namely: website or dedicated application. Many initiatives use two or more technologies and also exploits other communication channels (e.g. social networks). The *Budapest Downtown Community Space* is a particular case, since uses *Skype* and telephone in order to put its users in contact.

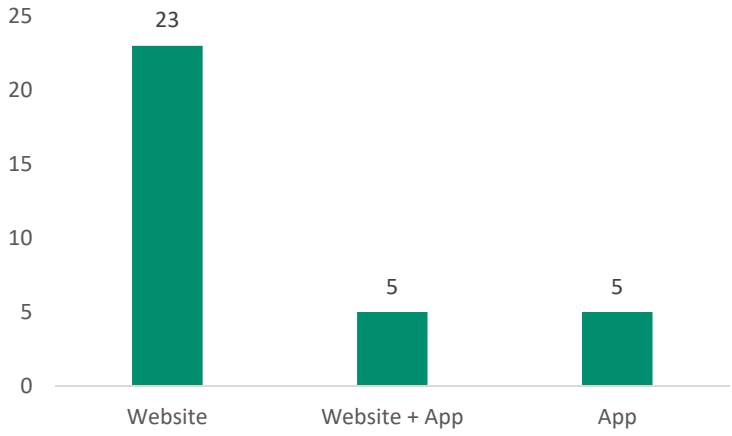

Figure 8. Technology used in the platforms

The figure illustrates not only that website is the most used digital channel, but also that mobile applications are often used in combination with online websites.

3.2. Dimension analysis

Figure 9 shows a diagram of the distribution of the initiatives in the three dimensions (that is, *childcare*, *community support* and *self organization*). Only one application, CoKido, presents all three characteristics. On one hand, many applications have features for supporting community building and self-organization, but do not focus on childcare (e.g. *Peerby, Social Street*). On the other hand, initiatives for childcare provides information and services without strongly supporting peer-to-peer-based activities (e.g. *Yoopie, Familink*) or provide bottom-up activities without fostering networking between their participants (e.g. *Benapp*).

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A focused analysis of the initiatives close to the center of the diagram has been conducted to better understand good practices and strategies for guiding the development of Families_Share platform. These applications are *Familink, Yoopies* and *Peerby* and *Cokido.*

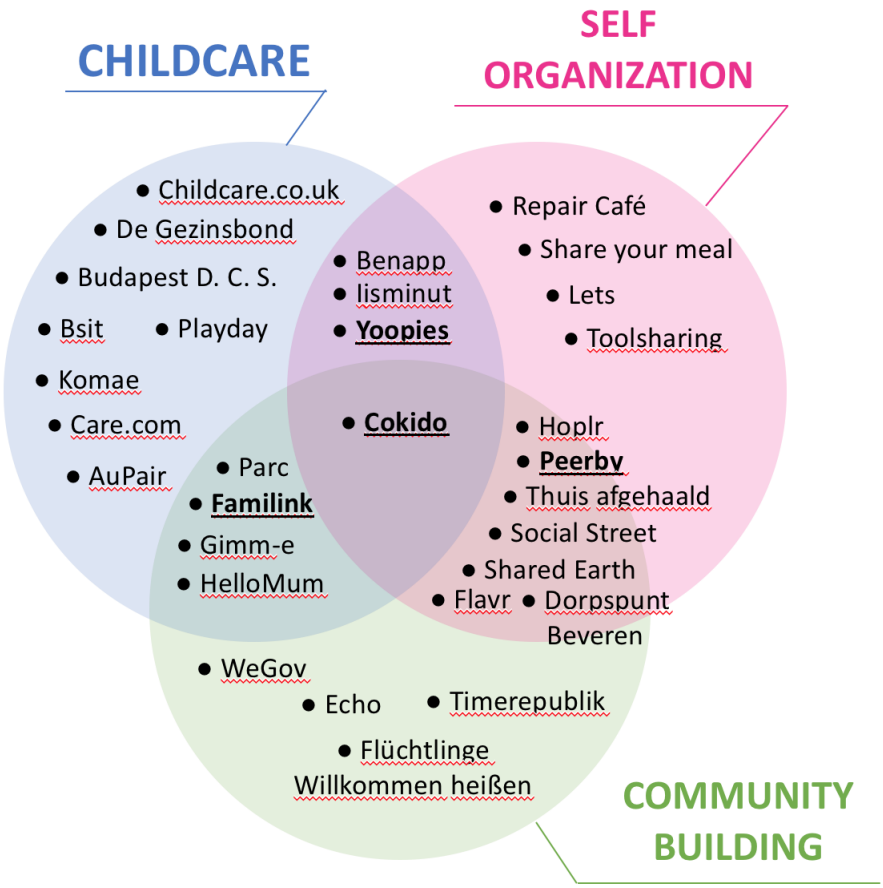

Figure. 9. Venn diagram showing initiatives in the three dimensions. Initiatives underlined were analysed in detail.

3.2.1.Familink experience

Set up in 2013, the Familink project aimed to provide an instrument to connect parents with 0-10 years children by allowing them to be informed on the social events for families organized within the territory. Familink is a mobile application to explore the opportunities for the free time designed with and for families. Users can share information about leisure activities and local opportunities for children and families, can be in touch with the surrounding community of families and can become an active part of their territory (Figure 10).

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Figure 10. Some snapshots of the Familink mobile application

Familink aims at developing a context where parents living in the same geographical area can exchange information and develop new relationships. Peer and community support is expected to enhance parenting at different levels: parents can offer experiential knowledge, practical and relational support and can be an opportunity to share problems and ideas. Even if a growing number of opportunities in the prenatal phase is given to parents, little support is given to parents after the birth of children concerning networking with other parents. The research in this area aims at defining and testing mechanisms that can support parents in extending their network –through location-sharing functions, personalized recommendations based on users profile -, the factors that can support the development of trust between parents, the gender issues related to the acceptance and usage of social networking services targeting parents. The motivation behind the development of Familink lies actually in the recognition that the transition to parenthood poses several challenges to parents of young children in managing and balancing work and family responsibilities. In the past parents have always relied on other family members and neighbors for dealing with these challenges and for receiving social support. Yet, the support that families can receive by the network of peers is becoming more and more important as society evolves and ICT-based services are becoming ubiquitous and increasingly used. Peers, i.e. other parents of young children, can be a valuable source of informational, material and emotional support.

Even if parents of young children constitute a large portion of society and have pressing and urgent needs, surprisingly there are not many ICT-based services targeted to them, nor a large body of research investigating their needs and designing and evaluating solutions for them.

The main features of the service are:

- *Personalized exploration:* Familink gives a quick, personalized and contextualized access to relevant information. In Familink contents are, content is georeferenced so that users can explore contents according to their position, categorized according to several contextual information (such as indoor/outdoor location) allowing the user to filter events and places according to the better contextual conditions (e.g. weather) tagged with personal relevant data to better fit individual preferences, pattern or background (e.g. the age of the children or the user's routines).
- *Sharing experiences*: Familink leverages on the active participation of a local community to support the exploration and discovery of opportunities and to promote the discussion on personal experiences. Contents can be inserted and discussed by users that can share their experiences with others by posting pictures and comments related to events and places.

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- *Hybrid community engagement and face-to-face interaction*: Familink aims at promoting social contact through event discovery and discussion. Location-based mechanisms will be implemented to connect people during events and to support members in coordinating ad hoc encounters.

3.2.2. Yoopies experience

Founded in France in 2012, Yoopies is a platform aimed to support childcare activities taking advantage of the network of friends, acquaintances, family members and work colleagues. In 2014 additional services in the field of child care were added, such as: tutoring activities, home care, pet-sitting, cleaning services, etc. Yoopies is currently activated in other nine European countries - that are Italy, Spain, Germany, Belgium, Switzerland, the Netherlands, Austria, Portugal and the United Kingdom - and in each of them it is available via website. An application for mobile phones, instead, is used in France.

This platform matches peer suppliers with consumers, giving indications on costs. The procedure to register in the platform is the same for both the suppliers and the consumers. The first step to enter within the Yoopies community is to register to the platform through the Facebook account or by providing an email account. After the login process, suppliers and consumers have to insert their date of birth, telephone number and profile picture. Suppliers have also to include a personal description, including their skills, the tasks they are able to perform, the years of experience they have in specific activities and, where possible, their work references.

Once the first search is performed, suppliers and consumers are required to register on the platform. After logging in, they can introduce a service request, which they can also of course book, after registering on the platform and paying the registration fee.

Consumers can also simulate their budget, and in order to do that they have to indicate:

- The type of service: occasional (i.e. only one day), or regular (i.e. every week);
- The frequency of the service: the number of hours per week, also with reference to occasional services;
- The number and age of children;
- The family income bracket.

In searching a service, consumers can use filters and then search for the service they are interested in. Several parameters can be used such as geographical distance, price, reviews issued by other users and the date of publication. The criteria that consumers can use to perform their research are the following ones:

Profile Criteria	Search for: with picture, with reviews, active in the last three months, childcarer verified profile, "Coup de coeur" profiles (registered auto-entrepeneurs)
Personal information	Gender, level of education, mother tongue, other spoken languages
Experience	years of experience
Other	driving license, own car, smoker/non-smoker, first-ald diploma
Tasks	care of disabled children, event planning, cooking, ironing, help with homework cleaning
Tariff	price per hour

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After paying the registration fee, consumers can insert supplier contact details, such as phone numbers and reviews. On the contrary, consumers that have not paid the subscription cannot see the same information, but they can only see the evaluation, the number of reviews that the provider has received, the availability, the years of experience and the services offered.

After signing up, consumers can make a reservation for any service by clicking on the booking button that is present on the profile page of each supplier. Then also have to complete the weekly planning, or define the schedules related to the requested childcare service. Suppliers can look for vacancies available according to various criteria, such as service type and location, and can also filter such searches.

Four optional services are also provided for both consumers and suppliers, that are:

- Verification of identity documents: on request, the Yoopies team verifies the authenticity and the truthfulness of the documents provided by the suppliers (such as the identity card and the passport). These documents must be scanned and will be checked manually to check that there are no discrepancies with the information provided during registration and subscription. Subsequently, a third party carries out a further check called "Know your customer". This procedure is used to identify other potential risk factors.
- Qualification check: during this phase the team is responsible for checking the veracity of the qualifications provided by suppliers, such as a first aid diploma.
- Criminal record check: suppliers can send a copy of their criminal record to show that they have not been involved in any criminal activity.
- Behavioral test: if consumers ask the platform for this, a behavioural test must be carried out on suppliers.

All the services are free, except for the criminal record check that have a cost of four euros.

Finally, a part of the platform is devoted to provide information to platform users. It is divided in the six sections: 1. How does Yoopies work? 2. Pay and declare your baby-sitter 3. Our mobile application (available only in France) 4. My financial support 5. All you need to know about your children 6. Our other services

In the second section, for example, the following information are present: taxes, rules and legal advice applicable; how and why to declare the services performed by a baby-sitter; which type of contract would be preferable to choose; and the benefits for consumers and suppliers who enjoy the status of self-entrepreneurs. Moreover, FAQ section explains where to find the expense and income reports and how to get financial support from the government for childcare services. It also explains the difference between the types of child =care (such as: parental help, baby-sitters or au pairs). Its aim is therefore to help consumers in understanding what each service is about.

3.2.3. Putting the users at the centre of the platform: The Peerby experience

Peerby was founded in 2012 in the Netherlands, and it was following launched in other European countries, such as in France, United Kingdom, Belgium and in Germany. Its sharing services are also currently available in seven American cities, including New York and San Francisco. Through an application and a website, *Peerby* connects peer suppliers with peer consumers: the former offer to rent or share certain items that the latter require. This application works on a neighborhood basis, and it has been estimated that about 20 people are needed to create sufficient critical mass and to allow sharing to succeed within a particular neighborhood.

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The *Peerby* experience was selected due to the frequent surveys organized within the platform in order to investigate user satisfaction level and possible problems they occur in using it. In order to better understand how users satisfaction level and the problems the users occurred are investigated and subsequently taken into consideration by the platform, several statistics extrapolated from internal survey are following presented.

Firstly, the vast majority of members are very satisfied or satisfied with their experience: almost a fifth of 17.9% of suppliers and over a quarter 26.9% of consumers declare to be very satisfied with the service, while a small minority of users claimed to be very dissatisfied or dissatisfied with the service (about 10.7% of suppliers and about 3.8% of consumers). In general, the 64.3% of the suppliers and the 73.2% of the consumers are satisfied or very satisfied in using the platform.

Secondly, a survey was also carried out to find out if users have encountered problems during the use of the platform and, if they have found them, which are the problems related to the use of the platform, as well as those related to the transactions, to the product, or problems related to the price. About 50% of users declared to have face these problems at least once. The main problems encountered, as shown in Figure 11, are the following: sudden changes in article prices (50%), problems related to the description of the article (50%), or the quality of the article itself (50%). Other problems encountered include: safety (38.4%), loss of data (34.5%) or cancellation of reservations (11.5%).

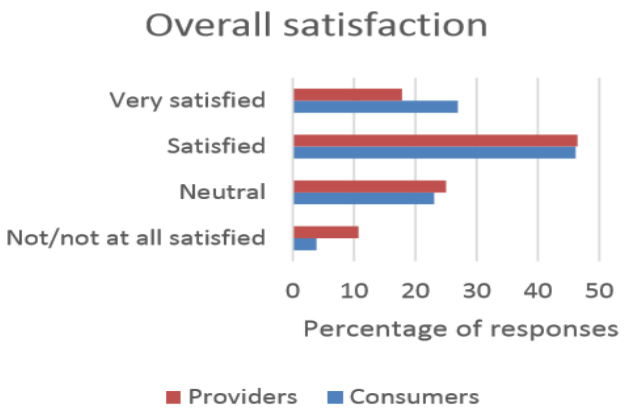

Figure 11. Users Satisfaction in Peerby

Finally, within Peerby is also possible to investigate if users are clear about what their rights and obligations are, regarding use of the platform. As emerged within an internal survey, about half of the users declare to be not aware of think they do not know, which are their obligations and rights. About 50% of the consumers do not know who is responsible when something does not work or does not work properly, while the 40% of them does not properly know their right to compensation or reimbursement, if some problem is present In addition, almost 40% of suppliers declared that they were not sure about their responsibilities and their rights, while about a third indicated that they knew about it.

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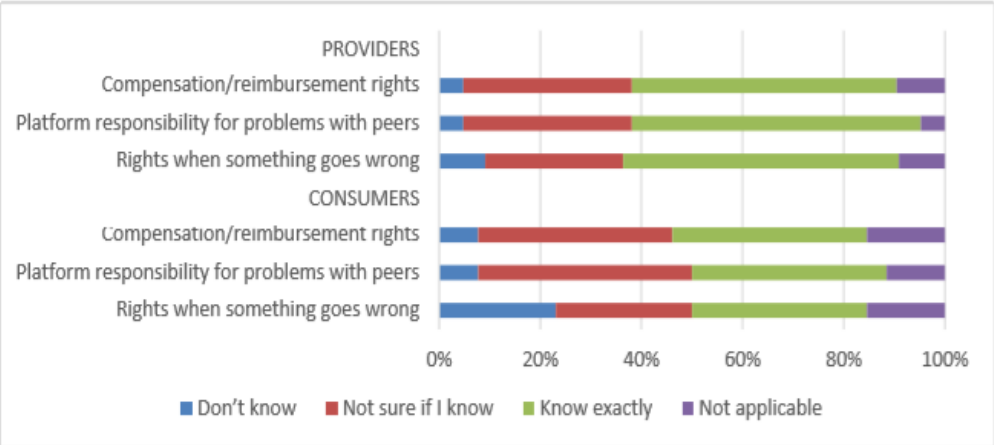

Figure 12: Knowledge of rights and obligations of providers and consumers in Peerby

3.2.3 The Cokido experience

Cokido has a special status in our best practice since it is the basis of which the Families_Share platform is designed and it is the approach taken in the Kortrijk CityLab. It is a solidary out-of-school care co-organized by the parents, grandparents & family members.

The mission of De Stuyverij and Cokido is to find more balance between their work and life and to rekindle people's desire to live and work together. Through co-creation, co-working and co-entrepreneurship. De Stuyverij inspires, connects and empowers young and old, local governments and social networks across projects, so that overall cohesion can emerge.
Cokido offers a bottom-up solution for parents who share childcare services. Cokido supports parents in co-organizing care during vacation periods through a turn roll model (1 to 5 days) using public spaces to host children. Cokido started from an offline grassroots basis and was built on self-organization of parents and other persons, such as grandparents, family and friends that organize off-school childcare together and make arrangement to alternately take care of the children during holidays and/or after school. Cokido is facilitating approximately 25 groups in 13 cities and towns (Ghent, Antwerp, Kortrijk, small villages). And alsoAlso involved 1a company as a pioneer. Overall more than 750 families are involved.

Cokido is grounded on the concept of "co-playing"," that has been used for a long time by parents that used their social network for organizing childcare during holidays.
Cokido It has been created starting from the recognition of the need for an accessible, low profile, cheap?, safe and qualitative off-school childcare to be provided in their own neighbourhood. There is a lack of childcare, especially during rush periods. Summer camps are generally expensive and are booked out quickly, beside, for some families, childcare is not accessible, such as for low-income families or families with small children. Moreover, many parents would like to be more involved in the care and support of their children during school holidays.

The social benefit of an informal, collaborative management of childcare is expected to have different social benefits, in particular: i) it allows to organize childcare in a familiar and informal context (ii) shared and practical organization of childcare decreases stress, (iii) parental involvement in childcare encourages the creation of new friendships and new contacts (networking/cohesion), (iv) shared childcare guarantees quality time for child and parents.

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Also at the community level, Cokido has several benefits: it is cheap but also guarantees qualitative childcare and increases the resilience and the well-being of the local community. Moreover, since Cokido exploit public buildings as a school, it is expected to have several benefits also from the school-side, namely: no empty (school) buildings during school holidays, pupils can spend their holidays in a trusted environment with their school friends, a positive influence on the engagement of the parents towards the school, and finally a better integration of the school in the neighbourhood and community.

After an initial phase of investigation and exploration, De Stuyverij decided to make co-playing easier and more accessible through the development of a website with tips & tricks, examples of contracts, experiences of other groups, the development of a free web application with smart tools that facilitates the management of a Cokido group

Cokido is grounded on a number of pillars, that guarantee trusted relationships among members and the quality of the childcare delivered. We present the main characteristics of Cokido in the following:

- Concerning *membership*, Cokido guarantees safe and supported methods that includes insurances
    - Cokidos insurance policy covers buildings and children, parents, volunteers
    - It is a collective choice by the group, not imposed by individuals
- Moreover, Cokido facilitates *knowledge sharing and inspiration sharing* in between groups, and offers a helpdesk for a good kick-off of the group and helping out with conflicts or eventual problems (partnership with knowledge centre Odisee).
- *Safety management* is crucial when dealing with childcare. Cokido requires that at least 2 parents are present at the same time for co-playing. There is always a form of social control and someone is always available to stay with the children. But what if there are not enough parents? Cokido encourage groups to involve babysitters, nannies, and volunteers… through established institutions that already insure babysitters. But Cokido should always be grounded on parents participation, so it is important that babysitter, nanny or volunteer always work together with a co-playing parent.
- From the *legal perspective*, as co-playing is organized by the parents themselves and free of charge, this system does not have to meet any legislation. Of course, the safety of the children and their parents is a crucial issue for Cokido, hence the involvement of local authorities is crucial to make Cokido work.

Cokido supports parents in self-organizing by guiding them throughout a number of steps (Table 2).

Launch the initiative in your own circle	Invite your friends, neighbors, acquaintances or colleagues to discuss the establishment of a Cokido group.
Unite the first enthusiasts	Discuss each other when, where and with whom you want to play. Prepare a list of potential participants. If necessary, make a flyer to distribute at school or in the neighborhood store.
Contact the location	Contact the owner of the location and discuss the insurance. You can find out how to prepare this in the start-up guide.

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Make internal appointments	Fill in the agenda as much as possible in advance and discuss this during a meeting. Use this opportunity to get to know participants better. Consultation about the agreements and the working method. In the start-up guide you will find a nice overview of the most important tasks. Divide these tasks over the core team.
Close the agenda	Once the final agenda has been drawn up, no children or parents can be added. Now you fill in the holes in the planning or view the latest practical arrangements.
Kick-off!	Come together again with all parents and children to get to know each other better during an informal apero moment or a BBQ, just before the real game starts.
Welcome!	The updating has started and runs automatically. Stay informed of the operation via the facebook group. Soon you can do so via our handy app.

Table 2. Cokido steps to guide parents creation and managemnt of self-organizing groups

Beside, Cokido guide and support parents by sharing best practices and documents that groups can use to self-organize, find new participants, create a shared agenda (Figure 13).

Figure 13. Cokido Agenda that can be used by groups as template to organize shared childcare

3.3. Best practices and lesson learned

The mapping exercise, the initiative comparison and the analysis of the most relevant platforms have allow the identification of a number of best practices and strategies for guiding the development of the Families_Share platform. The main lesson learned are summarized in the following:

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- ***Support hybrid community engagement and face-to-face interaction***. *Cokido* and *Familink* both allow the orchestration of offline and online interactions to support social collectives and to guarantee high level of trust among communities members.
- ***Support sharing at different levels***. Peer and community support is expected to enhance parenting at different levels: parents can not only collaborate and share their time for childcare activities, they can also offer experiential knowledge, practical and relational support, providing opportunities to share problems and ideas.
- ***Safety management is crucial when dealing with childcare***. As shown in *Yoopies* and *Cokido*, the platform should provide different and reliable tools to increase participants trust in the service. These tools include: clear indication on which kind of information should be input, the verification of the users profile and of the information provided in the system, clear information about insurance and legal aspects.
- ***Local authority involvement***. As the *Cokido* case demonstrates, it is crucial to inform and involve the local government or authorities in the early phase of setting up childcare initiatives. Public entities will actually play an active role to foster Families_Share platform adoption, to provide support for legal and insurance issues and to connect with community of parents. It is therefore important to investigate with them at the early stage of the co-design process, the role they will play within the process, in particular in terms of (i) connection with communities of parents, (ii) support in managing insurance issues, and (iii) support for piloting the solutions.
- ***Childcare and social control***. Beside having local authorities support and insurance protection, safety can also be managed through social control. Following the experience of *Cokido*, at least two parents (or other persons participating in the trust circle such as grandparent and baby-sitters) should be present at the same time when groups of children are involved in order to guarantee the quality of the childcare service and the participants' safety.
- ***Personalized exploration of local resources***. Following *Familink* example, it is important that Families_Share platform supports the exploration of provides offering a quick, personalized and contextualized access to relevant information, in particular the resources available in a given geographic area.
- ***Community management and community growth***. Launching a community may be hard and a proper strategy should be foreseen. Community management might support communities in case of conflicts (as in the case of *Cokido*), helping parents in connecting with other parents and finding support of local authorities to manage legal aspects.
- ***Feedbacks from community members***. As demonstrated in the *Peerby* platform, the community creation and management process can benefit from quick means of feedbacks collection from users. This will support the community members in assessing user satisfaction and in discovering issues related to the participation in childcare activities.

4. Needs analysis and co-design of the Families_Share services

The goal of Families_Share is to fully exploit the potential of already available ICT tools- such as the experiences and platform described in Section 3, as well as the knowledge and networks of communities and local organizations, to co-create and deploy innovative web-based services and to support innovation in social relations and individual behaviours fostering the socialisation of care and leisure time—particularly with regard to work/life balance needs.

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The conceptual framework presented above, together with the best practices elicited in the mapping exercise as well as the special positioning of the Cokido platform as the basis of Kortrijk CityLab have driven our approach. Still, the commitment to co-design both the approach and the technological platform required to engage and involves networks of communities and local organizations in order to first elicit their needs and then co-design the services.

In this section, we offer a description of activities aimed at instantiating the general approach at the different local sites, which based on the methodological framework described above (Figure 16). We first describe activities related to the set-up pf tools for sharing knowledge among the CityLabs, then the local implementations of the needs analysis and co-design activities in the CityLabs, reporting the steps and process followed as well the results gathered throughout the process of stakeholders and communities engagement. Figure 14 illustrates the process as it has been implemented so far.

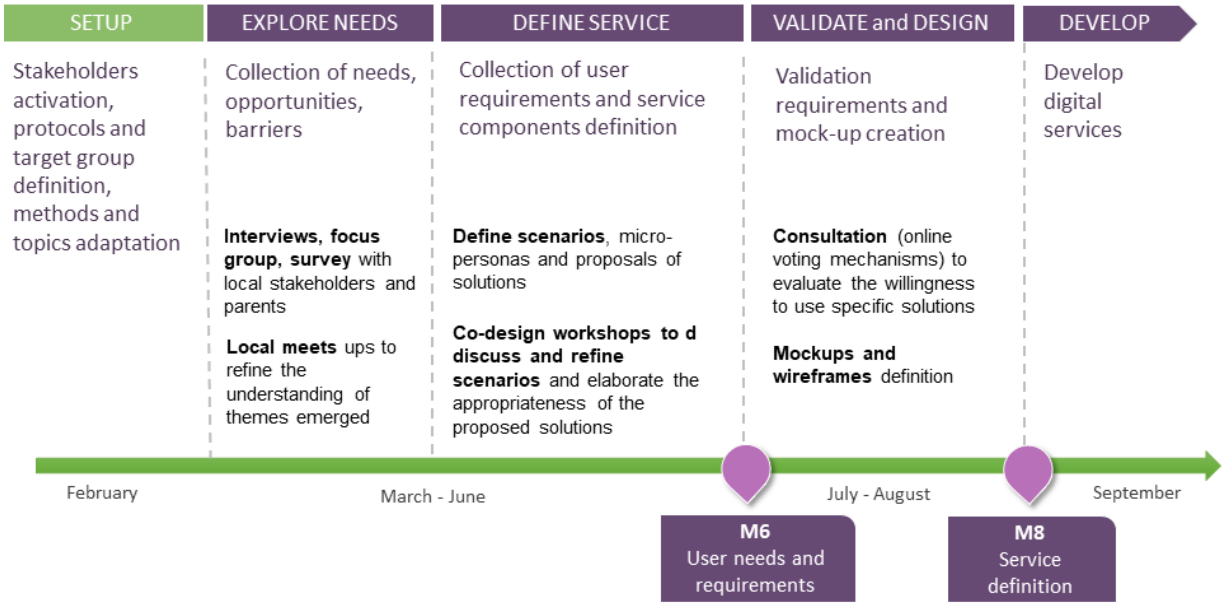

Figure 14. The process of stakeholders engagement and critical reflection based on the idea of creating a strong partnership that involves local communities in the whole research process.

4.1. Setting-up the research infrastructure for CityLabs interventions

One of the main challenges of the project has been to orchestrate the diverse contributions and multiple perspectives brought in by the several actors and stakeholders not only at the local level but also, considering the international dimension brought by the CityLabs involved.

A Team Drive[1] has been set up in order to provide Project Partners with a shared repository of documents and with collaboration tools to support the early sharing of insights and results. Team Drive is very similar to a Google Drive for sharing folders but with a more sophisticated set of policies for access. For Families_Share, the Team Drive was meant to maintain shared working documents (including working versions of the deliverables), facilitate the sharing of knowledge between partners, and maintain control over the KPI progress. The choice of Team Drive was motivated by the fact that all the project members could have an

[1] https://gsuite.google.com/learning-center/products/drive/get-started-team-drive/#!/

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“edit” access which grants the possibility of creating, uploading, viewing, commenting, sharing and editing documents and folders but not to remove them (for unintended changes in the documents, there is a limited support of a versioning system like the standard Google Drive).

A shared record of activities was created to keep track of the local activities conducted. The document allowed each partner to insert activities sharing information about: the type of intervention (meeting, focus group, etc), goals of the action, number of stakeholders involved and link to the description of results for each action (see Figure 15).

City Lab	Type	Short description	Date	Number of stakeholders involved	Link to description/results
Bologna	Meeting with ASP (Local Authority	Presentation of Cokido/families_share pro	02.02.2018	2	
Bologna	Meeting with MomoBanca del Tempo (TimeBanking)	Presentation of Cokido/families_share pro	02.02.2018	2	
Bologna	Meeting with MondoDonna (Local Association)	Presentation of Cokido/families_share pro	13.03.2018	4	
Trento	Meeting with organizations of the Family Disrict	Presentation of Families_share, first collection of feedback, definition of next steps	27.02.2018	10	https://docs.google.com/document/d/10eljeANeUZxPaql2NIAY7ilahYQ-jJ3dUgxgjOa7GYc/edit#
Trento	Focus Group with organizations of the family District	FG with representatives of organizations belonging to the Family District	27.03.2018	6	https://docs.google.com/document/d/1eGm7ueuJnw8iGGxkTkfMkXYgth0N97fhMXXAP_OfwGg/edit#
Hamburg Harburg	Meeting with Municipality of district	Presentation of Families_share, first collection of feedback and relevant stakeholders	21.02.2018	4	
Hamburg Harburg	Interviews with stakeholders and organizations	interviews on Task 1.2 with local stakeholders	05. - 06.04.2018	4	https://drive.google.com/drive/u/3/folders/136li3_zoF37Whmqzbwt5R6U527T2-aZz
Venice	Focus Group with school coordinators and teachers	presentation of the project and discussion about opportunities, barries, past experiences, etc.	4.04.2018	6	https://drive.google.com/drive/u/1/folders/1T4I7kTW7znNEZBEzBFJ5GPq2c9VCZoYQ
Kortrijk	meeting with De Gezinsbond (Family Association)	Presentation of Cokido and discussing possible ways of collaborating	23/1/2018	4	

Figure 15. A screenshot of the shared record of to keep track of the activities conducted in the CityLabs.

A document aimed at recording all the stakeholders engaged was used to keep track not only of the number of stakeholders but also to monitor the gender involvement and other aspects such as the familiarity with technology, the income and the type of contract, in order to assess and eventually improve the inclusivity of the CityLabs approach (Figure 16).

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Gender	Type of stakeholder	Age	Description of s	Low Digital Lite	Low income	Precarious cont	Migrant
Female	ONG Representative	around 25	Representative o	N	NA	NA	N
Female	Local Government Representati	around 55	Representative o	N	NA	NA	N
Female	Local Government Representati	around 55	Representative o	N	NA	NA	N
Male	ONG Representative	around 25	Representative o	N	NA	NA	N
Female	ONG Representative	around 40	Representative o	N	NA	NA	N
Female	ONG Representative	around 40	Representative o	N	NA	NA	N
Female	ONG Representative	around 40	Representative o	N	NA	NA	N
Female	Parent		Parent participati	N	N	Y	N
Female	Parent		Parent participati	N	Y		N
Female	Parent	around 30	Parent participati	N	Y		N
Female	Parent	around 40	Parent participati	N	N		Y
Female	Parent	around 40	Parent participati	N	Y	Y	N
Male	Parent	around 30	Parent participati	N	N		Y
Female	Parent	around 20	Parent participati	N	N		Y
Female	Parent	around 50	Parent participati	N	Y	Y	Y
Male	Parent	around 20	Parent participati	N	Y		N
Male	Parent	around 30	Parent participati	N	Y		N
Male	Parent		Parent participati	N	Y	Y	Y

Figure 16. A screenshot of the shared record of stakeholders involved.

4.1.1. Guidelines for collecting and sharing data

To provide guidance to all partners on the process of data collection an handbook was created that describes how to collect personal information while sharing only anonymized data.

The process, described below, is meant to give guidance to the partners to (1) record personal information about stakeholders involved; (2) share some of these information with other Partners in an anonymized way; (3) share data about the activities conducted in each CityLab. See Table 3 below.

Goal	Tracking Tool	Type of data	Where of store
Collection of personal information about stakeholders involved	For each CityLab, partners will collect and store personal information using a common Template called "Internal Record of stakeholder involved".	Personal information about stakeholders involved (name, etc)	This file should be kept confidential and stored to a private database maintained by the referring partners on his own responsibility.
Sharing of anonymized data about stakeholders with other Partners	Starting from the "Internal Record of Stakeholder involved", each Partners will regularly copy part of the information on a shared file called "Shared Record of Stakeholders Involved"	Only anonymized data will be shared among partners.	This file is shared among Partners and stored on the Team Drive.
Sharing data of the activities related to stakeholders engagement with other partners	Partners will update a shared file called "Shared Record of engagement activities", in order to maintain a shared record of the activities of stakeholders'	Only anonymized data will be shared among partners.	This file is shared among Partners and stored on the Team Drive.

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	engagement in order to facilitate KPI accountability.		

Table 3. Guidelines for collecting and sharing data

The entire handbook is reported in the Appendixes 2.

4.1.2. Defining a shared protocol for bottom-up identification of the stakeholders needs

In order to guide the identification of needs and barriers and the stakeholders engagement in the CityLab, a shared protocol to be instantiated at the local level has been negotiated and defined. The protocol had the main goal of providing guidance to Project Partners and aligning CityLabs interventions in order to collect data at the local level that can be then easily compared and composed at the international level in order to drive the decisions related to the functionalities to be activated in the Families_Share platform.

Sharing a common co-design approach, in the form of a set of adaptable dimensions/themes and common tools, was aimed at guaranteeing the coherence and the comparability of findings across the different CityLabs and at the same time providing enough flexibility to accommodate the diversity of the different situations in which the exploration took place. Indeed, the different CityLabs differ by the (i) stakeholders involved and their organizational structure, (ii) the culture and values of the different target groups and (iii) the characteristics of the families involved.

A ”Protocol for bottom-up identification of the stakeholders needs” has been developed in order to provide guidance along 5 steps that each CityLab should follow to collect user needs and define requirements, we report them in the following (Table 4):

STEP	DESCRIPTION & ACTIVITIES
1° STEP | WHO? **Identify stakeholders and target groups to be involved**	The first step is to identify the full range of people and stakeholders who should be invited to participate in co-design depending on the goal and phase of the co-design process. Stakeholders are defined as: *“people or organizations who will be affected by the system and who have a direct or indirect influence on the system requirements*” . In Families_share, stakeholders[2] range from private and public organization to citizens that may volunteer sharing their competences within the initiative. Stakeholders might be divided in two broader categories that should be activated: - representatives of formal and informal organizations (e.g. NGOs, Municipalities and local districts, formal and informal neighborhood associations, coordinators of

[2] The terms “user” and “stakeholder” are often confused in project management parlance as well as in co-design. For the sake of this document, we propose to use the term “stakeholder” to denote “anyone who could impact or be impacted by the project” (following the PMBok©). On the other hand, “users” refer to specific types of stakeholders defined by their relations to the system that is going to be designed: *primary users*, are those who actually use the system on a regular base; *secondary users,* those who may occasionally use the system or who use it through an intermediary; and *tertiary users* are those who will be affected by the use of the system or make decisions about its purchase (Abras, et al., 2004; Eason, 1987).

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	family networks, etc.) that will be the secondary users of the platform while playing an important role to foster its adoption, to provide support for legal and insurance issues, to connect with community of parents, etc. Once local authorities and organizations are involved, the second step is to reach the target group (families with children); - parents and other individuals participating in the ecosystem of childcare (volunteers, grandparents, baby-sitters, au pairs, etc.) that will be primary or secondary users of the platform. In families_Share, a crucial issue will be that of informing and involving the local government or authorities in the co-design activity. Beside informing the design of the platform, they will play an active role to foster Families_Share platform adoption, to provide support for legal and insurance issues, to connect with community of parents. It's therefore important to investigate with them at the early stage of the co-design process, the role they will play within the process, in particular in terms of (i) connection with communities of parents, (ii) support in managing insurance issues, (iii) support for piloting the solutions.
2 STEP | WHEN? **Plan stakeholders engagement and negotiate appropriate approach and methods to collaborate**	In order to plan the activities with stakeholders, a plan must be agreed with the CityLab stakeholders. According to the "3 levels of engagement in co-design" (consulting, advising, decision making – See APPENDIX 1), participants as well should be aware of the type of engagement they will be requested and a timetable should be discussed and agreed with them. The activities for stakeholders engagement should be documented in order to eventually provide a set of guidelines as part of the Families_Share results. As described above, it is crucial to involve and have the approval of local authorities and organizations as a first step of the co-design process. Moreover, we have to consider that the different perspectives of the stakeholders involved should be considered along the whole co-design process. Attention should be therefore paid to orchestrate the engagement of the different actors involved, maintaining a continuous confrontation between requirements and needs emerged at the different levels (organizational, policy-makers, parents).
3 STEP | WHAT? **Select and adapt dimensions provided at the Project level in order to explore opportunities and barriers as well as specific needs related to Families_Share**	Keeping a shared list of dimensions (see next Section) is important to reduce the risk that the co-design activities brought on in the various CityLab diverge too much given the constraints of time and effort of the project. Still of course, there is a need to adapt them to the specific context in which the investigation will be conducted. Dimensions are topics of interest – related to the dimensions identified and analysed in T1.1 (Theoretical framework) that can be used as they are, modified (possibly together with stakeholders of level 3 of engagement) in order to adapt (i) the phase of the co-design process (discover, define), (ii) the specificity of the CityLabs and (iii) the level of engagement of the stakeholders (advisory, ….). Finally, Some of the dimensions may not be explored because not relevant for a specific stakeholder, or not pertinent.
4 STEP | HOW?	There are different methods that can be exploited, and different methods can be foreseen with different target groups, according with their nationality, familiarity

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Negotiate with stakeholders the methods to use for collecting insights	with technology, etc. Before starting a user study the following aspects should be considered: goals of the project and type of technology to be designed: the focus can be on producing original solutions for research purposes or, on the other side, on producing quick solutions directed to achieve business goals, etc. (design a completely new class of devices? Re-design of an existing technology?) time and budget constraints technological constraints: which is the degree of freedom of the designer? Are there research interests of technological partners involved into the design process? Check a list of methods and the guidelines on how to use it in Families_Share (see Appendix 3 for a description of methods that can be used)
5 STEP | REPORT **Report and share findings using common templates**	To facilitate the sharing of knowledge gathered across the 7 CityLabs, a set of guidelines are proposed to collect field data, report them and share them with other partners: • Report and share findings using common templates that provide all Partners the possibility of early compare their local results with data collected in the other CityLabs. • Interviews, focus groups and workshops should be audio-recorded but partners are free to choose to transcribe or not interviews and focus groups. English translation of material is not required but the analysis should be done in English and, when relevant, English translation of quotations should be provided. • Permission to collect these data should be agreed by participants that should sign the consent form • Results collected through focus group, interviews, meetings can be reported in a concise form using common templates, in order to allow the sharing of insights among project partners. Common template and online reporting tools should be used to track interventions conducted, participants engaged in order to facilitate KPI accountability.

Table 4. Guidelines for collecting and sharing data

4.1.3. Shared topics and dimensions to explore needs, opportunities

As discussed above, a shared list of dimensions and topics has been agreed and shared among the CityLab partners to reduce the risk that the co-design activities brought on in the various CityLabs diverge too much given the constraints of time and effort of the project. Still, each CityLab was asked to adapt the topics of investigation to the peculiar target groups and to the specific context in which the investigation is conducted.

4.1.3.1 Institutional stakeholders

In the following Table (Table 5), we report the list of dimensions to be explored with institutional stakeholders (e.g. public authorities, NGO, companies, association, etc) that were meant to facilitate the early identification of opportunities perceived by stakeholders toward the initiative, similar experiences, possible

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synergies, risks perceived, strategies to support community engagement and trust among members, safety issues, strategies to involve families in co-design activities.

These topics were aimed at identifying local needs and bottom-up initiatives in relation to childcare, opportunities and barriers related to the introduction of peer-to-peer approaches to childcare. This task will ensure that the design of the upper layers of the platform and the selections of components will be based on bottom-up community requirements.

In Families_Share, stakeholders range from private and public organization to citizens that may volunteer sharing their competences within the initiative. Stakeholders might be divided in two broader categories that should activated, in particular: (i) formal and informal organizations (e.g. NGOs, Municipalities and districts, formal and informal neighborhood associations, coordinators of family networks, etc.) that will be secondary users platform while playing an important role to foster its adoption, to provide support for legal and insurance issues, to connect with community of parents, etc. Once local authorities and organizations are involved, the second step is to reach the target group (families with children); (ii) parents and other individuals participating in the ecosystem of childcare (volunteers, grandparents, baby-sitters, au pairs, etc.) that will be primary or secondary users of the platform.

DIMENSIONS/TOPICS TO BE EXPLORED	**GOALS**
Description of the stakeholders	Collect information about the organization: legal entity, private, public body, role, mission, employees, and other relevant information
Opportunities perceived in relation to Families_Share project	Identify which are the opportunities and potentialities for the stakeholders in relation *to the project: which may be the opportunities/benefits of introducing this new way of managing childcare? Which are the benefits for the organization/association/public body? Which may be the benefits for parents?*
Support among families and parent-to-parent support exchange: similar experiences and initiatives	Map and discuss previous experiences dealing with support among families and parent-to-parent support: were they already involved or did they organize similar experiences in the past? Mapping and evaluation of previous experiences
Co-production of childcare services: similar experiences and initiatives	Map and discuss previous experiences of co-production of childcare services: were they involved or did they organize initiatives to co-produce childcare services?
Key barriers perceived by the stakeholders	Identify barriers and risk the stakeholder foresee (i) for their organization and (ii) for parents potentially involved. Example: Risks for the organization: overlapping in terms of offer (business), incompatibility with organization/association/.. values and mission, legal issues..
Safety and trust in peer-to-peer exchange (Alignement Task 6.3)	Explore the risks and possible solutions for managing safety and trust in peer-to-peer exchange

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Target groups and communities of parents	Explore which are the target groups that may be relevant for Families_Share and the characteristics of the target group: socio-demographic characteristics (if available: ask for how communities work, their activities, how to connect with them)

Table 5. Dimensions and topics to be investigated through institutional stakeholders engagement

The suggested methods to conduct the exploration were individual interviews and focus groups. The methods could vary according to the stakeholders characteristic, the expertise and the availability of a moderator and other constraints. For instance, in some cases it could be difficult to organize focus group or group activities because of the difficulties in finding a suitable schedule accommodating people availability. A further recommendation was to choose a method by considering the expertise of the moderator: conducting a focus group is more difficult than do an interview and it requires an experienced moderator.

4.1.3.2 Parents and other individuals providing childcare

In the following table (Table 6), we report the list of dimensions recommended to be explored with parents and volunteers or other citizens that participate in the childcare ecosystem (e.g. mothers, fathers, grandparents, baby-sitters, au-pairs, volunteers, employees).

DIMENSIONS/TOPICS	GOALS
Childcare needs and work/life balance strategies	Explore main criticalities experiences by parents (mothers, fathers) with regards to childcare and work-life balance and in which situations they lack (after school, transportation, summer, emergency management, etc.)
Informal support	Explore the role of informal support for managing childcare and try to evaluate their past experiences: which aspects were appreciated, which aspect were complex to manage (trust, safety, lack of community support, etc.)
Sharing care with other parents	Explore past experiences and attitude toward sharing informal support for childcare with other parents based on time-sharing. Explore the two different scenarios of Families_Share: (i) daily routines (transportation, pick-up kids, etc) vs summer holidays, post-school activities Did they have experience in exchanging favours/support with other parents? positive and negative aspects and which context this reciprocal support took place (school network, neighborhood, colleagues, close friends, etc)
Reciprocity, expectations and management of time-sharing	Investigate motivations behind reciprocal support, expectations toward reciprocity, the value attributed to the exchange
Time-banking	Past experience with time-sharing/time-banking exchange. Investigate motivations, reciprocity, the value attributed to the exchange
Security and trust	Explore parents perception of security and trust related to time-sharing Which are in your opinion the preconditions for sharing favors and support each other? (strong ties with other member? Trust toward the organization mediating the peer-to-peer exchange, etc.)

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Motivations and drivers	Explore the motivations and the key drivers parents may have to share their time for collaborative childcare (e.g. solidarity, economic driver, quality of the childcare service, better socialization for their kids, active participation of parents)
Discussion of conditions that would support parents in exchanging time and support	Explore how parents would imagine a support for sharing time among parents How might we support parents in sharing their time to take care of children in a turn-taking modality? With whom? reflect with whom parents would exchange childcare tasks
Role of technologies in managing childcare	Map and evaluate the different technologies used by parents to orchestrate childcare

Table 6. Dimensions and topics to be investigated with parents and other persons involved in childcare ecosystem

The suggested method in this case was the semi-structured interview. A short presentation of the Families_Share proposal has been suggested as a trigger to explore the dimensions.

4.2 CityLabs stakeholders needs analysis and results

The goal of the bottom-up identification of the stakeholders needs (T1.2) was that of defining perceived barriers, opportunities and needs a local level, in order to inform the successive phase of user requirements identification both at the local and the international level. In the different CityLabs stakeholders ranged from public authorities, private companies to informal network of citizens and collaborative communities.

The needs analysis has been conducted in each CityLab independently by following the same procedures described above.

As part of this activity, about 320 people had been involved in the six. Stakeholders range from private and public organization to citizens that may volunteer sharing their competences within the initiative. The people involved covered an average of 35-50 years, ranging from 20 to 78 years old. Overall, more than 90 man were involved. While low income families were among the most contacted in the six City Labs, migrants and precarious contracts were mostly engaged in Bologna, Kortrijk, and Venezia. People with a low digital literacy were involved particularly in Hamburg City Lab, where migrant mothers were involved in the exploration of needs and barriers.

As discussed above, the Budapest CityLab has not yet started for logistical reasons, therefore this initial steps have been conducted in the other CityLabs only.

In the following, we describe the engagement strategy for each of the CityLabs, briefly defining the communities involved, the steps followed for their engagement and finally the main findings.

4.2.1 Bologna CityLab

Engagement strategy: communities involved

Bologna is the regional capital of Emilia-Romagna, which is among the most economically developed Italian regions and one with the most developed and generous welfare system and a high employment rate. The city has a population of about 380,000 people, and it is divided in 9 neighborhoods. In terms of childcare services, the main provider is the public sector with the municipal kindergardens ("nidi d'infanzia"), followed by private childcare facilities. The percentage of kids aged 0-2 who attend a public kindergarten is 36.7%, one

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of the highest rate in Italy (14% is the average at the national level). At the same time, the average charge is slightly higher than other cities (315 euro per month). As for kids aged 3-5, 95.7% of them attend a child service (scuola dell'infanzia). Offer is not fully covering demand anyway about 700 kids per year are not accepted into public kindergartens. The majority of the kindergarten have a full time schedule, i.e. 7.30 am-4.30 pm. , with the possibility of an extended schedule until 6 pm just for kids over 1 year. Childcare services for kids 3-6 are normally full time (7.30 am- 5 or 5.30 pm). As for primary school, cuts in economic resources devoted to school at the national level produced a contraction of full time classes (8am-16pm), which cannot cover the requests (44 families in 2014 could not access to full time classes). On the basis of these considerations, the Bologna CityLab has been organized involving public and private organizations involved in work-life balance policies and that they were already experimenting news formal and informal forms of social innovation in child care.

Steps and methods for stakeholders engagement

In the initial set-up phase, a number of meetings have been organized with three associations that submitted a letter of intents. They are: a public association that provide social welfare services (ASP); a registered NGO active in promoting social inclusion with an intercultural and gender perspective (Mondo Donna); and an informal network running a local Time Bank (Momo Banca del Tempo). The aim of these meetings was: to frame the concrete participation of these associations within the project; to collect their suggestions for the engagement of additional organizations in the project; to know additional organizations potentially involved in the project; to have the contacts of parents to be involved within WP1 activities; to map existing initiatives activated within the organization related to work-life balance; to identify barriers and drivers for work-life balance initiatives.

During a second phase, new local associations involved in the child care ecosystem were identified in order to have the same information provided by the three associations that submitted a letter of intent: in addition to a new Time Bank (Banca del Tempo Zoè), three additional parent associations were contacted (Mammabò, Damadà, and Amaca). A new meeting with the public authorities was also organized, by involving both ASP and the Bologna City (Education, Instruction and New Generations Area).

Finally, before to directly involve families and parents for the interviews, different dissemination campaigns were conducted through media, social media, and public events.

Stakeholders perception of the opportunities related to Families_Share project

During the meetings with the organizations, a number of work-life balance initiatives already activated in the different organizations have been discussed. This initial mapping shed light on a number of issues face in order to implement strategies and initiatives related to employees work-life balance, as well as best practices and successful experiences.

Among the previous similar initiatives discussed, there are several examples of Time Banking activities that were present in Bologna for several decades. The main problems until now encountered first at all concerned the type of informative system present, that have been defined by interviewees as dated, complex and jumbled. In addition, Time Banking activities are general and not sectorial and they are not always appropriate for the creation of group of mutual exchange for child care activities. For these reasons, Time Banking activities are not very used in Bologna: extra school childcare activities are above all organized by families through local associations and by using direct contact with other families (also with the use of the telephone and whatsapp). Moreover, previous European projects showed the difficulty to involve migrant families within social innovation activities.

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On the basis of these characteristics of the Bologna CityLabs, stakeholders perception of the opportunities related to Families_Share project had been very positive: Families_Share should take advantage of previous experience in order to consolidate the diffusion of a new technological system at the service of the community. The main cultural problem, in fact, concerns the impossibility to create, ex-novo, new free and big groups. It means that Families_Share in Bologna should be bottom-up create by pre-existing communities in order to create a greater omogeneity among the people involved. These groups will be following welcome to include new people and new members. The use of a mobile application, moreover, is considered to be more appropriate to the current Bolognese needs. Families_Share will represent an opportunities for families to make the most of the use of technology for activities already widespread. To this purpose, also the public authorities considered very positive the possibility to have an experience similar to Cokido in Bologna. To this purpose, they have undertaken to publicize the project as much as possible through their institutional channels.

Barriers and criticalities identified

Beside, different barriers have been discussed that hinder organization in promoting work-life balance initiatives.

Organizational barriers: There are a number of organizational barriers, especially related to public sector. The most commonly referred one is the absence of municipal services for child care post school activities. An other critical organizational aspect concerns the system of public calls to finance local organizations to help families in their work/life balance initiatives. More in detail, this critical aspect is related to the extreme parcelling of the local association in Bologna. Most of them, in fact, are very small, they do not have a strong organizational structure, and they have limited resources: it creates several organizational problems related to the participation of these associations to the public calls, as well as in financial reporting. For these reasons, the Municipality of Bologna is more and more using "collaboration pacts" (cd. patti di collaborazione) - a financially and organizationally leaner tool compared to traditional public tenders because it allows a different financial reporting and is also open to associations without legal personality. However, collaboration pacts are not now commonly used for child care activities. Moreover, small associations, and not always able to have access to these pacts, since in several cases a financial commitment to repayment is required.

Territorial issues: Several territorial critical issues are present in Bologna, due to the presence of diversified neighborhoods. The main territorial issues are both organizational and cultural. Among the former, neighborhoods in Bologna are very different and too fragmented without a central planning able to guarantee the same standards in public services delivery and in work/balance activities: only in the central neighborhoods a strong planning for childacare activities is present. Among the latter, however, there is a greater diffusion of migrant and low income families in the peripheral neighborhoods. In these areas, capacity and possibility to create stable links between the various actors appeared to be more critical. It is also connected to the greater demand for public security.

Legal and insurance *issues*: insurance and legal aspects is considered critical, especially when young children are involved (0-6). It is also conditioned by the greater demand for public security present in Bologna, due to the frequent cases of violence against minors or child pornography. In addition, there are legal problems connected with the creation of an educative group within the home without formal authorization. As indicated by the resolution of the Emilia-Romagna regional council of 16 October 2017, n. 1564, in fact, ““the conciliation initiatives, autonomously activated by families and which take place at the home of children aged 3 - 36 months, although not subject to any type of authorization, may be linked to the service system. To safeguard their private nature and domestic choice, these conciliation initiatives should be aimed at a limited

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number of children (maximum 3) and that the house in which the activity takes place is that of one of the children welcomed. In this way the family nature of the choice is thus safeguarded, totally delegated to the family, free to use a trusted person».

Communication issues: Communication problems are related to the fragmentation of the local association in Bologna, discussed before: not all the associations have the organizational structures or the human resources to publicize the activities of the association for child care. A good public communication system is also present through "Iperbole", that could be a good instrument to publicize Families_Share activities in Bologna.

Network of parents vs network of children: parents needs may be different from children needs, parents should carefully weigh pro and cons when choosing between different childcare options.

Exploring the perspective of parents and people participating to the childcare ecosystem

Eleven interviews were conducted with parents (indicated by the organizations we involved during the first and the second stage). The target of interviews were parents with children, by involving fathers, low income families, middle-upper families, precarious contracts, and some migrants (from both other Italian regions, and other parts of the world). Table xxx presents the topics explore during the interviews, and for each of them the results emerged from the Bologna CityLab.

Childcare needs and work/life balance strategies

Different needs were identified among the parents of different social classes. The main criticalities experienced regarding childcare and work-life balance concerned:

- In the lower class, more difficulties to find a family or neighbourhood support are present. The kind of support they necessitate is related to child homework, as well as during summer time. These criticalities are more accentuated for foreign families: for them, it's more difficult to find a help outside the group of other foreign families. As a parent pointed out «it's difficult for me especially during summer time: my three children are at home every day, and it's a very heavy situation».
- The middle-upper class situation is completely different because they benefit of childhood services, and it's simpler for them to find family or neighbourhood support. Instead, they find more difficulties during emergency situation (such as: strikes or child diseases) and in managing extra school activities (such as: sport, music activities). It takes time to get to the different places and it is a problem when a family has more children.

Informal support

Informal support is not very used: parents seek help to neighbourhood, families or other mother only for occasional or extreme situations. A sort of "family center" informal support is present in Bologna, but without the possibility to extent it outside the member of the original family. More in general, it is supported the idea that use family or friendly support is advantageous but only for short periods. The main situations of informal support used are the following:

- Elderly relatives: they are the main child care support. This kind of support is used especially from local families and it's focused inside the same family. As a parent pointed out: «rely on grandparents. The positive aspect is that you don't pay for this help!».
- No-local families: another kind of Italian families are that one that move to Bologna to work. They have no relatives who can help them, so they don't use to much informal support. As a parent pointed out: «we don't come from Bologna, so we can't count on relative , sometimes we ask to classmates's grandmother».

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- Foreign families: during the interviews come out that for foreign families while it is difficult to integrate with local Italian families, it's easier to find an help from other foreign families.

Other forms of informal but paid support for managing childcare

Informal but paid support for managing childcare is very used in Bologna. Positive and negative aspects emerged during our analysis. On one hand, these forms of support are considered by the parents interviews as a way to find a solution for their needs. As a parent argued, for example: «we find our nanny thanks the suggestion of some friends. There are some positive things, like the rise of a good relationship [...], she became as a family member». Among the negative aspects, the following were identified: i) the difficulty to find trusted people (for these reasons, both the feedback coming from other parents and word of mouth are used); ii) the expensive cost of this service; iii) the difficulty parents have to find a baby sitter for the emergency with little notice; iv) the administrative difficulties to have access to the local services. As a parents argued, for example:

"some time I had to paid the nanny, but with 3 child the cost is too high. I realised that I was working only to paid her! I appreciate the fact that she can do what you ask her to do [...] she can cook, and also do some housework. But she's not always available. It's useful, in this situation, to have three different nanny, in this way you are always sure to find a solution."

Sharing care with other parents

Interviewers agreed that informal support for childcare with other parents is a positive resource for both children and parents. Generally, parents recognise to other parents having the ability to look after other children. During the interview an interesting aspect emerged : a lot of parents declare that to have common rules could be a support for parents and it is very useful for children. It had considered to be pedagogical for children, that in this case they can learn to live with other people and to be citizens. As an interview pointed out: «absolutely, I think that share the education of our children with other parents is an opportunity. You are obliged to have common and social rules, and in this time we don't do something like this in our society...in this way we grow up citizens [...], maybe».

Focus on time-sharing

Despite parents consider sharing care with other parents an opportunity, this practice is not very used in Bologna. It is particularly true for the middle class, «where families are focused on themselves» (interview with parent). Otherwise, foreign families are more predisposed to share time and services. According with the parents interviews:

"from my point of view , I see more opportunity than risks [...] in particular if there is a good activity planning from the beginning. Parents save money and children meet new friends.
I think that reciprocity isn't automatic. Often it's the opposite because the families are more and more swamped and closed."

Time-banking

In analysing the usefulness in adopting a time-banking approach, the issue of how tracking credits and debits was in depth discussed with the parents involved in the interviews. Two different ideas emerged. On one hand, several people supported the idea that a regulation of debts and credits have to be present in order to avoid any kind of abuse of the platform: «there must be a way to track the hours, a sort of planning of activities and hours. It's fundamental for the reciprocity» (interview with parent). On the other hand, interviews think that this way of work could became an obstacle, not representing the real idea of sharing. Actually, there could be a lot of reasons to explain why someone can't participate to the exchange: «A sort of hour count could be useful, but we must remind us that we don't talk about a job, everyone should do what he/she can do» (interview with parent).

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Security and trust
Due to the barriers and criticalities identified, security and trust had been considered as two fundamental elements in order to guarantee a correct system of mutual exchange. If trust is lacking in both the individual and the organization then the conditions completely fail. The focus is to create relationships of trust, which sometimes do not depend on a decade of knowledge but on the quality of the relationship between people.

Discussion of conditions that would support parents in exchanging time and support
Parents agree that the main conditions that would support parents in exchanging time and support are two. Firstly, the presence of a regulation from the beginning is considered to be a necessary condition: «there must be trust and a clear regulation. In this way there are the same rules and conditions for all. It's also useful that there will be a reference person» (interview with parent). A second condition that could support parents is the role of Municipality. With respect the past, public administration should support this new kind of organization, by giving public spaces, events, and training courses. Contextually with the conditions that would support parents in exchanging time and support, parents also discussed about the motivations and drivers to enjoy to the new platform. They concern not only economic reasons, but also social and value ones. According with the parents interviewed:

"the main reason is that you can't allow public services for the lack of money, but also that in this historic moment there is a cultural movement about sharing that approach people in a purposeful way."

And, still:

"I think that the main factor is economic [...] we live in a society where everything has a price [...] I think that it's important to build another way of live and think, putting human relationship at the centre."

Role of technologies in managing childcare
Parents agreed that the role of technologies in managing childcare is finalized to be a support for people. Technologies are useful if they are easy to use, and they have the role to create the possibility for people to meet each other. Moreover, technologies are considered to be useful in emergency situations because they make interdependence among people faster. As an interview pointed out: «we can't trust only in technology, it must be useful to connect people».

4.2.2 Hamburg CityLab

Engagement strategy: communities involved

The Hamburg Harburg CityLab is in the process of activating a community. So far, the following actors have been engaged in the first phase of co-designing the Families_Share platform:

Organizations	Legal entity	Mission
Municipality of Hamburg Hamburg	Local Authority	
Integration Council	Local Authority	
Education Coordinator	Local Authority	
steg	Urban Development agency	
Kulturwohnzimmer	initiative	Cultural Open Space
IN VIA e.V.		Counselling for Parents
Elternschule	Initiative	Counselling for Parents
Löwenhaus	Initiative	Youth Club
Blechkiste	Initiative	Youth Club

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Elternlotsen	Initiative	Parents Network

Table 7. Stakeholders involved in the Hamburg CityLab

Steps and methods for stakeholders engagement

As a first step, the Families_Share project has been introduced to the Municipal actors. At the same time, potential actors to be involved in the activating of Harburg CityLab have been mapped with the help of experiences. In March and April 2018 local stakeholders have been contacted via email and phone to be informed about Families_Share in Harburg and have been invited to exchange their experiences in form of interviews.

A space to continuously perform Families_Share workshops has been selected: Kulturwohnzimmer is a cultural open space that holds activities for public participation and is part of the urban development agenda of the district.

Face-to-face interviews with 7 local stakeholders have been performed in March and April 2018. The individual interviews lasted about 60min to 90min. Questionnaires supported the interviews and documentation of topics discussed.

The interviewed stakeholders have been updated on the process steps and invited to take part in the Co-Design Workshop on June 7th and 8th, 2018.

Stakeholders perception of the opportunities related to Families_Share project

- Families_Share could bridge the lack of exchange between initiatives and institutions and integrate local resources already established
- Families_Share could open knowledge to learn from: Co-Playing and Co-Caring is commonly practiced within families and organized informally
- Families_Share could support the integration process: recommended to perform most activities in German language in order to support integration process

Barriers and criticalities identified

- Reaching out to parents involves continuity and face to face invitations and reminders to participate in activities
- Overload of care services and projects in Harburg and fear of concurrence to already existing projects
- Lack of media/tools to transparently inform and update on activities
- Working with a fluid community to be expected: Parents are hard to reach and to be involved in long-term processes

Exploring the perspective of parents and people participating to the childcare ecosystem

Seventeen (17) interviews were conducted on May 9th, 2018, meeting parents in a public space during a neighbourhood festival between 11am and 6pm. The informal interviews took 30min – 90min and were supported by sheets to take notes on issues discussed. Contact information for invitations to further steps in Families_Share were collected if wished and a leaflet with project information was distributed. The majority of the peoples interviewed were mothers with a migrant background. The main issues discussed were the following:

- Informal care taking between families of different religious and cultural groups is taking place and is mainly organized

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- Trust to be established mainly via institutions like day care centres and schools
- Wishing for offline exchange with other parents to connect and learn from experiences in organizing child care
- Wishes to activate exchange about and getting to know Harburgs diverse cultures
- Asking for information about offers in qualitative activities for child care
- Activities for children should relate to language improvement and sports activities
- Many mothers interviewed (with migrant background) do not use mobile devices or are not active online. Therefore, alternative ways for participation (offline) in combination with the online tool are necessary

4.2.3 Kortrijk De Stuyverij CityLab

Engagement strategy: communities involved

De Stuyverij interviewed stakeholders from several sectors: local government, companies, organizations working with families, with people in a vulnerable situation or with a disability, and share platforms. Besides that, de Stuyverij talked with parents, some of them have already experience with Cokido, others did not.

Steps and methods for stakeholders engagement

Investigation was conducted mainly through semi structured interviews. Important, all stakeholders already used Cokido and answered on the questions reflecting on the Cokido experience.

Stakeholders perception of the opportunities related to Families_Share project

Interviews with stakeholders pointed out the following issues related to the issues investigated:

Social Cohesion

- Mutual trust between parents / children / people in the neighborhood, networking and social cohesion
- Interaction of children with children of the neighborhood
- Local initiatives as a way to connect people in the neighbourhood
- Nowadays, families of high and middle class and families in a vulnerable situation do not have many contact as the type of childcare is also different.
- Opportunity of co-playing between different classes in society. Peer learning (e.g. a parent can help another parent about family values, how to deal with some difficulties, …)

Safety and trust

- There is reciprocity (no parent will leave his child with someone (s)he does not trust, so do you). There are always two parents present
- Responsibilities are shared
- Opportunity to help other children in safety on the road.
- Availability of a helpdesk (in contrast with an online babysit services; where there are no helpdesks, so in case of problems or emergencies, parents cannot contact someone). The helpdesk is important for the feeling of confidence and trust of the parents.
- Possibility to reach different target groups

Work-Life balance

- A solution for the unbalance between working hours and school hours
- Flexible

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- Especially useful in emergency or last minute situations
- Parents that are involved in shared childcare activities get to know their children from a different perspective: how does my child interact with other children? How does my child behaves? That way, parents spend more time with their children.
- A solution for the lack of other kinds of childcare
- It is a great solution for employees in the company. Other childcare services like integrating a childcare facility in the company or hiring a childcare company to organize childcare at the company were not feasible (the cost are too high). A cooperative solution where employees themselves participate in the childcare seemed to work much better.

Empowerment

- An added value would be workshops first aid, etc.
- No (little) involvement of the government, the sharing aspect
- Logistics: parents have to organize the childcare, but it is important that there is always a support, the facilitation and the framework of Cokido
- Childcare is a huge part of the family budget. Cokido is very cheap for parents
- People empower each other and share their knowledge

Location

- The use of public buildings (schools)
- Employer branding

Barriers and criticalities identified

Interviews pointed out a number of challenges and issues, mainly related to trust and safety, social cohesion and communication:

Trust & Safety

- It is an opportunity, but also a risk: trust and safety (several people mentioned this as the main challenge). Insurance should be considered.
- Are all parents well prepared? Parents should be trained to cope with critical situations, for instance a first aid course might be provided or training on how to deal with aggression, or how to deal with children with a disability, etc.

Social Cohesion

- Cultural differences; in some cultures it's almost unthinkable that childcare happens by 'strangers'.
- Regarding family values, some conflicts might arise, as for families who live in a vulnerable situation. Also to play with e.g. middle class children and parents, they see some difficulties as they have another way of rising up their children, another way of education, they speak another language, with other cultural values.
- The combination of average families and socially vulnerable families, there is a risk that both will not match as there are a lot of differences between these, "we and them". The cultural, family and social values and standards are different, the way people educate their children is different. There would be too little confidence and trust between the parents. There for it is important to be open for other families

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Communication

- Promotion, website, communication
- It is important to have a clear goal for the organization or project
- Clear communication, and appointments (to avoid that some parents abuse the system, make mistakes or do not take any engagement)
- Cokido should not be seen as a global solution for the lack of childcare.
- How are we going to provide everyone with the right information / child data

Management

Several issues emerged that should be tackled in relation to childcare management:

- Do you need a budget to get things work?
- How the project is managed?
- Goal-driven or benefit driven?
- To have a turn roll system, the group should be big enough. Risk of having a few people who put a lot of energy in it (and who burn out)
- How are we going to plan this?
- Will it have a negative effect on the productivity of the employees?
- Will this create confusion for the payroll department?
- How to create something bottom up? How to organize this bottom up as a government?

Exploring the perspective of parents and people participating to the childcare ecosystem

Interviews pointed out a number of opportunities:

Social cohesion

- Shared childcare would strengthen the social cohesion
- Importance of contacting organizations that work with people in a vulnerable situation
- Yes, also to gather colleagues of the own and other organizations
- Families share could be a solution to attract people in a vulnerable situation.
- Contact between 'average' families and socially vulnerable children

Ownership

- Yes, but how to organize this as a government? How to protect and stimulate the ownership of the citizens initiatives?
- Importance of bottom-up approach

Work-life balance

- It lowered the work pressure
- Employees had a more qualitative vacation. (not only in function of the kids/school holidays)
- Improves the collegiality
- Same amount of work done/week due to improved working environment

Share platform

- What else can be shared? (toys, transport, 'co-biking', etc.)
- How to convince more organizations, companies to use sharing platforms?

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Interviews with parents that already used the Cokido approach

These interviews focused on how current users of the Cokido methodology (without the app) are managing childcare (planning / managing child & parent data, …), which are the main challenges and their suggestion for improving the approach and design tools that can support them in better managing shared childcare.

Figure 17. Exploring the perspective of parents and people participating to the childcare ecosystem.

Criticalities experienced

- The biggest difficulties are in the planning stage and in the creation of the group. Finding out who can look after the kids on what dates, on what dates is there a need for the childcare.
- Another important aspect is that not everyone who is participating in the Cokido childcare is as proactive when it comes to filling in empty childcare spots. There always has to be some kind of distribution of roles, were one of the roles is to manage the planning / calendar.

Tools and strategies currently used by groups for planning the Cokido childcare:

- Most groups are still using the template provided by Cokido (i.e. Google Sheet calendar).
- One of the groups started making their own versions of these documents, these could be very helpful for further digital developments: They split the *planning* phase into 3 segments:
  1. *Pre-planning kids:* on what dates is there a need for childcare
  2. *Pre-planning parents*: on what dates could you (yourself) provide childcare
  3. *Final planning*: this is the final planning (who provides childcare with who, on what date) made by the person with the "planning" role.

This three steps of planning makes it much easier for them to come up with a good schedule. See Appendix 4 to see ideas given by parents related to planning and the Google sheets they made for each phase.

- Most groups are still using the template (as Google Form) provided by Cokido to manage information related to children

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- The child info documents contain all the important information about that specific child (parents, phone numbers, medication, allergies, doctor contact info, comments, …).
- The groups print these documents and make sure that they are physically available at the location where the Cokido childcare is taking place.

- One of the groups also created a *daily form*, where, for each child care day, they had a list of all the children that were attending that specific day. When parents came to drop off their child, they had to sign the list, when they came to pick them back up, they also had to sign the list. These lists were made in Google sheets and then printed, so for each day, a physical "day form" was available. For more details see the Appendix 4.

Useful insights for the design of a digital planning
Several ideas and insight emerged from parents that ca be useful to design a coordination tool for managing informal childcare:

- Planning of informal holiday childcare is quite complex and happens in different steps. We should take this into account when designing a planning tool.
- Not everyone is active (off/online), so parents should be able to have different roles / rights (that can are visible also in the app).
- Even though a digital variant of a certain document / certain data exists, it should always be possible to print these documents.

Interviews with parents

Interviews were also conducted with parents that are not familiar with Cokido approach or shared childcare.

Childcare needs and work/life balance strategies

- A lot of parents feel that it is challenging to manage time for themselves and time with their children (most of the parents experience "time with their kids" as something different then "time for themselves").
- Childcare during summer holidays and last minute childcare support are the two topics that most parents struggle with (with the exception of school teachers, they have the same holidays as their children).
- A lot of people make use of summer camps, but these are quite expensive. Some also feel guilt due to the fact that they are "dropping" their children somewhere else (camps) during parts of the summer.
- As it is now, parents often plan their summer holiday in function of their childcare needs, not in function of what the parent her/himself really needs.
- What makes the summer holiday even harder is the fact that you have to plan your childcare a long time upfront. Camps and other activities are always fully booked very quickly.
- During normal working weeks, the parents mostly make use of nursery or childminders. Childminders seem to have a more positive vibe to them, due to the more "home like" approach.

Informal support

- Parents rely on their neighbors, family, friends and other parents for childcare. It is a very important support, especially in emergency or last minute situations.
- Parents need this especially during summer holidays (some do not need this), after school, and - especially - in case of emergency (when a child or parent is sick)

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- Most of the parents use informal support for childcare, some use car sharing to go to school or to leisure activities. Some parents are worried about the mobility safety to school. Their children go by bike, so a "co-bike parent" would be great.
- The positive side of this kind of support, is that it's in a safe environment, with people the children and the parents can trust, it's for free and mostly flexible (useful for last minute support)
- However, most of the parents find it difficult to always ask other people to take care of the children. They would feel more comfortable if there would be more balance between giving and taking.
- One of the parents reported: "I want to raise my child by myself". And told us that this also hinders her use of informal childcare. She notices that when her child goes somewhere (friends / other families / in the neighbor), where people live by other standards and have other habits, she notices it when her child comes back.

Sharing care with other parents

- Some parents have already experienced with sharing childcare with other parents (not through Cokido). They like it as it is at their own place, so they can still do their household while taking care of the children. It is also nice as they get to know the other parents better, there is some trust building, and - especially - the children feel safe. There are no negative aspects. However, one mother said she would not like it in a structural way, so she 'has' to take care of the children during one day of the week (cfr. Cokido), that would mean she would have to give up time, especially when it is in another place.
- Most parents only have a positive attitude towards this kind of childcare; it is a good way to know the neighborhood better, it is cheap, it is a safe environment, and it is a balance between giving and taking. As a parent, you don't have to feel uncomfortable or guilty as you give and take support, and, you spend some time with your own child.
- Sharing transportation to school, after school, for leisure activities, is also popular, as it saves a lot of time and energy.

Security and trust issues

- Not surprisingly, all parents say the safety of their children is priority, they should have the feeling that the children are treated by other parents as they were their own children. several parents mention this reciprocity is a logical consequence and the strength of this.
- Parents say, it is important to organize something before, so the children and the parents are getting to know each other better, so a mutual trust can be created.
- Some parents mention the importance of have a kind of training regarding first aid, or how to deal with children with a disability, etc.
- Communication about the motivation is important; why do you want to use childcare?
- Public, child friendly spaces.
- It is one of the main challenges; one person says it in a nice way: "It is like staying at a camping, there is a trust that nobody will go into your tent".
- What if something happens with one of the children? Am I / is my child insured?

Motivations and drivers

- The principal driver for most (all) parents is the situation of the child itself; the child feels safe and happy in smaller groups and the safe environment. The children would love it as it would be with children of the neighborhood.

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- To spend time with his/her child, the child meets other children (especially for one child families).
- Cheap safe environment (in a school, in small groups, and with people they know).
- It is local, in the neighbourhood, getting to know better the other parents and neighbours, social cohesion.
- More time for myself.
- No involvement of the government.
- Everybody can participate, space for all kinds of people.
- Thanks to small groups, everybody feels involved.
- Discussion of conditions that would support parents in exchanging time and support.
- Most parents told us that they would not do this with total strangers. They would do it with friends / neighbours / other school parents. Noticeably, if parents are introduced to someone (a stranger) by a friend, they are much more likely to participate to something cooperative with them.
- Some parents are scared with the fact that they would have to take care of all the children by themselves on certain dates. When being able to take care of the group off children with multiple parents, they would not have this feeling.
- It would be essential to have all the right contact information of everyone.
- A fixed location would be needed, they agreed that children need some kind of structure.

Role of technologies in managing childcare

- Some of the parents were familiar with babysit apps like Bsit (finding babysitters in your neighborhood through an app), but none of them had really used them (mostly due to a lack of trust).
- Most people use Whatsapp for communicating with other parents. A parent had set up a Whatsapp group for informing the godfather / grandparents of her child about special moments.
- Facebook (messenger) was less popular (only the very young parent used this also for managing child activities), they had kind of a negative vibe to it. (mainly issues with privacy of the child).
- Some parents expressed a negative feeling towards apps that “rate” babysitters. They say that a recension is written in the “heat of the moment”, and may not give a good overview of a certain babysitter (it could give them a negative image where this shouldn’t be the case. They value mouth to mouth information more.
- One parent expressed a situation where he took a picture of his kid, and the kid’s first reaction was: “please dad, don’t put this on Facebook”.
- Other specific tools were not used in managing childcare activities.

4.2.4 Thessaloniki CityLab

Engagement strategy: communities involved

The Thessaloniki City Lab is coordinated by Ergani Center, partner of Family_Share project. Ergani is a no profit making civic association, supporting women, young and members of social vulnerable groups to implement their professional and business or social business plans. It is a located in the Sykies district, part of the Municipality of Neapoli-Sykies in the northwest part of the Thessaloniki Metropolitan Area. Thessaloniki is the second bigger city of Greece with ap. 800.000 inhabitants and it is is divided in 7 municipalities. The main municipality of Thessaloniki has 324.000 inhabitants and the Municipality of Neapoli-Sykies in one of these Municipalities with 85.000 inhabitants. These are the two geographical areas where we decided to start our intervention for Families Share project.

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Ergani started its engagement strategy with a communication plan which first step was to inform a number of stakeholders: the 2 local authorities of the area of intervention, NGOs, citizens organizations, business organizations, primary schools and parents' associations. We send an e-mail message to 35 organizations, containing general information about the project and more specific about the City Lab to be organized in our city, asking them to contact us in case they are interested. We received 17 positive replies and we organize further communication with personal meetings. In some of the cases (e.g, the two municipalities) we met, discussed, informed and interviewed more than one person.

The organizations, accepted the challenge to cooperate with Ergani Center and participate in the activities of Families Share project, are listed in the Table 7.

Organizations	**Legal entity**	**Mission**	**Number of employees/associates**
Municipality of Thessaloniki	Local Authority		325.182
Municipality of Neapoli Sykies	Local Authority		84.741
7th Nursery School of Sykies	School		25
8th Kindergarten	School		25
4th primary school of Sykies	School		110
10th primary school of Sykies	School		130
Kindergarten of Eptapyrgiou in Sykies	School		27
Private Kindergarten Alexandros (in the center of Thessaloniki)	School		22
Board of Parents Association of the 4th primary school of Sykies			12
Board of Parents Association of the 10th primary school of Sykies			12
Raft in town	NGO	organize cultural activities for children /promote voluntarism	35
Perichorisi	NGO		12
the Network of Social Enterprises of Central Macedonia	NGO		45
the Compass	NGO	Prevention Center	85
the social center of the Evangelic Church of Greece		Church	
the Social Center for Migrants and Refugees of the Caritas Greece		Ngo of the Catholic Church	110
Enterprising Socially	Social Cooperative		7

Table 7. Stakeholders involved in the Hamburg CityLab

Steps and methods for stakeholders engagement

In the initial set-up phase, a number of separate meetings have been organized with all the above mentioned organizations/authorities. Then we contacted an organized interviews with all of them recording their opinions. In the same opportunity we asked them for further cooperation in order to jump to the next step: to organize 10 individual interviews, 2-3 focus groups and the 2-3 co-design workshops with parents in order to detect the needs of the families with children aged 3-11 and to comprehend the functionalities of the e-platform to be developed by the project. All of them expressed their positive attitude for the aims of the project and to note down their suggestions on the methodological approach proposed for engaging communities within the WP1 activities but also we motivate them to contribute further, for the next steps and activities, such as the piloting phase. After the meetings we were able to define a more specific planning of the activities: focus groups, workshops and individual interviews in a certain time frame.

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Except to give us interviews the agreements with the stakeholders were as follows:

- The Municipality of Neapoli-Sykies, where both the president of the Sykies district and the Vice Mayor responsible for the Social Care and Education agreed to facilitate the entrance to 3-5 schools within their geographical area and to
- The Raft in Town (Schedia stin poli) organization, accept to organize in their premises a focus group with 5-6 parents and to inform a bigger number of parents to participate in the workshops
- The director of the 10th primary school of Sykies and the parent association of the same school, to organize a focus group with 5-6 parents and to inform a bigger number of parents to participate in the workshops
- The director of the 4th primary school of Sykies and the parent association of the same school, to organize a workshop with 8-10 parents and to inform a bigger number of parents to participate in the interviews
- The directors of the 7th and the 8th Nursery School of Sykies and of the Kindergarten of Eptapyrgiou in Sykies, gave us space to inform parents directly in order to participate to the individual interviews and in the workshops. The same facilitation was given by the owner of the private Kindergarten Alexandros, located in the center of Thessaloniki
- The NGO Perichorisi, the Network of Social Enterprises of Central Macedonia, the Compass, Prevention Center, the Evaggelic Church of Greece, the Social Center for Migrants and Refugees of the Caritas Greece, the Social Cooperative Enterprising Socially, agreed to pass the information to their members who are parents of our age group of parents in order to take part to our research.

In parallel we will continue the communication with the Municipality of Thessaloniki and 5 more organizations and we agreed to cooperate further in the future, focused specially on the piloting phase.

Stakeholders perception of the opportunities related to Families_Share project

In the next phase we conducted a number of interviews aiming to investigate the stakeholders' perception of the opportunities related to Families_Share project. These interviews took place between February and March of 2018. We finally implemented 17 interviews with the responsible of the above mentioned organizations.

During the discussions only a small number of work-life balance initiatives were detected. Most of the people explain that the recent socio-economic crisis made things worst. The lack of the resources mostly of the human and the financial ones and the high unemployment rate among parents give small space for this kind of initiatives.

The Municipalities provide the services to the citizens, they are obliged to, but they are stacked to them, either because of the lack of money either because it they difficulties to overcome some legal issues.

The schools try to organize extra activities for the children but not in permanent or formal way. The teachers took initiatives to support the parents and to explore the opportunities of a self-help system but not with big success, as they admit.

The organizations provide extra school activities are do their best to stay in low budget, because they understand the financial difficulties of the families but they face the same difficulties also.

All of them agree that an organized self-help and self-support system could be an answer to the biggest number of problems the Greek families faced today.

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The discussions concluded that the biggest problem of the families with children between 3 and 11 yo is to manage their time and efforts about the childcare. The situation is worst when it is about either single parents, either when both parents are working. As the Greek families rely mostly on grandparents the lack of them is a big problem also.

Most of the families motivate their children to participate in a big (even enormous) number of after school activities: e.g. cultural, sports etc. in private organizations which is a big problem for the families with low income. Additionally, specially about the children over 10 yo, some parents started to hire professionals for educational additional support, which is also impossible for unemployed or low income parents. An exchanging services between parents system is an answer to these.

Barriers and criticalities identified

The barriers highlighter by the stakeholders follows: ones.

Organizational barriers: The main problem pointed, is the lack of financial and human resources, which causes big obstacles for any new or additional initiative in order to provide solutions to parents. This could be a negative aspect also for the success of the project.

Trust and confidence: this topic seems to be the a very important fact for all. They believe that the lack of trust could raise a wall among the participants and they proposed to organize special activities in order to overcome this barrier.

Territorial issues: the need for geographic proximity was pointed as an important aspect. In a big city as is Thessaloniki distance is an important factor. Transportation seem to be a cost factor but a security one.

Legal and insurance *issues*: insurance and legal aspects are considered important and sometimes even critical

Figure 18. Exploring the perspective of parents and people participating to the childcare ecosystem.

We conducted ten interviews with parents (3 fathers, 7 mothers) and 2 focus groups with 10 participants totally (2 fathers, 8 mothers). All parents have children aged 3 to 11.

Almost all admitted that to organize and manage the childcare is the bigger problem and a permanent source of anxiety in the family. Sometimes it turns out to a nightmare mostly to the mothers, who even now, still are the responsible for this duty. The second biggest problem seems to be the fact of the 'total' lack of personal time for parents, mostly for the mothers.

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Most of the support given to families (or even better to the mothers) is from their parents and relatives. Only a few pointed that a friend or a group of friends are supporting in urgent situations by giving a hand to take the children from school or escort them in after school activities.

The public childcare system and school system has several gaps and leaves the families uncovered the afternoon (schools finish at 16: 00) and the holidays seasons. The bigger problem are for the mainly the single parent families and the families when both parents are working.

Most of the families motivate their children to participate in a big (even enormous) number of after school activities: cultural, sports etc in private organizations which is a big problem for the families with low income.

Some small self-help groups were organized in 2 cases, where parents support the others in the educational needs of the kids, in order to avoid paid support.

We detected also a good practice of a group of 7-8 families who agreed for a whole year, to keep an 'open house' every day, so the others could either leave the kids there or go there with the kids and spend some pleasant time.

Additionally, we discussed the good practice in some schools, where some after school activities are organized: theatrical plays, music or painting lessons, open spaces for sport activities. All agreed that this is a good practice that should be spread out with the activation and support of the parents and it could be an activity for the piloting phase of the project.

All agreed that the support of a network of parent could be a big relief for them and could organize their lives positively. Most those who are in lack either of time either of resources. A positive point was pointed the fact that the operation of a supporting system could motivate much more parents to participate and to provide solidarity and reciprocity. Additionally some of them expressed that they prefer to share the childcare with other parents that with the grand-parents, as they admit that there is a different approach and sometime opinions.

While we discussed about reciprocity, parents did not expect to count the exchange activities under this term. On the other hand provision of time and services in terms of solidarity and community and accordingly the needs and the capacities are more appropriate.

The electronic platform, although at the beginning seemed to be a little 'strange', was admitted as an interesting tool to manage the problems of the everyday routine of the childcare and also for some urgent situations. The existing situation is that parents use now either closed groups in Facebook either Whatsapp.

In most of the cases half of the time of the discussions was dedicated to the barriers and the fears that could put in danger the sharing care with other parents. The main barriers were highlighted by the participants as follows.

- Lack of trust and confidence, the most important of all. Almost all pointed that before entering in any activity they need to know thoroughly the other parents. They proposed a number of dedicated activities to know each other better, starting with open events but going deeper with common workshops.
- Geographical Proximity, distance is an important topic and it could be a jeopardy factor
- Dedication to the system
- Fear that to organize activities for other children could be difficult of non-manageable in some cases
- To participate in such a network requires long term commitment

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- The relations between children could affect to the relations of the parents.

During the discussion, several other services and ideas emerged:

- the possibility to open a couple of public spaces for the project, provided by the municipality
- to organize cultural activities in the schools during after-noon and evenings, by parents who have the skills and capacities
- to keep the open spaces at schools open during after-noon and evenings for play and other sport activities , organized by parents
- to organize trans-national activities among parents but also among children
- to organize common activities for families to know-each other.

4.2.5 Trento CityLab

Engagement strategy: communities involved

"Trento Family District" is an inter-organizational association supported by the local government of Trento that aims at creating networks of public and private organizations active in promoting work-life balance policies, increase women participation in the labor market and experiment novel forms of social organizations targeting families' needs. Table xx presents the organizations involved.

The Trento CityLab has been organized involving the organizations of the "Trento Family District" and proposed as part of their activities.

Organizations	**Legal entity**	**Mission**	**Number of employees**
Fondazione Bruno Kessler	No profit research organization	Research & innovation	+ 500
Kaleidoskopio	Private childcare provider	Childcare	+170
Progetto 92	Private childcare provider	Childcare	---
Famiglia Cooperativa	Local consumer cooperative		+ 40
APSP Grazioli	Public organization	Residential facilities for older adults	+180
FIDIA	Private company	Long-life learning	+10
Fondazione De Marchi	No profit research organization	Research and education	----
University of Trento	Public organization	Research and education	----

Table 8. Stakeholders involved in the Hamburg CityLab

Steps and methods for stakeholders engagement

In the initial set-up phase, a number of meetings have been organized with the Human Resources departments of the organizations to present the Families_Share project, to frame their participation within the project and collect their suggestions on the methodological approach proposed for engaging communities within the WP1 activities. A general planning of the activities was defined: from an initial focus group with organization to the employees' engagement.

A focus group (Figure 19) has been organized involving all the organizations to map existing initiatives activated within the organization related to work-life balance, identify barriers and drivers for work-life balance initiatives and collect feedbacks on the Families_Share scenario.

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Figure 19. Exploring the perspective of parents and people participating to the childcare ecosystem.

Stakeholders perception of the opportunities related to Families_Share project

During the focus group with the organizations, a number of work-life balance initiatives already activated in the different organizations have been discussed. This initial mapping shed light on a number of issues organizations and companies face in order to implement strategies and initiatives related to employees work-life balance, as well as best practices and successful experiences.

Among the successful initiatives discussed, there is the Summer Labs initiative promoted by FBK and the University of Trento. The Summer Labs are week-long educational and recreative activities organized for children of the employees during the summer school break. Exploiting the various background, expertise and job skills of employees, children have the opportunity to work side by side with experts on different discipline, participate to the working life of their parents.
FBK, in particular, is trying to promote employees participation in summer labs initiatives in different ways: from valueing employees participation in a formal way (e.g. integrating the activities within the working hours and valuing them as part of the Social Corporate responsibility actions) to offering discounts on the registration of children for compensating the and valuing the participation of employees as volunteers of the Summer Labs.
For this kind co-production initiatives, the organizations would like to encourage the participation of more employees in order to better distribute the effort and guarantee continuity and economic sustainability as well as to better support employees coordination.
In relation to informal network of employees that self-organize, the perspective might be slightly different. University of Trento said that in this case the organization can give an external approval, but should not formally endorse it because the quality of the service cannot be controlled and guaranteed. However, developing informal network of employees may have several benefits for an organization Indeed, the organizations that participated to the focus group consider that their value should be recognized since they might be a starting point for collaborating and participating to formally endorsed work-life balance initiatives. For example, one specific organization (APSP) is starting to recognize the value of informal social network of employees that support each other but the HR department wants to keep separate the two spheres, the one of informal network and the one of formal organization.
Other needs, and therefore opportunities for the Families_Share project that were discussed by organizations are the following:

- open the services offered by an organization to the employees of the other organizations of the Family District;

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- have the opportunity to collect the needs of employees and quickly understand if a proposal (e.g. after school activities) would be a valuable solution for parents;
- providing personalized communication of the offers: employees receive lot of mails every day, they should receive a very personalized communication;
- increase the value of the childcare service offered in the organizational context: it is important that this offers are competitive and give an added value that allow parents;
- value talents and skills of employees: as a representative of the FBK HR group who organize the Summer Labs initiatives reported *"*[these initiatives] *are difficult to run because they are not core for the organization, they are organized because there is an high awareness and sensitivity toward the topic of work-life balance [...] but these initiatives often overload always the same persons [...] and they live thanks to volunteers, because, in the end, there are employees that share their passions."* [FBK HR Staff].

4.3.5.4 Barriers and criticalities identified

Beside, different barriers have been discussed that hinder organization in promoting work-life balance initiatives.

Organizational barriers: There are a number of organizational barriers, especially for public organizations. The most commonly referred one is that they have severe limitations in allocating budget for welfare policies and to run work-life balance initiatives Another aspect is the type of work: for example, shift work (e.g. APSP Grazioli) makes the offer of welfare services more difficult. Some organization deliver services for consumers (e.g. Famiglia Cooperativa), form them too, it is difficult to engage employees during their work schedule. Finally, this kind of initiatives requires lot of planning activities and organization, some organizations have limited resources.

Territorial issues: workplaces are often geographically far from employees home. This has several consequences on the decision of the employee to choose a solution offered by and delivered in the organization's spaces. Parents carefully weight pro and cons, especially the costs of picking up their children in a given area (school, home, etc.) and bring them to the company. These costs seems appropriate when the schedules of parents are the same of the schedule of the activity proposed (e.g. Summer kids initiatives).

Legal and insurance *issues*: insurance and legal aspects is considered critical, especially when young children are involved (0-6).

Communication issues: Difficult to communicate offers to employees (e.g. they use mail and newsletter but the information related to the offers often do not reach the target).

Mismatch between employees needs and the organizations' offers: the organizations (e.g. FBK, UniTN) use survey to map needs of parents in terms of childcare but there is often a mismatch between the collected needs and the participation of employees to initiatives proposed by organization (e.g. after-school: the surveys pointed out that this was a main issue for parents but once the organization proposed to participate, the subscriptions were very low). As a representative of organization said *"we collected employees needs but when we tried to realize the service we discover that there were also the needs of the family, of the children, also related to transportation of children [...]"*. Moreover, employees' (and parents') issues rapidly change, quick strategies should be used to collect needs: *"find strategies to quickly collect needs, because they change often and usually when you collected and analyzed the data the needs are already changed"*.

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Network of parents vs network of children: employees needs may be different from children needs, parents should carefully weigh pro and cons when choosing between different childcare options.

Exploring the perspective of parents and people participating to the childcare ecosystem

Ten interviews were conducted with employees (4 fathers, 6 mothers) of different organizations to explore topics presented in table XX. The target of interviews were parents with children age 3 to 13 and employees that volunteers for work/life balance initiatives organized within their work organizations.

Informal support and parents' social network

Several parents interviewed rely on grandparents for managing childcare tasks and emergencies. Other forms of informal support are the reciprocal support among parents, especially among parents with children attending the same school or the same after school activities. These forms of support are usually resorted for managing emergencies rather than for routinely childcare need.

Some examples that were highlighted in the discussions are: impossibility to pick-up own child at school, difficulty in managing after school time. Actually, nobody mentioned informal support from other parents in relation to management of the summer holidays.

Some parents tried to establish forms of reciprocal support with their neighbors but this was a demanding task because of the coordination needed to accommodate different agenda and needs; and eventually parents resorted to professional solution to manage childcare. Some parents mentioned that they tried to have a shared baby-sitter with their neighbors, but in this case too they did not manage to find a compromise between the different needs of parents and children.

Factors and conditions that facilitate the reciprocal informal support among parents

Support among parents requires that a network exist, our informants mentioned different type of networks:

- neighborhood (or in general physical proximity to home)
- children attending the same school
- children attending the same after school activity (sport or recreational activities, etc.)

In these cases, the reciprocal support is grounded on the children network.

In the organizational context, the community is the professional community of employees/parents that know each other and share the same physical space. This can be a limitation, because, as reported by one of the informants *"[…] at a certain point, children decide how to spend their extra-school time".* Children want to spend time with children they know. This can represent a possible issue for organizing shared childcare in organizations.

Beside, interpersonal trust is crucial, and this is facilitated by knowing each other personally. For some parents, the context is very important for trusting a person: for example, if they trust the sport association that children attend, they can also trust other parents that they never met.

Barriers for sharing support with other parents

Contexts perceived as too formal are a barrier for reciprocal support among parents. Different contexts in which forms of informal support raise (school, sport activities, etc.) are different for the level of openness and closeness and informality. This has an impact on the level of reciprocal support that may rise among parents. For instance, some parents perceive the school context as being close and quite formal and this limits the level of participation of parents and their willingness to ask or give support. For some of the parents the contexts of extra-school activities (such as sport activities) is perceived as less formal and close than the school context.

Difficulties in managing the relationship with other parents when they share informal support. As a mother reported: *"I prefer to rely on formal childcare services, because if something gets wrong with my daughter I can speak with a professional, an educator. If I have to deal with a friend or acquaintance a lot of problems may raise"*

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Other barriers that were mentioned are: lack of specific competences by parents (*"Everyone has their own skills"*); excessive workload in coordinating with other parents; difficulties in planning activities in the long term (situations change rapidly and it is difficult to commit to a certain task).

Typology of exchange
Informants reported lot of situations in which an occasional support among parents happened, but any attempt to structure such exchanges, that are mainly related to emergencies and contingencies management (pick up children because of a problem of parents, etc.), is considered to be problematic. A more structured support is perceived as very relevant but it depends on parents' daily life, and the level of structuration of a family life.

Role of technology for reciprocal support
Whatsapp is the most mentioned technology when discussing about reciprocal support, in particular the use of *Whatsapp* groups specifically set up for the children's school classes or extra-school activities.
Several participants reported that *Whatsapp* is very useful for managing emergencies and for quickly communicate information among parents. Yet, participants also mentioned limitations related to the use of *Whatsapp*, namely the lack of structure for managing contents, difficulties to find relevant contents when needed, use the chat in an inappropriate way. Therefore a more structured, though still easy to use, technology is regarded as useful.

Expectations related to reciprocal support
People do not expect strict direct reciprocity but still parents expect to be supported if needed by those who they have supported ("*if I do a favor to another parent I don't expect that this parent will reciprocate but I do expect that someone [in the same community] will help me if I have a trouble*"). Parents agreed that there is a tacit expectation but they suggest that it should remain tacit. It is important that a collaborative and supportive environment exists, in order to have a balanced support among the members of a community. Making visible and explicit the exchanges is seen as something that can disrupt the instead of support communities (*"It would not be nice to show who does more then other. like saying 'hey, I did two turns and you did one [...] ' No, it doesn't work. Then it's clear that a balance should be found.. I expect that if I give support twice then someone will support me.."*)

Peer-to-peer support and sharing childcare within organizations and companies
Participants perceive main barriers when asked to express their opinions in relation to reciprocal support within their work organizations:

- *Needs are different, children with different ages have different needs:* among the parents working within the same organizations, they may have similar needs but children have different ages and they do not know each other.
- *Logistic issues (fragmented territoriality):* logistic is more complicated because they come from different places.
- *Sub-communities and trust*: organization's reputation and trust toward an organization that mediate support relations ("*Reciprocal support in a company context may help from a point of view, because we know each other, we know who belongs to the organization yet there still might be trust issues.", "I'm not sure in general about the trust issue … that I'd be happy if any FBK researcher would be the one that take care [of children]. Therefore, I'd have some doubts"*)
- *Role of an external educator and trust*: for the major part of the people interviewed, the role of a professional educator is fundamental. A professional educator can assure continuity if the volunteer employees take turns and each person may a limited amount of 3 hours. In these cases, there is the need of a person that might be a reference point and guarantees continuity, dealing with relational dynamics (s/he may more effectively deal with conflicts among children, competence and s/he has

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competence in managing children and proposing educational activities). Yet, some respondents reported bad experiences with young educators in summer camps. They therefore believe that well-motivated parents, whom you trust, might be better. Furthermore, some others participants believe that any adult person may manage a group of children, without the need of a professional educator. Lastly, other respondents believe that a parent might replace an educator but only for the less problematic tasks (for example, the welcoming and free play).

- *Difficult to recognize own skills, and adapt own competences for the childcare context*: some of the employees suggest they would like to participate in childcare activities but they would need support in framing their activity in a way that this could make sense for an informal activity with children.
- *Lack of a formal recognition of employees effort when they participate as volunteers to activities*: several our participants believed that in order to be successful, these initiatives need to have an explicit support by the employer, up to the point that this commitments are valued as much as other work-related tasks.

Roles of employees in the co-design of services

Several participants believed that employees should be better engaged in the design of services. One of the problem mentioned is actually that there are few employees taking an active part in these activities. A lot of suggestions were offered on how employees could be more engaged, in particular: (i) employees could become facilitators in order to support other employees to frame their professional skills to fit the children activities context, (ii) employees can be engaged on low-effort tasks (for example assistance during lunch time) beside educational, lab-based activities (this may prevent that people that would like to be engaged feel that they do not have adequate competences).

Ideas & best practices emerged

During the discussion, several other services and ideas emerged: (i) the possibility of having a children-dedicated area (ii) expanding summer initiatives already in place and opening them to other organizations in the District, (iii) foster collaboration among different units/departments within the organization, (iv) exploit resources already in place within the organization (v) change the mind-set at the organization level to better support parents for managing work-Life balance in different ways: more flexibility, reducing working hours and so on.

4.2.6 Venezia CityLab

Engagement strategy: communities involved

The Venice CityLab is spread on three different areas of Venice: Cannaregio in the main island, the Giudecca island and Marghera in the mainland.

Smart Venice received from the beginning the support of the Municipality of Venice and in particular of the Educational Services office, which organized a first project presentation and focus group with the school coordinators and educators of three pre-primary schools of the Municipality of Venice. The involvement of the schools was crucial for community building and carrying out all the related activities (interviews, focus groups, co-design workshop, raising awareness workshop). In particular the following schools have been engaged in the activities: the Pre-Primary schools San Girolamo in Cannaregio, Duca D'Aosta in Giudecca and Nerina Volpi in Marghera. Other stakeholders engaged in the project activities are the Parents' Council at the Primary school Grimani in Marghera, the associations Venezia dei Bambini and SUMO (Table 9).

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Organizations	Legal entity	Mission	Number of employees/associates/members..
Smart Venice	SME		4
Municipality of Venice	Public entity		Around 3.000 people working for the Municipality and 10 people for the Educational Service office.
San Girolamo pre-primary School	Public school	School	Approx. 70 kids
Duca D'Aosta pre-primary School	Public school	school	Approx. 50 kids
Nerina Volpi pre-primary school	Public school	School	Approx. 150 kids
Parents' Council at the Primary School Grimani	----		Around 300 community members
Venezia dei Bambini	NGO	Dissemination of events for children	Around 2.500 followers in FB
SUMO	NGO	Childcare services	Around 2.500 followers in FB

Table 9. Stakeholders involved in the Hamburg CityLab

Steps and methods for stakeholders engagement

In the initial set-up phase, Smart Venice organized a series of meeting with potential stakeholders, especially NGOs dealing with childcare and the Municipality of Venice. During the meetings the Families Share project was presented.

Some NGOs involved in childcare and offering services such as summer camps and workshops expressed some skepticism in spite having signed intent letters to support the project, stressing how families wouldn't have time to dedicate to self-organize among themselves and that professional expert childcare is considered to ensure better quality time for the kids and to be safer than informal solutions such as those fostered by the project. There is clearly the perception of a potentially competitive offer from Families Share as parents would access less to private childcare as peer support would increase. Further attempts will be made to clarify to this organizations that they could still benefit from the project as partner organizations in complementing childcare needs when parents do not have time to dedicate or in such cases where parents cannot take holidays for being available in shared childcare and prefer sharing a professional educator or a baby sitter.

Local Church Groups in Giudecca and throughout Venice regularly organize a 2 weeks Summer Camp every year ('GREST'): this is a widespread model throughout northern/central Italy based on parents contributing with their time, the Church making playgrounds and rooms available, volunteers (mostly teenagers/boys-girls scouts) cooperate in setting up and managing a variety of educational and recreational activities 5 days per week and on a full time schedule for the kids.

The Giudecca GREST was contacted and informed about the project and the willingness to make Families Share available to the group for facilitating the organization of activities. The model was described more in depth by promoters:

- Every year approx. 100 kids (primary school age) take part each week. The activities are open to the neighbourhood and priority is given to residents but there's no priority assigned to kids of Church members.
- >60 parents are involved in the Whatsapp group and all parents of enrolled kids are informed and asked for time to share, both for running workshops (from carpentry to cooking, painting, dance, English, coding, sports etc) and for logistic or cleaning tasks. Every day between 8-10 classes are run.
- Snacks and fruits are provided throughout the day as well as a main course at lunch thanks to a partnership with a local restaurant and supermarket.

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- 30 euro fee per week per kid is applied and covers insurance, meals, t-shirts.
- Organization activities start in February, first via face to face meetings and then 2 parents take the role of collecting parents' availability and composing a complex calendar puzzle on an excel sheet.
- Throughout the summer camp, whatsappp is used to solve emergencies (parents withdrawing from shifts and asking to be replaced) as well as to share other logistic information and plenty of pictures.

Unfortunately, it was not possible to organize a dedicated focus group with the promoter, but interest towards Families Share has been confirmed and further contacts will be taken to involve GREST groups in the Families Share Pilots in WP3.

The Municipality of Venice, with the Educational Services office, expressed from the beginning its interest to support the project and organized a first focus group with school coordinators and educators of pre-primary schools. The participants showed their enthusiasm about the project and supported Smart Venice in the organization of other two target groups with parents. Smart Venice interviewed also educators and parents of children attending some pre-primary schools.

During the focus groups (Figure 20) previous similar initiatives of childcare sharing were identified, then opportunities, needs and barriers/risks analyzed.

Figure 20. Exploring the perspective of parents in the Venice CityLab

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Stakeholders perception of the opportunities related to Families Share project

During the focus groups with the stakeholders and the parents, a number of past and existing initiatives of childcare sharing activated in the area have been discussed. Among the successful initiatives discussed, the following ones where presented:

- Small parents' self-help groups. These are initiatives implemented mostly by families when they take back their children from school. These initiatives mainly involve children who perform the same extra-school activities (sports). Usually one parent picks up 1-2 children. Only in case of birthday parties it occurs that only one parent takes many children together.
- "Promuovere ricchezze" ("promoting wealth"): this is an initiative that had been promoted by the Grimani School of Marghera in the past and consisted in the creation of whatsapp groups, through which parents used to exchange services and objects. It was a useful initiative but there was no reciprocity, equal / fair exchange. The problem of trust also arose in this project.
- "Pedibus": it is an initiative consisting in kids going and coming back from school walking in groups, supported by a few parents/grandparents, which had a great success in Mestre but it encounters many problems regarding authorizing the release of minors after school to non-family members (see the 'delegation' issue below).

All the participants of the focus groups and the interviewees pointed out that the platform could represent a great help for families where both parents work. In particular, they highlighted that the parents who need such a tool are families with fewer resources and less time available "often, parents who need a network of mutual help at most are the ones with less internal resources, less time to dedicate to others and more need of help from others". The sharing platform could be a valuable tool for creating a sort of mediation between families with different resources.

On the other side during the focus groups the need of "educating" parents about reciprocity and solidarity emerged. In this sense schools and educators/teachers in particular can play a fundamental role. Some educators highlighted that teachers must be the first to believe in the project and to bring parents closer to it. A teacher observed that "the teacher is the one who contributes in creating the trust among parents" and "it would be essential to start from the school and propose as a starting point the sharing of one's own reality, get involved".

According to participants, the tool could positively influence the management of some problems related to the daily routine, for example:

- Taking and picking up children from school: since the majority of people living in Venice works outside Venice and this implies long transfers every day, parents struggle in taking and taking back children from school. Moreover, usually schools are not flexible about timetables;
- Issues in managing extra school activities (sport, music activities). It takes time to get to the different places and it is a problem when a family has more children, which carry out different sport or cultural activities;
- Participation of the parents to regular meetings with teachers;
- Problem of "abandoned children": the participants highlight the presence of children who in the afternoons are left to themselves.
- The platform could substitute all the already existing *Whatsapp* groups.

The platform, according to the participants, is perceived as a good opportunity also for managing the holiday time, especially for those families who cannot afford expensive summer camps.

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Barriers and criticalities identified

The participants highlighted the following barriers that could hinder the success of the project:

- Confidence: this is a barrier that has arisen in similar past projects. It is difficult to create a relationship of trust between parents. A teacher said: "I noticed an initial availability and then, when the relationship started to become closer, a sort of distrust" and "what is missing is the sense of trust among people", "for the teacher, being part of an institution that keeps the child for many hours in a day the trust is easier to give, but among parents it is much more difficult".

- Delegations: the problem of delegations represents a strong barrier that must be overcome as the Families Share project implies flexibility in the organization and also in the people who bring and take back the children to school. Participants observed that "the issue of the delegations represents a big obstacle; from the primary school, regulations in place are very restrictive and do not permit the daily delegation" and "the institutional side crashes with the organizational flexibility".

- Insurance: the problem arises when a person other than the parent takes the child to school (car ride), but also when the child stays in the home of other people (domestic accidents) and / or eats at other people's homes (intolerances, allergies). In existing initiatives, the problem had been solved giving rise to an association with the consequent stipulation of an insurance policy.

- Cultural / intercultural barriers: to this regards especially the context of Marghera which is characterized by multiculturality, most of the time people, also outside school tend to stay in closed circles of people with the same origins. The interaction among these realities is quite difficult. Children make friends with children of other nationalities but the friendship is limited to school. Cultural differences can also appear in the way children are educated.
- Individualism: the main barrier is represented by the different life style of families and individualism also within the family itself: "people are unwilling to accept limits and difficulties of others", "they pay attention to how much they give and how much they receive".
- Resistance: there is resistance from parents in leaving their children to other parents and their houses.
- Scarce trust on children: some parents do not permit their children to stay alone with other children and parents because they are afraid their own children can be 'of danger' to others.

With regard to risks, the participants highlighted the following ones:

- Sporadic nature: one of the main risks is that the project is not characterized by continuity but sporadic initiatives.
- Poor reciprocity: situations in which there is no mutual help between families ("there is only one mother who helps a lot") and this may discourage available families. Participants observe that "if you can make something available and then ask for something in exchange then a group identity emerges, whereas if you only ask, this will not happen". At the same time a time banking system is not considered a good solution.

Exploring the perspective of parents and people participating to the childcare ecosystem

Smart Venice interviewed parents both through individual interviews and focus groups. In total 19 parents have been interviewed. The target were parents with children age 3 to 11.

Informal support and parents' social network

Most of the parents declares that they already tend to self-organize with other parents on a regular basis for taking care of children after school, especially with parents of children belonging to the same class/school.

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This kind of informal support is mainly managed through Whatsapp groups. These groups are of help especially in the moment when kids get out from school, since some parents might be late and ask the others to pick up also their own children. These are usually very small groups (2-3 kids), except in the case of birthday parties. Some parents observed that they benefit of having more children to take care since children play together, whereas when a child is alone, the parent needs to be focused on the child and play with him/her most of the time.
In general, informal support for childcare with other parents is definitely considered a resource, both for the daily routine and the management of the summer holidays.

Factors and conditions that facilitate the reciprocal informal support among parents
Support among parents requires that a network exists. Usually the network is created among parents having:

- children attending the same school
- children attending the same after school activity (sport or recreational activities, etc.)

In these cases, the reciprocal support is grounded on the children network.

The networks are then facilitated by the fact that parents know each other. In fact, interpersonal trust is crucial. When parents do not know each other trust is missing and there is a lack of time for building new friendships with parents and therefore trust. In general, indeed, there is resistance by the parents in leaving their children to other people that they do not know personally. Some parents declared that they would not leave their children to unknown people also for educational reasons "what for me is a danger/limit, for another parent could not be the case ". It is a safety matter, not a cultural matter.

Barriers for sharing support with other parents
In general, not many barriers have been identified about the sharing support among parents.
The main ones that have been raised are the following:

- Cultural barrier: since some foreign children do not speak Italian very well, some parents are afraid not to properly understand their needs;
- Difference in educating children (for instance, regarding the use of technology);
- Food issues: there must be homogeneity among children and therefore among parents about food. Some parents highlight that there must be also flexibility in this respect;
- Parents might not be used to take care of many children all together and be able to deal with conflicts among children;
- Scarce reciprocity;
- Accidents.

Typology of exchange
During the focus groups and the interviews the two scenarios of "management of the daily routine" and "management of the summer/winter period" were explored. Both scenarios were considered important to manage. Moreover, participants raised a third scenario regarding the management of emergencies (strikes, sickness, etc.).
Strikes were mentioned several times as they are quite frequent in public schools in Italy, on average one day per month, and cannot actually be considered emergencies as such as they are announced about 10 days in advance, although until the very end could not take place, based on teachers participation.
Some parents agreed that time sharing could be also extended to evenings in order to allow them to spend some time alone or free of kids .

Role of technology for reciprocal support

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Whatsapp is the most mentioned technology when discussing about reciprocal support, in particular the use of *Whatsapp* groups specifically set up for taking or picking up children from school or extra-school activities. Participants also mentioned limitations related to the use of Whatsapp, especially the use of the chat in an inappropriate way. Some participants hoped that the Families Share platform could substitute all the Whatsapp groups. In general, the use of a platform was never considered as a barrier.

Expectations related to reciprocal support
In general, parents observed that reciprocity is not a prerequisite since it depends on the free time of parents: parents who work till late cannot offer the same availability as other parents. They observed that it shall not be a problem since it is important that children stay together. However, reciprocity can also be seen as a risk since parents might feel judged for not exchanging the same time as others and this might lead them to avoid to join the initiative. At the same time a time banking system was not perceived as a good option.

Ideas & best practices emerged
The involvement of other individuals like volunteers, students or sharing babysitter was suggested.
Some parents suggested to provide an on line form for responsibility, in which they "free" other parents from responsibility in case of accidents.
Regarding the use of a platform, the inclusion of a "reminder service" was considered useful.

About the spaces, some parents consider suitable to keep children in private houses, other prefer outdoor spaces like parks which would need to be delimited for safety reasons. Schools would anyway be the best option.
For the summer holidays some parents are already trying to co-organize with other parents a small period in which parents rotates in taking care of children for one day, by asking one day off from work if necessary.

4.3. Co-design: defining the platform early requirements at the local level

After the exploration of barriers and opportunities perceived by both organizations involved and parents, CityLabs proceeded in organizing more focused activities in order to engage local stakeholders and parents in the definition of the Families_Share platform components. Co-design and co-creation workshops were organized in each one of the CityLab.

Co-design workshops are collective activities organized to discuss about design issues and choices. Co-design are based on the assumption of a strong partnership between users and other project members. The users are not only considered as "informants" but rather as "active contributors" within the design process. Co-creation emphasizes the collective and interactive negotiation and creation of something new.

Given the specific constraints of the project, namely to ground the development upon the Cokido platform, we decided to guide the divergent phases and mainly focus the involvement of stakeholders on the convergent phases in order to evaluate previously proposed possibilities. Therefore, the method of scenarios (Carroll, 2000; Rosson and Carroll, 2002) has been selected because it provide the possibility to ground the design hypothesis on a given technology (Cokido in our case), with the possibility of adapting scenarios to the constraints and opportunities emerged at the city Level (input from T1.2).

In the following, an introduction of the scenarios-based design approach is given, followed by a description of how we orchestrate each CityLab intervention. Finally, for each CityLab, scenarios addressed and results emerged are presented.

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4.3.1 Co-design and co-creation: methods and approaches used

The scenario-based design (Carroll, 2000; Rosson and Carroll, 2002), enriched with the use of personas, is a method widely used in the field of co-design, to foster an active participation of stakeholders and end-users in the definition of requirements. Scenario-based design (Rosson and Carroll, 2002) consists in presenting and discussing stories that represents a specific problem or technology in use with different purposes (Bødker, 2000):

- identify potential problems of a given solutions
- present and situate solutions
- illustrate alternative solutions

The use of scenarios is well suited within activities of higher level of participation and engagement, were participants become active contributors within the design process (see Appendix 1). Group discussions are suited for exploring reactions toward Families_Share ideas and to collect ideas on services and component to be developed but also individual discussions may provide useful insights.
Scenarios are stories of people undertaking activities/interactions in a given context. Scenarios usually represent in a narrative or visual form the following element:

- user's goals and motivations.
- tasks that need to be accomplished.
- interactions (social + mediated)
- a specific context (temporal, spatial, cultural)

The situations presented in the scenarios are either fictional, based on user research findings or based on already available products. The advantage of presenting scenarios rather than involving users in actual testing the solutions come from the fact that scenarios are at the same time concrete—presenting an interpretation of a design solution—and flexible—that is easily revised or elaborated—therefore providing a stable foundation for action-oriented reflection (Carroll, 2000).

Scenarios can be presented in different forms: they can be presented as a textual narration (as in figure below), videos or through storyboards. Scenarios can also vary depending on the feedbacks they are meant to trigger, for instance scenario can be:

- *exploratory*: scenarios can represent a situation and a problem that someone has without presenting a solution. In this case participants are asked to provide ideas to cope with a specific situation and to reflect on how that person can cope with that problem
- *envisioning*: the scenario shows that we might have a solution for a specific situation/problem, but the solution is only superficially represented. Participants are asked to provide ideas and suggestion on how this solution might be designed (Figure 1)
- *technological*: the scenario presents a technological solution to be discussed and evaluated by participants

4.3.2 General framework for co-design and guidelines for local implementation

The scenarios-based approach together with other specific techniques (card-sorting and others) were used by the CityLabs to organize the co-design and co-creation workshops. Input from the conceptual framework (described in Task 1.1.) and insights gathered through needs analysis (Task 1.2.) will feed this phase focused on co-designing the solution with stakeholders and families.

The proposed process was the following:

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PHASE	DESCRIPTION
PHASE 1. Scenario development and specification	Each CityLab will define a specific scenario (that can be divided into a set of micro-scenarios) to be investigated in the workshops, starting from issues and themes emerged.
PHASE 2. Co-Design Workshops	Each City Lab conductsCityLab conduct the co-design workshops
PHASE 3. Reporting results	Results collected in each CityLab will be organized according to the dimensions explored and shared among project partners (e.g. User profile and trust; etc).

Table 10. Phases for the co-design activities to be conducted in the CityLabs

4.3.3 Topics for scenario development and specification

Each CityLab defined a set of specific scenarios to be investigated, starting from:

- issues and themes emerged in the previous phase (T1.2) – (See section 4.3. on CityLabs stakeholders needs).
- issues that should be addressed concerning the design of the platform (dimensions described in the proposal). Table below (Table 11), summarizes the dimensions that partners explored during co-design workshops. The choice of which dimensions to explore in each CityLab and how to specifically instantiated it depends on the outcome of the user needs analysis developed in the specific CityLab.

DIMENSIONS	Description and questions (examples)
Creating Communities and managing groups of parents	The platform will allow parents to create groups of parents,volunteers, and other actors for self-organizing child care activities based on parents sharing time (after-school activities, etc.). Explore how stakeholder perceive the fact that the platform is based on the idea of creating small communities that self-organize to cope with childcare issues
Typology of exchange	Parents have different types of needs and consequently different types of time exchange can be useful in different situations. These different types of exchange impact on how the exchange is planned and how parents may coordinate the reciprocal support. In particular the project explores three types of support: Structured exchange to organize specific periods (summer holidays) Routinized exchange for routines problems (e.g. accompanying children from home to school) - parents could plan time exchanges in advance according to their schedule Supporting contingency management (last minute childcare service, delays, last minute changing of pick up or drop off location).
User profile and personal information: reputation, trust building privacy	User profile of members is crucial in collaborative platforms to raise trust among people and enhance new connections. Sharing personal information could also be important to coordinate group activities and to value participants skills and talents. On the other side, sharing personal information may raise a number of issues related to privacy, especially when children are involved.

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Feedbacks, Evaluation of experiences	What should be evaluated? Which kind of feedbacks are important to share? How to manage negative experiences? There are different levels of evaluation: i) members can evaluate an activity, ii) the experience done in collaborating with other parents, iii) etc.
Citizens and users classification and demand matching	The Families_Share platform would have as a core element a system to classify citizens as users in terms of individual profiles, typology of needs and services/skills they are willing to provide through time lending/exchange, and also of material resources made available through the platform. Also, requested/expected services shall be included in profiles classification. *Individual profiles can be classified by way of their formal and informal competences; types of activities offered to engage children when taking care of them; individual history of time exchange on the platform; and related feedback from other registered users of the community. A multidimensional net of nets model will allow graphical representation of potential and actual interactions.*
Time management and tracking of credits and debits (reciprocity)	Peer-to-peer platforms may track or not time (credits and debts). Time can be exchanged for the same amount of time, or it might be voluntarily donated. Explore how they perceive this feature, let participants reflect on risks that this feature may have, discuss positive aspects. *Which are the pros and cons of these two different ways of managing members contributions? (example from the Cokido experience: tracking vs solidarity)*
Space Management	The system may provide a mapping of available public spaces in neighbourhoods, with the possibility for geo-referenced tagging and sharing information about constraints in terms of physical accessibility, as well as possibilities for and conditions of use. Exchanged care services could be either delivered in private spaces (home) or in public spaces (parks, public libraries, children centres, sport centres etc.). Explore perception of safety, quality of space
Motivations and drivers	Motivations for participating can be heterogenous: altruistic reasons, practical motivations, economic drivers, improve quality of childcare service through direct participation, develop skills and personal contacts
Other envisioned complementary services	Which features would the stakeholders like to have? Why? Which other service may be included in order to support trust building within the community, reciprocal knowledge, etc? E.g. Exchange information, exchange of goods (give away children toys, clothes, Swap party, etc.)

Table 11. Dimensions to be adapted and explored in each CityLab

Other specific topics relevant for the platform can be added to this list and will be discussed in the successive phases of the project. For instance: Insurance management, Connection to social media, Open access user-generated parenting consultation material

For each scenario, dimensions and motivations were specified in order to link the experience described in the scenario to the inputs collected through stakeholder involvement and to the project goals. For example the scenario below is taken from the Trento CityLab (Table 12):

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SCENARIO #1: Discovering a new childcare service	Motivations and methods
Hannah (38) is a researcher at ACME.com. She has a son of eight and a daughter of ten years old. As schools break up for Easter, she is looking for childcare over the 3 weeks of Easter holidays. *While speaking to Meredith, a colleague of her, she discovered a new online platform that can be used to organize childcare among colleagues and Meredith is an enthusiastic user of this tool. Hannah decides to give a try and asks Meredith for more information on the platform. Meredith promptly send and email to Hannah, including an invite to join the platform.*	Interviews with parents in FBK pointed out that sharing personal information related to personal life (number and age of children), may be critical for some employees. **Focus and goal** • This scenario focuses on the functionality of creation of profile for parents/children • It aims at eliciting criticalities with respect to sharing of sensitive information about children with other parents and organizations. **Method** Presentation of the scenario, group discussion with probe questions and co-creation of a new form for sharing personal information

Table 12. Dimensions to be adapted and explored in each CityLab

For each dimension to be investigated, specific co-creation exercises can be identified and specific tools can be used (e.g. mapping of pros and cons by asking participants evaluation through post-it, card sorting, wireframes and paper prototypes, etc.). For instance, scenarios that investigate "user profile and personal information" can use wireframes or paper prototypes to explore needs and requirements related to the disclosure of personal information. Scenarios investigating "motivations" can make use of card sorting to categorize or rank different motivations for volunteering in the activity.

4.4. Results of the co-design phase in each CityLab

In the following the insights collected at each individual CityLab are presented. More details are presented in the Appendix.

4.4.1 Bologna CityLab

A Co-Design Workshop was organized in Bologna to explore features and functionalities of the Families_Share platform. The Co-Design was conducted with the help of two local associations during an event they organized – "Il Mercatino delle Mamme".

Participants involved

Thanks to the dissemination campaigns we did between February and May with the local stakeholders, we involved different types of participants during the co-design workshop for a total of 31 participants, among them: fathers, low income families, precarious contracts, and some migrants (from both other Italian regions, and other parts of the world).

Method used

The same scenario had been proposed twice, by involving the participants in different hours of the day. Each scenario addressed the same problems for both the summer period and the other months of the years (routine). If not explicitly specified in the results of the single scenarios, the problems occurred in each

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scenario were the same for the different periods of the year. In order to facilitate the discussion among the participants, a facilitator with an assistant for note-taking was present.

Scenarios description

According to the specificities of Bologna CityLab and the peculiar needs and aspects that emerged during the stakholder engagement and the exploration of the perspective of parents and people participating to the childcare ecosystem, as described in previous section, six scenarios were discussed. The table below summarizes the scenarios discussed and the main topics of investigation.

Title and short description	Topic/ Problem addressed though the scenario
Scenario #1: Creating communities and managing groups of parents and other volunteers	In this scenario, different aspects related to the creation of the communities and the management of the groups of parents were investigated. Each of them help us to understand how the platform should be developed. Firstly, we investigated: the possible modalities for the creation of a group; how it is possible to enter within an already formed group; if some restrictions on the type of people who may be part of it could be present. Secondly, we investigated if it is necessary to have a formalization of the roles within the groups (also with an internal regulation). Thirdly, we investigated if parents could benefit from a functionality of the platform that helps them to create additional face-to-face meetings to promote mutual exchange and trust.
Scenario #2: Typologies of activities	In this scenario, we investigated the possible modalities for organizing activities within the groups.
Scenario #3:Time management and tracking of credits and debits (reciprocity)	In this scenario, we investigated the definition of a model of reporting of hours and if it is well accepted by the local community. If so, the type of model to be used is investigated.
Scenario #4: User profile and personal information: reputation, trust building privacy	In this scenario, we discussed what kind of information should be visible in the platform for both parents and children (e.g. age, type of work, family, address, etc.) and the people that can have access to these information.
Scenario #5: Feedbacks, Evaluation of experiences	In this scenario, we talked about the feedbacks, and the evaluation of experiences. It was proposed to analyze what should be evaluated with respect to the exchange experience and which criteria should be used. Moreover, the problem has also been raised whether there should be an evaluation by minors of the experience gained, and how negative feedback can be managed within the group.
Scenario #6: Space Management	With this scenario, we tried to understand which functionalities should be included within the platform related to the space management for the child activities.

Results

Topic 1. Creating communities and managing groups of parents and other volunteers

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Participants agree that it is necessary to have a functionality to ensure that the participation of a new member within the group is approved by all the members of the group. The inclusion of new members should also be preceded by moments of meeting aimed at the knowledge and the creation of trust among the participants, and the technology should facilitate it. Unanimously, it was recognized the need to make use of a regulation within the platform that must be signed by the participants. Within the groups, a coordination figure was necessary: the election of a referent turned out to be a more shared solution. Finally, participants clearly identified the added value that parallel moments of meeting and conviviality could lead for the consolidation of the activities of the group, and for the creation of a climate of trust. A constant scheduling of parallel events is therefore necessary, and the technology should also present functionalities for organizing these events.

Topic 2. Typologies of activities

Participants agreed that the types of activities carried out by the member of a group could be flexible on the basis of the problems encountered from time to time. At the same time, participants agreed that the platform should contain a functionality for the scheduling of the regular activities. For the management of emergencies, instead, participants would prefer to use direct contact with trusted people.

Topic 3. Time management and tracking of credits and debits (reciprocity)

The timekeeping of hours must be defined within a regulation and must be quantified in hours, regardless of the type of activity carried out. The hours reported must be visible in the profile. If a person is in debt, he/she should not been excluded from the project, but his/her debit must still be visible within the platform. Participants agreed that people can pay their debits also with alternative activities still related to children (such as prepare cakes). A specific functionality to facilitate this additional system should therefore be present within the platform.

Topic 4. User profile and personal information: reputation, trust building privacy

On the basis of a previous model of Time Banking present in Bologna, parents agreed to use a parent profile with little basic information, but without any personal data and photos. This is to avoid the risk of discrimination (by age, nationality, gender, etc.). In particular, they agree to avoid entering any data and photos related to the minor. Within the app, the parent's profile must be supplemented by the telephone number for any organization and exchange of information, because a certain mistrust in the use of computer technology alone is present. In fact, participants considered the platform as a starting point for a future personal contact.

Topic 5. Feedbacks, Evaluation of experiences

Starting from the principle that it is not possible to judge the work of a free service rendered by a person, the participants have come to the conclusion that they should leave feedback only in case of objective negligence on the part of a member of the group (such as delays, absences or transgression of specific rules). In those cases, feedbacks should be in writing and they should be public in the user's profile.

Topic 6. Space Management

Participants agreed that both private and public spaces could be used, and that parents should use neighborhood events, parties, and festival as much as possible for their activities. This is already a common and widespread practice in Bologna that should be safeguarded also with Families_Share. Participants considered that technology should provide the tools to improve these practices. To this purpose, participants agreed that within the groups a list of the events organized in Bologna should be constantly update by their members. The platform should therefore contain a functionality to do these activities.

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During the first stages of development of the platform, the presence of an external facilitator is welcome. In fact, participants are doubtful that they will immediately be able to correctly use all the functionalities of the platform, since they usually manage these practices through Whatsapp or with the informal word of mouth.

4.4.2. Hamburg CityLab

The first co-creation workshop took place on 07/06/2018, and lasted from 16:00 till 18:30. The workshop was organised in Hamburg – Harburg at Kulturwohnzimmer (open space of community activites and artistic inventions).

Participants involved

During the first co-creation workshop, there were five participants and three moderators:

- Participant 1: male, one son (4 years old), working for the Council for Social and Education Management in Harburg
- Participant 2: female, several children, migrant background, working for the board of integration in Harburg
- Participant 3: male, student in Expressive Arts and Social Transformation, no children, member of the Culture Living Room (Kulturwohnzimmer), where the workshop took place
- Participant 4: male, student in Expressive Arts and Social Transformation, no children, member of the Culture Living Room (Kulturwohnzimmer), where the workshop took place
- Participant 5: male, migrant background, no information on family situation

Figure 21. Methods used for co-creation workshop in Hamburg CityLab

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Method used

Welcoming the participants, the Families_Share project has been introduced, giving a short review of former steps and the process to come ahead. Further, the workshops objectives and tools have been presented before starting the activities and exchange in two phases (Figure 21).

Six scenarios derived from the perspectives extracted in the interviews with local stakeholders and parents. The scenarios were presented in form of personas that described a variety of local situations (conducted from the interviewing phase) and future solutions related to opportunities and functions of the Families_Share online tool. To begin, the scenarios were presented by the participants and then solutions with the help of the online tool have been discussed in the group. The main needs discussed have been appointed on the backside of the scenario-cards. Secondly, those issues which emerged during the discussions based on the scenarios, have been explored and evaluated in detail with the help of sheets per dimension. Documentation took place on the sheets with space for detailed feedback and stickers to mark the relevance of discussed topics and functions.

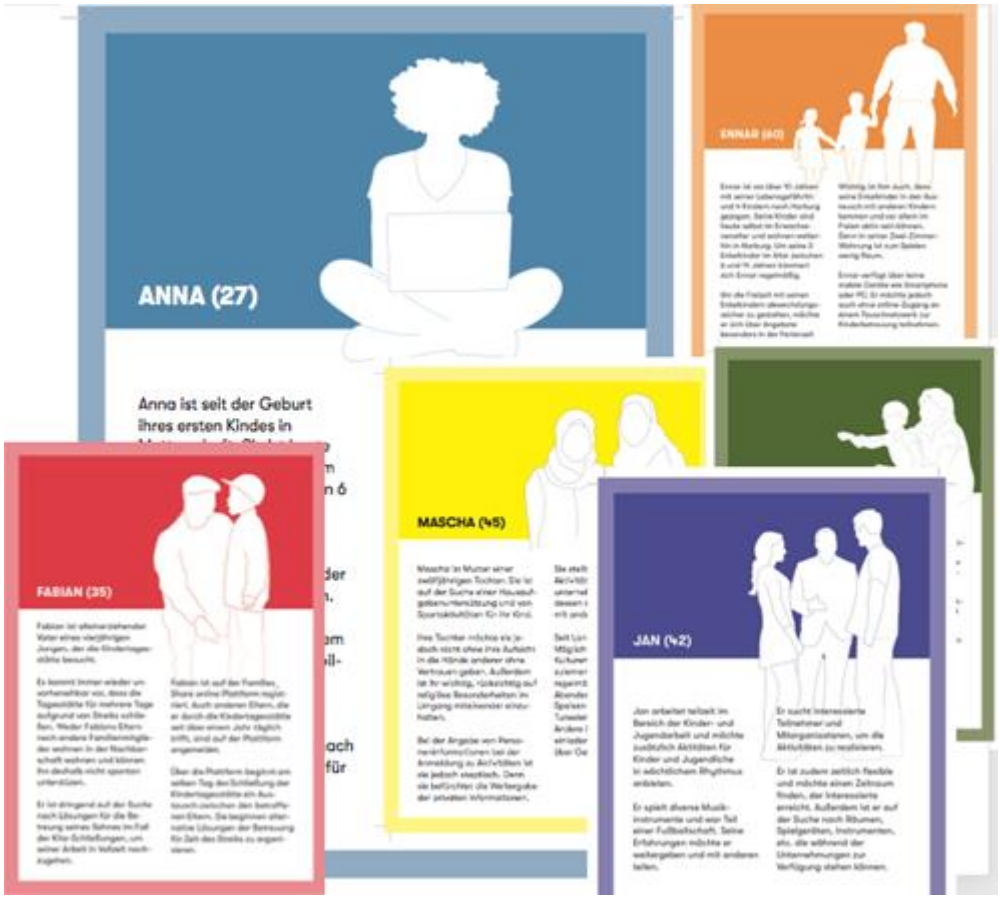

Figure 22. Personas used for co-creation workshop in Hamburg CityLab

Scenarios description

According to the needs and aspects that emerged in the previous interviewing phase of Hamburg-Harburg CityLab, five scenarios were developed. The following table summarizes the scenarios discussed and the main topics investigated.

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Title and short description	Topic/ Problem addressed though the scenario
#1 Scenario: "the supporter" can offer organisation, finances, equipment; is looking for networking, childcare, space, experiences and information	Which resources can be exchanged? Under which circumstances certain resources can be exchanged? How will resources exchanged be valued?
#2 Scenario: "the organizer" can offer organisation, networking, activity, finances, experiences; is looking for organisation, childcare, activity, information	How can the platform support the organisation of child care last minute? Which data and information is necessary to be exchanged to build a community and match users?
#3 Scenario: "the caretaker" can offer childcare, activity; is looking for networking, activity, experiences and information	Which information and data about users is necessary to build trust? Who should be able to have insight into which information?
#4 Scenario: "the passive user" can offer finances, experiences; Is looking for organisation, networking, childcare, space, activity, experiences, information	Which spatial characteristics are necessary to hold activities (advantages and disadvantages in private and public spaces)? How can the participation in Families_Share be open to no-online users?
#5 Scenario: "the newcomer" can offer exchange is looking for networking, experiences, activity, information	How can communication tools bridge language barriers? How can be dealt with a fluid community?
#6 Scenario: "the networker" can offer finances, experiences; is looking for networking, activity, information	How can people searching and people offering be matched? Which roles and responsibilities are necessary to manage and organize activities?

Results

Topic 1. Creating communities and managing groups of parents and other volunteers

How could communities/groups be built? (Scale: Open – Private) What are issues concerning this?
Depending on every group, both (open and private) should be possible (e.g. via privacy settings)
Issue: If groups are private, who decides about group membership / invitations?
Issue: The more open the groups are, the less commitments are made
Which activities could be organized by communities?
flea market, music lessons, playgroups, …

Which responsibilities are important in groups?

- Facts / information about offers and institutions have to be updated continuously
- Moderation of groups is necessary for conflict management

Participants questioned, if there need to be groups at all.

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Participants mentioned that the name Families_Share is misleading for them to be invited and participate in the project actively; They offer activities and consultation for parents and children, but do not all have a family themselves. They are wondering if another name for the CityLab in Harburg would be helpful to attract a broader community to be engaged in care taking. Which community is wanted to take part in Families_Share?

Topic 2. Typologies of exchange
The participants generally question the need for new / additional ways for exchange, as a lot of parents are already connected informally e.g. via whatsapp-groups. It has been question how the online platform could represent the networking and exchange in care taking which already happens informally via other communication channels.

Topic 3. User profile and personal information: reputation, trust building, privacy
Which information would you reveal about yourself in a user profile?
Participants are willing to reveal their name; age; interest and qualities and skills, education and experiences
Which information would you reveal about your child / children in a user profile?
Participants are willing to reveal their children first name; age; and preferences
Which information do you need about other users?
Participants want to know about other users: name; age; address; mail contact / mobile number
Proposals:
step by step placement of information in order to first get to know the basic idea of the platform, then match with other users to communicate an offline meeting and then exchange personal information in offline contact:

- using fictional user names and using real name occasion-related
- communicate the place of residence (e.g. the neighbourhood, postcode) but not the address
- contact via mail address or phone number only optional but relevant for offline exchange
- Difference between revealing own information and needing information about other users is obvious (esp. concerning address and mail contact/ mobile number).

As workshop participants were rather reluctant to reveal information about themselves in a user profile, they proposed to only use the platform as a first contact opportunity and to find people with similar interests. The exchange of sensitive data should then be made offline / in person in an activity

Topic 4. Citizens and users' classification and demand matching

Which information would you reveal about yourself in a user profile?

- Participants are willing to reveal their name; age; interest and qualities and skills, education and experiences

Which information would you reveal about your child / children in a user profile?

- Participants are willing to reveal their children's first name; age; and preferences

Which information do you need about other users?

- Participants want to know about other users: name; age; address; mail contact / mobile number

Proposals:

- step by step placement of information in order to first get to know the basic idea of the platform, then match with other users to communicate an offline meeting and then exchange personal information in offline contact:
    - 1. using fictional user names and using real name occasion-related

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- 2. communicate the place of residence (e.g. the quarter, postcode) but not the address
- 3. contact via mail address or phone number only optional but relevant for offline exchange

Difference between revealing own information and feeling the need to know information about other users is obvious (esp. Concerning address and mail contact/ mobile number)
As workshop participants were rather reluctant to reveal information about themselves in a user profile, they proposed to only use the platform as a first contact opportunity and to find people with similar interests. The exchange of sensitive data should then be made offline / in person in an activity.

Topic 5. Topic Space Management
What are pros and cons of using private and public rooms? What are preconditions?
Tendency shows that participants are more likely to use public rooms or spaces connected to educative institutions of trust (school for instance) and that there are many doubts in using private rooms.

- private rooms of the caretaker
- trust building could be easier in private rooms – you get to know each other easier
- enough and qualified space must be available
- what about insurance in private rooms?
- private rooms / home of children
- children know the space well, feeling secure and comfortable
- barrier to welcome "foreign" people to your own house
- what about insurance in private rooms?
- public rooms of institutions (e.g. schools, day care, …)
- control and trust can be built because of a "professional" context and already established trust
- probably more space than private rooms → qualified for bigger groups
- probably easier to handle concerning insurance
- possibility to store equipment, maybe use of existing equipment
- organisation could be difficult

In general, participants describe the wish for online mapping of available and unused spaces (make spaces visible!) in Harburg and have already created lists of such spaces.

Topic 6. Connecting online and offline

attract children online (of nonline parents without the habit to inform themselves online or to own mobile devices) to inform themselves and transfer the information to their parents about the possibilities given through Families_Share providing PCs / tablets with Families_Share platform at several institutions' places

4.4.3. Kortrijk De Stuyverij CityLab

All information about the scenarios, methods, and full topic list of questions can be consulted in the document 'Co-creation toolkit – Kortrijk'.

Workshops description

For the Kortrijk CityLab, user requirements for the Families-Share solution are being gathered through user scenarios (a current and a future scenario). These scenarios are validated and refined through the iteration of co-creation workshops. In this document, the results of the first co-creation workshop of Kortrijk are reported.

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Further information about the scenario-based user needs analysis and its methods, can be found in "Co-creation toolkit Kortrijk". The first co-creation workshop took place on 19/4/2018, and lasted from 19:00 till 21:30. The workshop was organised in Ieper (a city in West-Flanders).

Participants involved

During the first co-creation workshop, there were 10 participants and five moderators
There were four different groups of co-playing parents present: "De Appelsientjes", "De Tirlantijn", and two others. All participants live in or near the city of Ieper.

Moderators:

- Carina Veeckman – imec – note taker / analysis / methodologist co-creation
- Annelies Maertens – project coordinator Cokido
- Niels Kinds – user experience designer Cokido
- Pauline Delaere – communication and marketing Cokido
- Eline Charles – De Stuyverij – coordinator

During the first co-creation workshop, the following methods were used:

- Warm-up questions: current experience with Cokido
- Wire framing exercises with current screenshots of the Cokido application
- Card sorting exercise for identifying priorities in new features

For more information about these methods, please consult "Co-creation toolkit – Kortrijk" in Appendix.

Results related to Cokido experience (app)

In the following we describe the main results gathered with parents that already experienced the Cokido application

All participants have experience in co-playing through Cokido, with five participants and their children mostly having experience in shorter periods of co-playing, while five participants and their children co-played for longer periods.

Shorter periods of co-playing:

- These participants have limited experience with Cokido right now, and only participated during the trial week of the past Easter holidays
- These participants deliberately choose for co-playing only for shorter time periods, if no other childcare options through family or relatives are available.

Longer periods of co-playing:

- These participants and their children choose for longer co-playing moments during summer or holiday breaks (e.g. the children come for two full weeks)

All participants had also experience in organising the co-playing days as a parent themselves. Most participants said to come one day/week when the children co-play, or one day with and without the children in one week. The co-playing is also often a combined activity in the household; if a family decides to co-play through COKIDO, then the mother comes one day/half day, and the father the other (half) day.

Identified practices among the co-playing groups:

- The start and end time of the co-playing activities differ among the groups, some start at 7 / 7:30 and end at 5 o'clock, while others start at 8 and end at 4 o'clock. Among the group of parents, the

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agreements are being made about the start and end time, if some children have to be dropped off earlier then it can be arranged that they are dropped off at the co-playing parents of that day.
- Playing materials are collected via 'speeltheek', the children also often help in choosing the playing material.
- A call is launched for collecting / recycling playing material from older age groups
- Playing material is used from the school, such as the play garden, or materials for practicing gymnastics
- Most parents got familiar with Cokido through the school (parent's council), via other parents (blog posts), or media (social media, newspaper)
- The participants are very happy about the support provided by De Stuyverij for starting co-playing activities, e.g. the direct and fast response via email or telephone, the child info sheets, the issuing of rules and instructions, assurance, etc. The participants stressed that also the physical info sessions and get-togethers were really interesting for them, and convinced them to start co-playing with others. They also say that the experience of both De Stuyverij and the feedback from others groups of parents are ideal to learn from.

Main issues or problems that the participants were facing for arranging childcare PRIOR to using Cokido:
- The children were participating in summer camps that were rather **expensive**
- The children were **not (very) motivated** to go to a (big) day-care, where the children are not acquainted with each other, and might lose contact with friends after the holiday period (or even in the same period)
- The **stress** or the **daily grind** to find day-care for your children (among family and relatives, or other options)

The main current drivers and motivations for using Cokido are:
- **The enthusiasm of the children** (!): the children are very motivated to go, and to meet their friends from school in a trusted environment. The children also quickly make new friends seen the informal, cosy setting (this is also the case for when it is not in a trusted environment). The children like to go, and don't feel it like a daily drag.
- Lower **financial cost**
- **Intimate and informal setting** of arranging child care
- **More quality time** with the children – establishing a child-parent relationship during co-playing
- Making **new contacts and friends** (among children and parents)
- Feeling of **solidarity**
- Better **integration** of the **school** in the neighbourhood
- The **children** help in arranging the practicalities for setting up the co-playing activities with the parents

Seen the experience of some participants and groups for arranging child-care through co-playing activities, some questions arose about how to manage the following issues:
- How to set up the co-playing activities with a large group of parents and children?
    - There is a perceived fear that the commitment of parents in a larger group is lower, than in a smaller group;
    - There is a perceived fear that the atmosphere in a large group will be less enjoyable;
    - There is a perceived fear that administrative and logistic wise it will become more difficult with a larger group, and will require more efforts for making arrangements
- According to the experience of some, it is a core group of parents who arrange, prepare and control the co-playing activities during holiday periods, while a majority is keeping themselves

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apart from the others. Some participants feel the need for better dividing and balancing responsibilities in preparations among the group.

For better managing these issues (and also beyond), the participants stressed the need for meeting more regularly to exchange experiences with other co-playing groups.

Results related to the exploration of the novel scenario

Registration & User profile: My profile, kids and family (friends & family)

As part of the exercise, participants could group their feedback along the following categories: likes, current dislikes or lack of clarity, and further suggestions for improvements.

Likes:

- The gender value for children: female, male and other

Unclear processes or fields to enter right now into the system:

- Field "name of the family": it was not clear to participants what they have to enter here
- Field 'family: adding friends or family to your circle': it is not clear to participants who they have to enter in this field (e.g. "my husband will never check it online, but will co-play and I enter it into the system – the same for the grandmother", or "do we add the family members that others have to contact in case of an emergency"), and if it is necessity that these persons also register and make an account in the system. Right now, the system works as such that when you enter an email address in this field, a person is invited to co-play at a certain moment when the parent is not available. Participants agreed that it is important to know the identity of a person who co-plays (even though they don't have an account), and to know if it is a family member of a particular parent in the group – as such it remains the responsibility of the parent. This information is also now added on the child info sheets as 'extra co-player'. More information should be added to explain what is expected when entering an email address into the system for 'framily'.
- To add an extra field for "email". This email can be used for communicating with others in the group ➔ it was not clear to the participants that their email address is already shared now when entered upon registered, as this is not currently displayed in the profile information as shared info

Participants gave the following suggestions to further improve the registration process, and the sections around the profile information:

- There is still an English reference for 'uploading' info sheets for the children. It would be nice to have this in the **Dutch** language.
- To add **Whatsapp** information instead of Facebook.
- **Field 'about yourself'**: it would be nicer to have some standard sentences to be completed, such as "My hobbies are …" , "I love to …", "I would like to share the following (blog) link with you….", etc. The current section 'about yourself' is too impersonal, and nobody fills it in.
- To add an **extra field 'telephone number'**: There is one field now to add a telephone number, it would be useful to add a second telephone number from other family members (e.g. grandparents).
- To add an extra field '**telephone number for emergencies'**: e.g. telephone number from your work
- Nice to have: filling in the **child info sheets in a digital way** (same as a Google document). The current process of printing, and then scanning a digital copy is perceived as too cumbersome. The sticker from the National Health service could then be replaced with the identification number of the national register

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- To add an extra field on the child info sheet '**Consent for sharing pictures on social media'**. A checkbox for agreeing that photographs are taken from the child, and can be shared on social media.
- **Nice to have** – **printable profile sheets and rights for group coordinators**: Some parents have difficulties with registering online, and to complete all the details. Therefore, it would be useful if an offline version could also be made available for filling in the profile information (to add a print button in the system to support this), and which the responsible coordinator(s) of that group can enter afterwards into the system. The responsible coordinator(s) receive(s) the rights from the parents to enter that information. However, one should be cautious that the responsible coordinator is not bothered with every registration detail, and that the parents are still responsible for arranging the agenda.
- **Digital child info sheets**: Although parents gave the suggestion that it would be really efficient to fill in the information of their children online, they also stressed that the child info sheets should remain printable (add a clear print button in the system). There should be still a print copy available in a map that can be consulted by the parents on the spot (as not everyone has access to Internet on the premises).
- There were mixed opinions in the group about adding an extra field to the child info sheets about '**Delicate information'**. This information could be entered into the system, on the condition that it is only shared for the co-playing parents and not with the whole group. Other participants had the opinion that this type of information should not be entered in the system, and should be rather shared on the spot via verbal/personal communication.
- **Sharing photographs on social media**: Although some parents said that an extra field could be added to the child info sheet with consent of taking and sharing photographs on social media, others also remarked that it is really difficult to leave out particular children from the photographs when you are in a big group. Therefore, some groups have it in the group agreements and conditions that photographs can only be shared with members in the group, or in a private way.

Creating co-playing groups

As part of the exercise, participants could group their feedback along the following categories: likes, current dislikes or lack of clarity, and further suggestions for improvements.

Likes: N/A

Unclear processes or fields to enter right now into the system:

- Field '**name'**: Is this the name of the group? (not clear to two participants)
- The difference between the '**blue'** and '**white' groups** on the dashboard was first not clear. Blue means that you are already part of the group, white means that you are not part of the group.
- The label '**ga naar deze groep'** was not clear to two participants, does it mean that you will get more information about this group to read, or that you will become a member of this group?

Participants gave the following suggestions to further improve the creation of co-playing groups:

- When a parent creates a new co-playing group, then it would be useful if a specific **e-mail address** could be added to that. This for the reason that the e-mail address of that parent, might be different than the email address for arranging the communication with that group.
- The possibility to create a group without the need for a specific **address**, e.g. region X
- To add the internal **group agreements and conditions** as a consultable document to the created group

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- Currently, it is only possible to have one **group coordinator**. If this person is absent or leaves the group, then this might evoke issues with arranging the agenda. Therefore, it was suggested to have multiple coordinators in one group, or to transfer the rights.
- **Members of the group**: the possibility to see all the parents in a list, but also all the children (currently only parents)
- To show the **available spaces** on first sight of the group: e.g. number of available spaces, the group is full, etc.
- **Field "about" the group**: it would be nicer to have some standard sentences to be completed, as currently it is not clear what kind of information about the group should be shared (e.g. an example text).
- **Communication**: The current communication among parents in the group is done through Whatsapp. The participants were wondering if this habit would change if the new Cokido also provides a communication feed (communication with the whole group, but also one to one).

The agenda: arranging child care during holiday periods

As part of the exercise, participants could group their feedback along the following categories: likes, current dislikes or lack of clarity, and further suggestions for improvements.

Likes: N/A

Unclear processes or fields to enter right now into the system:

- Fields '**Title'**: What do you have to enter here? The name of the group, or the name of the holiday period? It was suggested to give an example in italic in the fields
- The field '**costs'**: "Are these the costs per day that you have to pay if you bring your child, or the costs that you make yourself?"
- It is not clear for some participants that they could choose for the standard hours of one day, or also choose for half days.

Participants gave the following suggestions to further improve the creation of co-playing groups:

- Participants mentioned that it would be easier to make **new periods** according to the needed days of a week, instead of entering a start and end date for a particular period– in this way, also the weekends are automatically added to the system, or also days that are not necessary (e.g. Wednesdays). A participant suggested having a calendar display on which they click the days that are necessary for a certain period.
- It would be nice to also have a '**voting'** or ' **doodle' system** whereby **parents** can say at which days that they can co-play as a parent. Based on the availabilities of the parent, the coordinator of the group will make the final puzzle. Right now, it is confusing if you indicate availabilities for 'I can/I am available as a co-playing parent', or 'I am co-playing as a parent, I confirm'.
- A practice organised by the parents before using Cokido is that they currently organise a **pre-inquiry** about the most demanded weeks, e.g. during summer, for arranging child care. Based on the number of votes per week by each family, the most demanded weeks are entered into the COKIDO system. It would be nice that this could also be arranged through the system itself, and not through a separate excel or Google document.
- To add the possibility to click '**My child will co-play every day during this period'**, instead of clicking on each day during a certain holiday period. Some participants perceived it as a lot of work to fill in online, for indicating how long each child comes (half day or full day) and for which days. The same principle applies for co-playing parents (co-play for a half or a full day). Furthermore, the participants also

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indicated that they wish to have a feature to **change the hours** that the child will be present at that day, instead of following the prefixed timings of one day.

- To add the **pick-up and drop-off times** of your children at the co-playing moments.
- To add '**Schrijf in'** above the '>' label for the periods

Results (Prioritization exercise)

In the final part of the co-creation workshop, participants could group new suggested features according to two axes: perceived priority (high priority, medium priority, low priority) and perceived usefulness (high usefulness, medium usefulness, low usefulness).

Below you can see the results for the 3 groups, followed by a final summary with amount of votes per feature:

RESULTS – group 1:

High priority		Financial management COKIDO agenda Digital child info sheet Online group arrangements
Low priority	Carpooling Management of locations Trust and community reputation Sharing talents Sharing through social media Sharing of videos	Sharing of playing material Matching of agendas WILDCARD Online files of meetings and evaluation moments
	Low usefulness	**High usefulness**

RESULTS – group 2:

High priority	WILDCARD WILDCARD WILDCARD	Online group arrangements Digital child info sheets
Low priority	Carpooling Management of locations Trust and community reputation Sharing talents COKIDO agenda Matching of agendas Sharing through social media	Online files of meetings and evaluation moments Financial management Sharing of playing material Sharing of videos
	Low usefulness	**High usefulness**

RESULTS – group 3:

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High priority	Carpooling Financial management Trust and community reputation Sharing talents Sharing through social media Sharing of videos	Digital child info sheets Online group arrangements Management of locations Matching of agendas
Low priority		Sharing playing material COKIDO agenda Online files of meetings and evaluation moments
	Low usefulness	**High usefulness**

From the summary below, it is clear that all participants agreed that 'digital child info sheets', and 'online group arrangements' are the two features with the highest score on usefulness, and the highest priority. This is followed by 'online files of meeting and evaluation moments' and 'sharing of playing material' with a high score on usefulness but a lower rank in priority. These features also strongly align with current online and offline practices, and can be an extension to the Cokido platform.

Further, the following features were perceived as useful: matching of agendas (two votes), financial management (two votes), Cokido agenda (two votes).

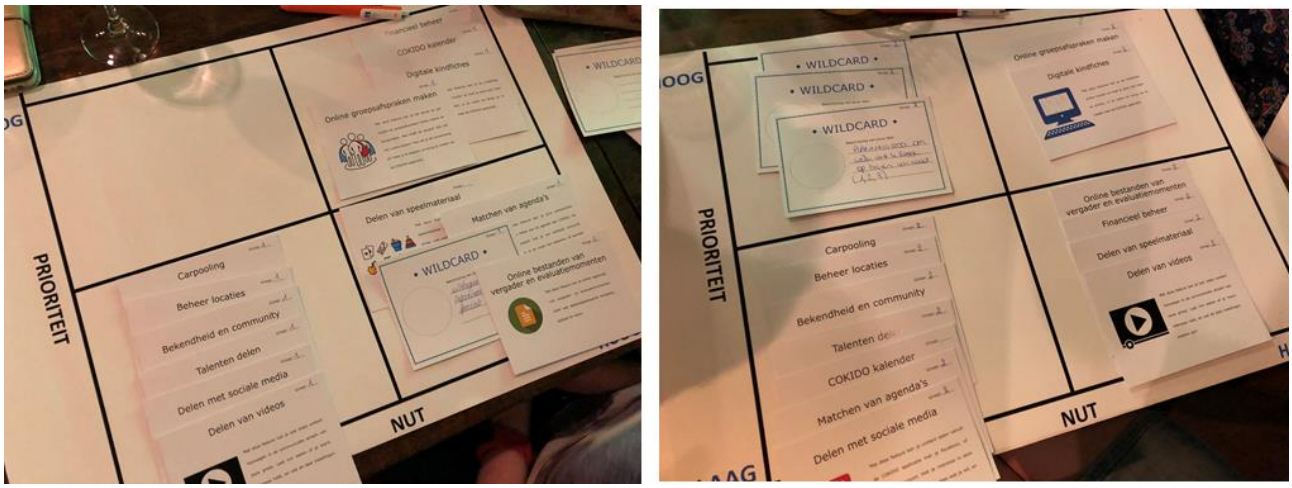

Figure 23. Results exercise II – Group 1 and Grup2

On the other hand, the following ones were perceived as less useful to have: carpooling (three votes), sharing talents (three votes), sharing through social media (three votes), trust and community reputation (three votes), sharing of videos (two votes) and management of locations (two votes).

Feature	Low usefulness – low priority	Low usefulness – high priority	High usefulness – low priority	High usefulness – high priority
Management of locations	XX			X
Carpooling	XX	X		
Matching of agendas	X		X	X
Digital child info sheets				XXX

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Online group arrangements				XXX
Online files of meetings and evaluation moments			XXX	
Sharing talents	XX	X		
Sharing of videos	X	X	X	
Sharing playing material			XXX	
Financial management		X	X	X
COKIDO agenda	X		X	X
Sharing through social media	XX	X		
Trust and community reputation	XX	X		

4.4.4. Thessaloniki City Lab

In Thessaloniki we conducted 3 different co-design workshops. More precisely the workshops took place:

1. at 12/5/18, at the premises of the program 'to boost self-help' of the Aristotle University of Thessaloniki located in the center of Thessaloniki, with 15 participants, invited from the stakeholders met during the phase of community engagement
2. at 2/6/18 at Ergani Center with 6 participants, parents from schools in the Municipality of Neapoli-Sykies
3. at 14/6/18, at the 4thethe primary School of Thessaloniki with 8 participants, members of the parents association of this school

Figure 24. Participants during a co-desing activity in Thessaloniki CityLab

Participants involved

The workshop engaged 29 parents of children age 3 to 11 and 4 educators. Among them: 5 single parents, 3 migrants, 6 unemployed, 8 low income. In all the workshops, we gave the opportunity to the parents to bring

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their children with them, as 2 volunteers of the NGO Raft in the city (Schedia stin poli) kept them occupied with cultural activities.

Method used

We exploited the scenario-based approach selected by the project. We started with brief presentation of the project. Then it was proposed to the participants in the first workshop, to be divided in 3 smaller groups, with 5 people each. Each group received instructions about what they were asked to discuss about and some flipchart papers with stickers to fill in with results from their discussions. One whiteboard and some colored papers were to use for the presentation of the common results and to keep notes during the final discussions. In the second and in the third workshop, all the participants formed one group. In all the workshops we used the same method and means.

Scenarios description

Two different scenario situations were presented to the groups:

- One scenario situation concerning the management of every day routine: taking and picking up children to and from school and to and from their after school activities.
- A second situation concerning the organizing of additional education activities.

For each situation, 5 topics were presented, and participants were asked for each of them to imagine how the platform could be structured. The ττopics were the following ones:

1. Creation of the profile of the adult and the child in the platform;
2. Creation of a group/community;
3. Time management;
4. Space management;
5. Updates, feedbacks and evaluation

All parents participated with enthusiasm to the workshops. They expressed their willing to participate in the future activities but also to support us to disseminate the project to other parents and to activate them to participate also.

For the process of the co-design workshops they worked together and we encourage them to participate actively to the procedures e.g. to be timekeepers, to take notes, to summarize, following a rotation.

For each topic under each scenario we devoted 8-12 minutes and at the end we spend 30 minutes for discussion.

Results

Topic 1. Creating communities and managing groups of parents and other volunteers

- Optimum situation/scenario: the formation of small groups of parents with children in the same school and of similar age (+-1 year). Some of them should know each-other. For those who don't or who are new in the school, references from other parents and ice-braking/introduction activities must be organized. The ideal proposal is to form more small groups of parents (6-12 parents, 6-15 children) in each school. The main function of each group is to cover the everyday routine of the parents. All the groups in each school should be connected to each other in order to organize some more open activities (cultural, educational etc.). When an activity is organized and there is space for more children, then they could communicate it to other groups with geographical proximity.

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- Each group must have a coordinator and one supporter and in each school one co-coordinator would facilitate the interaction. Coordinators must change regularly. A group of 2-3 persons in each school will be appointed to solve the reported conflicts and problems
- Meetings between groups considered as a good idea in order to organize further activities and to evaluate the process

Topic 2. Typology of exchange

- The participants started with their 'normal' needs: accompanying mainly the younger children to and from the school, to after school activities, babysitting, keep children groups at home playing or organize activities. These were the everyday priorities for most of the parents.
- Most agreed also that it is interesting to organize sport and cultural activities by parents according to their professional or amateur expertise. 2 groups discussed the possibility to organize additional educational activities (English lessons, computer lessons, mathematic or geography topics etc.) and other courses depending on the age of the children. In the second group it was proposed and accepted with enthusiasm the challenge to organize communication at transnational level with other groups of parents. An additional proposal was to facilitate the communication between children in order to improve their English competency but also to promote the intercultural exchange.
- In the third group they raised the issue to exchange services between the parents, especially in the case of professionals (e.g. plumbers, electricians, hairdressers etc.)
- This topic was proved as the most interesting for the people participating in the workshops. We spend for this topic most of the available time. And in the second and the third workshops we came back again at the end for discussions

Topic 3. User profile and personal information: reputation, trust building privacy

- Parents profile: name, age**,** profession, number of children and ages, school of the children, voluntarism and past experiences related children care, competences and skills, availability (time, frequency, days and time in the weekdays or during weekends, in holidays etc.), personal habits (e.g. smoking), available space, strong and weak points, proposals and preferences, difficulties
- Children profile: name, age, school, special needs and requirements, health issues, school, interests, strong and weak points, educational needs (for older children)
- For the case of parents, in the third group they proposed as a good idea to ask for recommendations and references, in order to build trust (for the unknown persons)

Topic 4. Time management and tracking of credits and debits (reciprocity).

- Most of the parents in all groups reported that time exchange/banking is not necessary/obligatory. Each group must be flexible and based on its own needs. The most important fact is to cover the needs of the parents, especially of those who are in need. Nevertheless, they agreed (almost all) that they would accept to record time and exchanges, activities and proposals.
- Most of the people believed that the formation of an exchange system should be as much as flexible is possible. Reciprocity is not bad but should not be in the system, but solidarity and the coverage of the emerged needs.

Topic 5. Space Management

- Most of the people mentioned school as their first option. Depending on the service it could be a private house (specially for smaller children and of course in the case of babysitting) or public spaces like playgrounds or cultural centers etc. In some cases community centers or centers owned by the church could be used.

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- The groups spent a lot of time to discuss about the safety of the spaces and the fact that in the case of using private homes tags should not be allowed.

4.4.5. Trento CityLab

Two co-design workshops have been organized in Trento CityLab: The first on 22.05.2018 in Fondazione Bruno Kessler, the second on 2.05.2018 in the premises of the Contamination Lab (CLab) of the Univerity of Trento.

Figure 25. Some photos of the co-design workshops organized in the Trento CityLab.

Participants involved

Each workshop engaged about 15 parents working in the Family District Organizations. All were parents of children age 3 to 13. Some of them had previous experience in participating in summer labs activities as volunteers, some of them only participated as beneficiary of the summer camps (their children participated in the camps but without them volunteering as parents), some of them never participated to work-life balance initiatives organized by their organization.

Method used

We exploited the scenario-based approach (see section 4.2). A general presentation of the project was done to introduce the main topics of the workshop. We then divided participants into small groups (4 to 6 participants). Each group had a facilitator with an assistant for note-taking. The moderator introduced the each scenario and encouraged the discussions around the topics. All scenarios were discussed by each of group. During the discussion, the facilitator used post-it on posters hanged on the wall to collect and share participants' feedbacks and encourage participation. Simple mock-ups of an interface were used to discuss in more details specific aspects of the service, such as the shared calendar for example, (see Figure 25).

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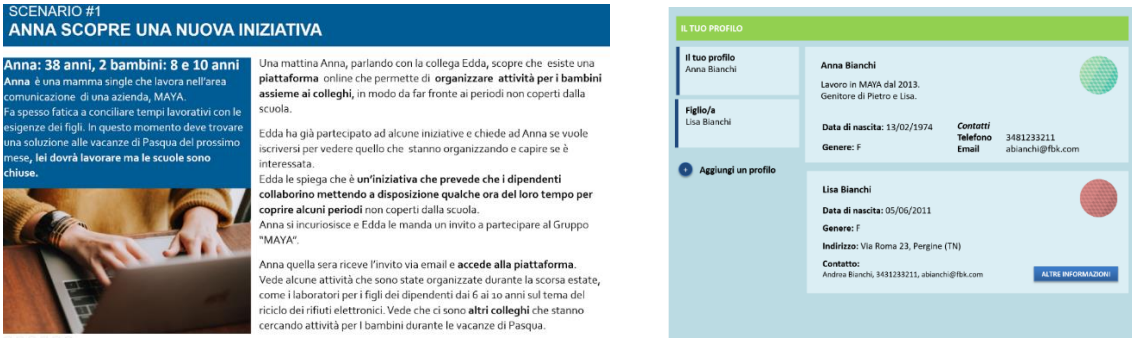

Figure 25. An example of the scenario and of the mock-up used during workshops. The scenarios were printed and distributed to participants. Simple mock-ups were used to trigger participants discussion on specific functionalities the service might have

Scenarios description

According to the specificities of Trento CityLab and the peculiar needs and aspects that emerged in the previous phase, 4 scenarios were developed addressing the main issues that emerged. Table XX summarizes the scenarios discussed and the main topics of investigation.

Title and short description	Topic/ Problem addressed though the scenario
#1 Scenario: "Anna discovers a service for organizing childcare within her organization"	1) Opportunities and barriers perceived for participants, in their double role of parents and employees of an organization 2) Management of the service: in which way should this service be presented? In which way should Anna receive an invitation? which is the role played by the organization? 3) Which is the value of socializing childcare with own colleagues?
#2 Scenario: "Sharing own time to organize childcare within an organization"	1) Attitude toward sharing time to organize childcare activities within own organization, 2) Barriers and value of sharing own time: tensions between professional and personal sphere, 3) Define the type of participation that employee foresee: would they organize childcare activities autonomously? which role should the organization play? Are there criticalities in collaborating with colleagues to organize childcare? 4) Measuring "time": in which way should time allocated managed? Should time given made explicit/visible?
#3 Scenario: Creating own profile and sharing personal information: adults and children	1) Which information would participants share about themselves? which data about their children (health related data, behavior, etc.)? 2) Which is the role of technology in protecting privacy? Which information should other employees have of people engaged in childcare activities? 3) Relation between personal data sharing and trust
#4 Scenario: Proposing a new childcare activities and looking for colleagues that can support in an emergency situation	1) Managing a contingent childcare need within own workplace 2) Opportunities given by having a dedicated space for childcare within own organization: how would parents use this space? Which are the characteristics that this space should have to meet parents-employees needs? 3) Which are the criticalities of bringing children in a workspace? 4) How support can be asked to colleagues? which is the role of technology?

Results

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Creating communities and managing groups of parents and other volunteers

- The service should be guaranteed both by the **organization** itself (to demonstrate the value and guarantee the quality of the service) and sustained by a lively and active **informal network of employees**
- A peer to peer informal approach is considered appropriate only for short and contingent support among colleagues.
- When a more structured and longitudinal commitment is foresee, a **synergy** between the institutional part or **organizations/companies** (HR departments) and a **lively community of employees** is necessary: a bottom up approach should be the driver and propose the initiatives, then the organization should endorse the initiative and support employees in (i) coordinating the childcare initiatives, (ii) provide space and other resources (iii) manage the legal and bureaucratic issues (iv) recognize the value of employees that participate to these initiatives, (v) acknowledging their activities giving them time for collaborative childcare.
- The system should support different roles/types of users with different permission level: (i) coordination of initiatives, (ii) small group management (iii) simple users

Which is the role played by the organization?

- some participants would like a formal invitation to join the activities, even if they acknowledge that the informal words of mouths is very effective to rise interest toward the childcare initiatives. Word of mouth should not be the only channel because this does not guarantee the inclusion of employees that are not part of existing networks of colleagues
- Small organizations should network with bigger organizations; each organization participates in sharing resources (e.g. APSP offer the use of the swimming pool, other can offer the use of gym or outdoor spaces).
- Participants would like to have a shared inter-organizational childcare: employees of different organizations collaborate to set up labs and educational activities.

Who participate in the childcare?

- Both employees who are parents and employees who are not parents (or have grown up children) but willing to volunteer for childcare activities might be involved.
- Many participants would like to have external professionals involved in the childcare activities: i) for structuring and coordinating the childcare activities) ii) to guarantee continuity of care during the day(s), iii) to guarantee a proper care of young children (3-6), iv) to support employees that want to volunteer but that don't have previous experience with kids v) to manage relational aspects and potential issues (e.g. conflicts, etc.)

Tensions between professional role and personal (parents):

- some of the participants said that they would like to know who the volunteers are because these volunteers/colleagues can be perceived as not trustworthy.
- Other participants reported they do not need to know who are the volunteers: they trust the organizations, the quality of services that this offer (e.g. when subscribing for summer labs initiatives they do not ask who will organize educational labs)
- Conflicts related to professional sphere could be brought in the personal sphere and viceversa.

Support and encourage participation of employees:

- provide a list of possible activities (e.g. drawings, games, labs) so potential volunteers can choose what task better fit their competences.

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- provide best practices, examples of how activities can be conducted so that other volunteers can take inspiration

Value of socializing childcare within work organization:

- participants appreciated a model where parents share time to organize childcare for a number of reasons
- children can participate to the work-life of their parents, understanding the time parents spend at work
- in organizations there are competencies, skills and talents that provide an added value to the childcare organized in the workplace. Several parents complain the poor quality of childcare services and the lack of preparation of some educators (e.g. summer period: people that take care of children do not have competencies in managing children)
- employees personal skills should be valued, childcare becomes *"a context where employees can show other aspects of their personality, skills that remain often invisible"*; soft skills could be enhanced and made more visible
- inclusion should be valued: if foreign employees are involved (e.g. to tell stories coming from their country) this could lead to a more inclusive company

These activities may improve the quality of the organizational context, with a positive impact on the company itself because they could trigger internal change, for instance, valuing the richness of competences of employees

Typologies of exchange

Structured exchange for specific periods (summer, Easter holidays, and so on)

- The activities should cover periods of the year that are not usually covered by other services. For example, in Easter and in Christmas, it is more difficult to find day camps or after-school programs. Also, special cases like teacher strikes and bank holiday weekends might require support for childcare.
- Hosting children within own organization requires effort: parents should pick-up children and bring them to their workplace. That's why parents perceive a value in the childcare organized within their organization provided that the scheduled of the childcare correspond to the work time schedule.

Contingency management:

- parents would like to have also the possibility to a support for unplanned events (see scenario #4 discussing an area where parents can stay with their children during working hours)

Parents can exchange time, competences or even resources (including money)

- If time is a resource: the system should guarantee some degree of flexibility (parents should be able to contribute with their time on different days and on different times of the day) but also require a minimal amount of effort (participants should contribute as less as one hour)
- Parents should be encouraged to share their competencies and talents, especially for what concerns activities organized in their workplace
- Activities should value talents and passions of employees since this can have a positive impact on the professional side by letting soft skills emerge.
- Some parents can volunteer giving resources or money instead of competences (in this way they feel that they contribute to the overall initiative, see Time management and reciprocity)

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Employees' participation

- There should be variability in the type of activities. In particular, for what concerns children age.
- Many of the parents might want to participate only if they know a professional educator is involved: the professional educators guarantee continuity of care (employees can give only few hours for childcare), the capacity of managing dynamics that can emerge in groups of children (conflicts, etc.)
- Some parents might be more comfortable with caring children of young age (preschoolers) or older children (8-10 years old)
- A critical factor may be to foster synergies between different levels within the company but attention might be paid for possible conflicts

User profile and personal information: reputation, trust building, privacy

- Enable parents to share invitations, activities and events to build trust and credibility in the service
- Word of mouth is more effective than email or formal/corporate communication; still, the role of organization is crucial to guarantee the quality of the initiative and formal endorsement to activities is deemed necessary.

Regarding volunteers profile, preference is express not to share personal basic information: only information needed (*"[it should not be] another social network!"*), legal documents (delegation)

Regarding information on children, there are different types of personal data related to children that can be relevant and they should be managed in different ways:

- Health-related information (such as allergies, food intolerances, clinical conditions) should be shared through the system but they should also printed in order to avoid oversights.
- Information about children behaviors or other sensitive information (such as learning difficulties or specific fragilities) should not be communicated through the platform but personally between the parent and the person taking care of the child in order to remain confidential
- Interests and passions of the children can be shared through the platform, but this information should not be mandatory.

For what concerns trust building, it is of paramount importance to have face-to-face meetings to get to know directly the people who will take care of the children; as already stated, a professional educator increases trust toward the childcare initiative.

Citizens and users classification and demand matching

- The system could support volunteers in matching their profile and skills with the activities.
- Some parents might be more comfortable with caring children of young age (preschoolers) or older children (8-10 years old).
- In order to encourage a wider participation, it might be useful to show examples or list of possible activities to support potential volunteers in identifying how they can participate.

Feedbacks, Evaluation of experiences

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- It would be better to avoid explicit negative feedbacks. In order to build trust with a system of feedback and comments on the activities might help but a moderator is needed.
- A description of past activities (type of activities, materials, etc.) might help volunteers simplify the plannning new events.

Time management and tracking of credits and debits (reciprocity)

- Cost of activities and material should be clearly visible in the system and shared among other volunteer parents.
- Volunteers can contribute with money/resources instead of time. In this way they feel to reciprocate the effort even if not directly participate.
- At least one person would like to know who contribute more in order to thank them, without knowing the exact amount of time.

Space Management

- Sharing a room for working with your children *("I work and they draw. I've already tried it and it works!"*)
- Public vs private spaces: several participants trust more a public space then a private one.
- Display a list of potential resources (spaces, locations, materials) to support volunteers to ideate potential activities

Dedicated area in the organization/company for childcare

- Caution can be taken that this kind of service could convey the wrong message of being a baby-parking and that that employees cannot take time for their children. As a participant put it: "*we are not indispensable, this approach let you believe that we should be always available and the children can be 'parked' in a dedicated area"*
- Negative reaction can arise if the area is meant to let employees work while their children are in the same place. This is not considered as a way to life-work balance: it could be an opportunity but only for managing emergency situations.
- This area can be used in different ways according to the age: self organization for grown children (8-13) or a space to stay/play with parents (0-6). Until 6 years, children needs care and they need adult presence and supervision. After they can be more autonomous, they could do homework while their parents works.
- Participants appreciate that the space is meant to let parents spend time with their children (but not to work).
- It is best suited for children 8 to 13 who are still too young to stay home alone but are enough autonomous to organize for short periods (for example, to do homework) ; furthermore, there is the possibility to use this approach to focus on empowering children and support them in being autonomous.

4.4.6. Venice CityLab

A co-design workshop has been organized in Venice CityLab. It took place on the 19th of May at the cultural restaurant "Laguna Libre" in Venice.

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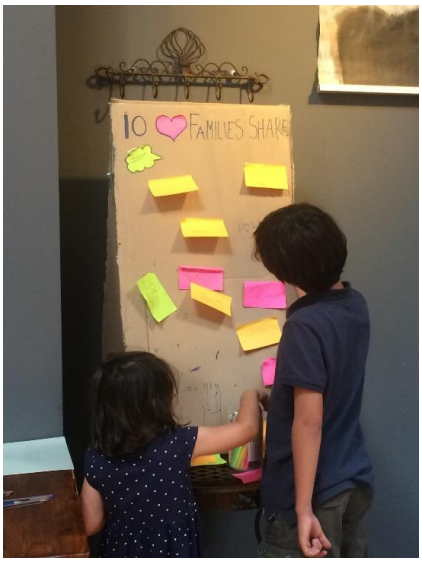

Figure 26. Pictures from the co-design workshop organized in the Venice CityLab.

Participants involved

The workshop engaged 30 parents and 2 educators. All were parents of children age 3 to 11.

Method used

We exploited the scenario-based approach (see section 4.2). At the beginning a brief presentation of the project was proposed. Participants were divided in 6 groups with around 5 people each. Each group received a booklet with instructions about what they were asked to discuss about and a cardboard support to fill in with results from their discussions.

Two different situations were presented to the groups:

- One situation regarding management of daily routines (taking and picking up children to and from school, after school activities, etc.)
- One situation regarding management of periods when schools are closed (summer and Christmas vacations, strikes, etc.).

For each situation, 5 scenarios were presented, and participants were asked for each of them to imagine how the platform could be structured. The scenarios were the following ones:

1) Creation of the profile of the adult and the child in the platform;
2) Creation of a group/community;
3) Time management;
4) Space management;
5) Updates, feedbacks and evaluation

Some grids and tables to fill and complete were provided. For every scenarios free space was left to add options and ideas. Each group had 15 minutes to work on each scenario. A bell signaled to participants that 15 minutes had passed.

Scenarios description

According to the specificities of Venice CityLab and the peculiar needs and aspects that emerged in the previous phase of interviews and focus groups, 5 scenarios were developed addressing the main issues emerged. The following table summarizes the scenarios discussed and the main topics of investigation.

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Title and short description	Topic/ Problem addressed though the scenario
#1 Scenario: "Creation of adult and child profiles"	The aim of this scenario was to make participants reflect on which information about themselves and their children they are willing to share with the other users of the platform.
#2 Scenario: "Creation of a group/community "	Participants were asked to imagine the creation of a group on the platform by thinking of the following aspects: - Ideal number of children and parents involved in the group; - Which other people could be involved (grandparents, babysitters, volunteers, etc.) - Which role could be foreseen (admin, standard user, etc.) - If the structure of the groups could be standardized or kept flexible - The information the groups should make visible to other users that can join the group - Which functionalities/features should the platform have (messages, agenda, etc.)
#3 Scenario: Time sharing	Participants were asked to think about how to organize the calendar in the platform. For instance, if it is better to create two agendas, one for the parent and the other one for the child, or one only. It was asked to the groups to reflect on the opportunity to add a time banking system too.
#4 Space management	Participants were asked to reflect about the places where the childcare activities could be carried out. In particular, they were asked to think about pros and cons of private houses, schools, church owned spaces, etc. and to propose other places they consider suitable.
#5 Updates, feedbacks and evaluation	In this scenario participants had to think about the opportunity to share pictures and videos of the activities carried out on the platform , to evaluate/rate the activity. They were also asked to reflect about how to manage negative feedbacks.

Results

Creating communities and managing groups of parents and other volunteers

- **Ideal number of parents involved in a group:** from 3 to 8 people
- **Ideal number of children**: from 6 to more than 10 (depending on the number of the available parents). Only one group has explicitly agreed on the fact that in actual caring activities one adult should take care of up to 3 kids also depending on age.
- **Other people to be involved**: most of the groups agreed in not involving grandparents but involving babysitters (also in the modality «babysitter sharing») and also volunteers if qualified. Also, au-pair girls/boys could be involved.
- **Roles in the group**: the groups identified the following roles:
    1. Group administrator/coordinator
    2. «town administrator» a contact person for each town (in case the platform will spread)
    3. An external supervisor for solving conflicts
    4. Standard (individual) profile
    5. Family profile

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6. Babysitter/au pair profile

- **Structure**: a flexible structure for the groups is considered better than a standardized one.
- **Information to be visible to other users**: the groups indicated the following information:
  1. Name of the group
  2. Short description (number of families and number of children) (with indication if children are vaccinated or not)
  3. Location
  4. Administrator
  5. Children's age
  6. Activities carried out within the group
  7. Schools attended by children
- **Functionalities of the platform**: the proposed functionalities (messages, shared agenda, the possibility to add/invite a parent) are confirmed by all groups. Messages should be private or public (to the whole group) and the agenda should be divided in hours and half days. Some groups suggested other functionalities such as an identification algorithm (to match demand and the offer), a public chat and a geo referenced map showing where the children are.

Typologies of exchange

Two different situations were presented to the groups:

- One situation regarding **management of daily routine** (taking and picking up children to and from school, after school activities, etc.)

- One situation regarding **management of periods when schools are closed** (summer and Christmas vacations, strikes, etc.).

Each group worked on the same 5 scenarios. No relevant differences emerged among the groups according to the different situations. Different views emerged but they did not seem to depend on the described situation (daily routine vs schools closed).

User profile and personal information: reputation, trust building, privacy

Adult profile:

- **Personal information:** most of the groups agreed in sharing personal information such as name, surname, age, job, address, contacts (phone and e-mail);
- **Information about children:** all the groups agreed on sharing the number and the age of children, and the school they attend;
- **Competences:** all the groups agreed in indicating competences of the parent (e.g. speak a foreign language, good cook, etc.) and some groups suggested also to add "hobbies" or "other interests"
- **Other info: the groups** suggested also to add the following information:
  1. Days and time of availability both needed and offered
  2. Area/neighborhood of availability
  3. Past experience with other children
  4. Private means of transportation
  5. First aid course carried out (yes/no)
  6. Single parent (yes/no)
  7. Available spaces for children (garden, rooms inside the house) and availability to keep children at home

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8. Animals (yes/no)
9. Smoker (yes/no)
10. Availability to make outdoor activities (trips)
11. Declaration for relieving parents who are in charge of care of responsibility

- **Other functionalities:** a group proposed to add «feedbacks from other users» and the functionality to upload the ID (visible to the admin of the platform only)

Children profile:

- **Personal information**: majority of the groups agreed that personal information of children such as name, surname, sex, age should be shared only with members of the group, others believe that name, surname and sex should not be indicated at all.
- **Food issues**: most of the groups agreed in indicating information about allergies, intolerances and specific diets (vegetarian/vegan);
- **Health issues**: most of the groups agreed in providing a module (to be uploaded or just online) with information regarding health conditions of the children. With specific reference to the administration of medicines, they should be administered based on previous permission of the parent only, except for life-saving drugs that have to be indicated in the module. Some groups believe that info concerning health conditions should be shared with the administrator of the group only (and not with all other parents/members);
- **Other information**: a group considered the following information as relevant: vaccinated/no vaccinated, sport activities.
- **Images**: all the groups agreed in not inserting pictures of the children.

Citizens and users classification and demand matching

This scenario was merged with the previous one.

Feedbacks, Evaluation of experiences

With reference to this scenario the groups had different opinions and points of view:

- **Pictures/videos sharing**: two groups found it useful to share pictures or videos of the activities carried out, but it should be on a voluntary basis. One group suggested to put pics but with children not identifiable. The groups which did not consider it useful to share pics and videos highlighted how this could distract parents in the vigilance activity;
- **Feedbacks and evaluation**: in general it is considered positive. A group suggested to add the possibility to give a rating to the whole group instead to the single activities. One group indicated that it is good to rate the overall experience, the single activities, the collaboration in the group and among the single members, the relationship among the children. Another group think that such a system could create conflicts and would be better only to rate the relationship among the children. A group suggests also to insert an evaluation about the places highlighting possible issues and the possibility to insert practical suggestions of parents.
- **Negative feedbacks**: the groups have different positions about the management of negative feedbacks:
  1. Some participants suggested to add an evaluation questionnaire on the parent's profile.
  2. Other groups think it is better that potential issues are managed internally in the group.

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3. For other groups negative feedbacks should not be foreseen, letting people free to move to other groups.
4. For another group negative feedback should be managed by an external supervisor who can deal with conflicts.

Time management and tracking of credits and debits (reciprocity)

- **Calendar**: the majority of the groups prefers to keep two divided calendars one for the parent and the other one for child;
- **Synchronization with individual online agendas**: it is suggested to keep it optional;
- **Time banking**: all groups agreed in not considering time banking as a good option, unless it is kept flexible. It is considered important that the time exchange is agreed among the parents of the group; two groups out of six suggested to measure time with a weighting system in order to give more «weight» to particularly qualified activities (e.g. going to visit a museum, teaching to children how to prepare a cake and so on);
- **Other functionalities**:
  1. A group suggested to make «parent activities» and «child activities» well visible;
  2. All the groups agreed on including a form where parents can add details about activities he/she intends to carry out in the future;
  3. A group suggests to use different colours to highlight availability and non-availability periods (e.g. green for the availability ones and red for the non-availability ones).

Space Management

- **Private houses**: in general, they are considered suitable spaces. Three groups suggest inserting in the platform a description of the spaces and the available facilities. The pros of a private house is that it is for free but usually the space is limited so the number of children that can be involved is limited. The maximum number of children should be indicated;
- **Schools**: in general they are considered suitable spaces. They should be made available for free in order to be used.
- **Church owned premises**: in general they are considered suitable spaces.
- **Functionalities**: the groups agreed with the proposed functionalities: mapping of the available spaces, tagging/geo-referencing, information about conditions for the spaces use. A group suggested to add information about the usability of the places according to weather conditions
- **Other places**: museums, libraries, cinemas. In general outdoor should be well delimited for safety reasons.

5. Mapping of needs at the international level and requirements prioritization

The last part of the work for WP1 was aimed at laying the basis for the design of the first version of the Families_Share platform. Specifically, the goals were (1) the aggregation of the needs collected at the local level and (2) the prioritization of the functionalities emerged in the local co-design workshops.

Those two tasks have been conducted collectively by all partners in the last day of the consortium meeting in Limassol on June 19th. Before the meeting, each CityLab has been asked by the WP leaders (the FBK team) to summarize the findings emerged from the local involvement of stakeholders. Each CityLab provided the

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summary following the proposed template which was based on the 6 main topics used as prompts for the investigation of the CityLab needs (see figure 27). The results are presented in section 4.4. and all the summaries, called logbooks, can be found in appendix while in the following we discuss the common and divergent aspects.

Results

For the scenario/tasks explored, please fill the table with the main results gathered through workshop according with the main issues related to Families_Share platform

Topic 1. Creating communities and managing groups of parents and other volunteers	
Results	[Report here results related to how groups can be created and managed (for instance: personal invitation, ..), on how participation and engagement can be sustained, how new members can be recruited, etc)
Notes	

Topic 2. Typology of exchange	
Results	[Report here findings related to the different types of exchange needed by parents and how the platform might be designed to support these different types of exchange. Types of exchange: Structured exchange to organize specific periods (summer holidays), Routinized exchange for routines problems (e.g. accompanying children from home to school) - parents could plan time exchanges in advance according to their schedule Supporting contingency management (last minute childcare service, delays, last minute changing of pick up or drop off location).
Notes	

Figure 17. The format for the logbooks used to summarize the results in each CityLab as part of the meeting in Limassol

The meeting was organized as a collaborative workshop and divided in two main parts: the first one, held in the morning, had the goal to aggregate and reconciliate the needs collected at the local level and the second one, held in the afternoon, aimed at prioritizing the functionalities of the platform.

5.1 Aggregation and reconciliation of the user needs

The workshop was run as an affinity diagramming exercise which is a well-known approach in interaction design (Beyer & Holtzblatt, 1999). The exercise consists in clustering concepts (like ideas, when used in brainstorming or pieces of evidence when used in design, as in our case) by aggregating similar concepts in the same cluster while allowing the clusters themselves to emerge from data rather than predefine them. In our case, we kept the original 6 topics as the starting point of the classification but at part of each them we clustered the needs collected at different CityLabs.

The exercise was guided by a facilitator and all the people attending the meeting participated by playing the "advocates" of their respective CityLab, that is, by presenting the specific points of view that emerged from the respective field studies related to the topics investigated al the local level. This approach allowed the consortium to quickly aggregate the insights and reconcile the differences that emerged. For each topic, the facilitator asked for a piece of evidence from one of the CityLabs and put it on the board while asking the other partners to support or argue against the specific aspect under discussion. In case of support, it would be simply marked as such. On the other hand, if a contradictory insight was actually raised from one of the CityLabs, the facilitator guided a short discussion that eventually would have brought either to a common point of view (reconciliation) or to post a different concept clearly marked as opposition to the one under discussion.

It is worth noting that the goal of the exercise was not to force reconciliation but rather to foster discussions aimed to gain a deeper understanding of the user needs and eventually to appreciate the differences that emerged from the different CityLabs.

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5.1.1 Results of the aggregation and reconciliation exercise

Figure 28 shows the 6 boards dedicated to the topic discussion at the end of the discussion. For each topic, a single board was used and the main concepts emerged were organized and "supported" by all the CityLabs or divided in different concepts in opposition among each other.

Figure 28. The 6 boards corresponding to the main topics after the phase of aggregation and reconciliation

Here below, we are summarizing the results for each concept (board).

Topic 1: **creating communities and managing groups of parents**. This topic refers to the fact that the platform is based on the idea of creating relatively small communities (from few parents to around 50 people) for self-organization and the relative issues that this might rise (e.g. becoming part of the group, roles and responsibilities, sharing common values, etc.).

Concerning groups management and roles, it emerged that the stakeholders of all the CityLabs agreed in having a group administrator as well as the approval by the other members of a group for letting a new member to enter the group. In the Cokido platform, there are five distinct roles in a group with different responsibilities (who takes care of the agenda, who takes care of the toys and other material, who manages the financial transactions, who takes care of the space and the administrator). For the corporate case study in FBK, it might be important that the HR department is in charge of defining groups but still it is important to have a specific role of administration for the groups.

About the resolution of conflicts, all the CityLabs recognized the importance of having a moderator, who should be an external person. There was a discussion the possibilities to solve conflicts horizontally (among the members of a group) or vertically (resorting to an external authority, such as the HR department in the case of the Trento CityLab). In any case, it is required an external community manager to monitor the groups and help them in several aspects, included conflict management. Furthermore, even in the vertical communities, it might be important for the groups to be educated in conflict management.

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Finally, the possibility of involving external professional educators was discussed. Although this possibility was emerged in all the CityLabs, in most cases this was seen as an emergency solution in case a group cannot take care of itself in a specific situation. For these cases, there also was a discussion about involving different figures such as "au pair" helpers and the fact that their involvement might be ethically sensitive, as paid childminders in the case of baby sitters who should be legally hired/appointed by parents, and as members of the family in au-pair case although each family shall negotiate their availability and involvement privately and in advance. Mixing paid and unpaid care, as well as nuanced forms of care in between, poses similar problems to the issue of valuing/banking time or interpreting time sharing in a more flexible and non quantitative way, therefore it's an aspect to be kept monitored during the pilots. In FBK, the issue was raised several times and it emerges that in a corporate setting, for various reasons, it might be important to have a professional person involved.

Topic 2: typology of exchange. Parents have different types of needs and, consequently, different types of time exchange can be useful in different situations. These different types of exchange affect how the exchange is planned and how parents may coordinate the reciprocal support.

It emerged that three types of activities were proposed in the CityLabs. (i) *Regular activities (or routine)* are those activities that happen regularly for some time, like organizing a trip to the swimming pool every Monday, or agreeing on a regular division of tasks for take to school and pick ups . (ii) *Flexible activities* are those activities that are organized once in a while and have a greater degree of freedom in when and how to do them: like organizing a week-long summer camp in August. Finally, (iii) *last minute or "emergency" activities* are those that need to be organized to respond to unexpected or unplanned events, like for example, in the case of strikes in schools when parents need to take care of children during working hours. With the exception of the Bologna CityLab, where only the first two were discussed, all the other CityLabs appreciated all the three types of typology. Still, there are differences: in Trento, the "last minute" activities were the most appreciated while the regular activities appear to be more difficult because of the distance from the workplace to the living places; in Venice, there were an appreciation of all the three but their most important aspect was the need to foster the community values; in Thessaloniki, it emerged the specific need, as a special case of regular activities, for educational activities in support to lower income participants.

The Bologna CityLab suggests to add the possibility to share events among the members of the group.

It was also discussed as for the different typologies, different support documentation needs to be prepared and made available in order to make the groups aware of the different logistical and organizational aspects.

Finally, in the Trento CityLab, it emerged the need of a strong collaboration with the company in order to value the participation of employees (both parents and volunteers) in the organization.

Topic 3: user profiling & reputation and trust. User profile of members is crucial in collaborative platforms to raise trust among people and enhance new connections. Still, this may raise a number of questions: which information should people have about other members in order to trust them? Which are more relevant to build trust among participants? Which information would participants exchange? In Families Share also children's information will be shared, such as age, interest, specific needs: wow should the platform manage such sensitive information?

For what concerns to the adults' profile, in Venice CityLab it emerged as important the valorisation of the adult's competences and skills while in Trento, it emerges the need to provide only a few information at the beginning and to allow the person to provide more information as s/he begins to collaborate. This incremental version was also shared by the Kortrijk CityLab. At present, in Cokido, a number of data is asked

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mainly for contacts (e-mail, mobile phone, secondary phone, emergency phone, whatsapp, address) while the "about yourself" section can be filled in different moments.

The children profile was much more contentious. In Venice, it emerged as important to share information about the health of the children while in Trento, parents prefer that health problems are shared only with the other parents who actually will take care of the children and not with the whole group. In Bologna, there was the same concern and they also reflected that it is important not collect and share sensitive personal information, including photos. There are different considerations among the need to indicate the gender of a child: while in Belgium is mandatory by law, the situation is less clear in other countries. We agreed to collect and check this type of requirements in each country.

Regarding trust building, we discussed the importance of offline meetings among parents to build and increase trust. In the Kortrijk CityLab trust is built only in offline activities: they suggest to organize a kick off moment for the group (barbeque, picnic, etc.). Face-to-face meetings are considered preferable also for the ex-post phase and in general for management of conflicts.

Finally, it also emerged the need to provide support to organize training events and workshop on specific topics of interest for childcare such as first aid or how to deal with children with particular needs.

Topic 4: feedback and evaluation. What should be evaluated? What kind of feedback is important to share? How to manage negative experiences?

There was a general agreement that the activities should be evaluated in order to improve them. In the Venice CityLab, it was discussed to evaluate also the relationship among the children of the group although in the Trento CityLab the risks of creation of hierarchies among children in the frame of a company emerged.

Regarding the evaluation of the educational activities or the parents involved, giving a negative feedback to a person might be detrimental for the entire group although if there is a discontent, it is likely to emerge outside the platform. A possible model is an approach similar to the Linkedin system where it is possible to endorse a person for a skill. In the Kortrijk CityLab, a person can be reported to the platform but the other members of the group do not know it (anonymous reporting). In the Trento CityLab, this aspect was explicitly discussed and it emerged that both negative and positive feedbacks might be detrimental in a corporate setting because the idea of being judged might prevent some employee to participate.

Topic 5: time management and debits/credits. Peer-to-peer platforms may or may not track time (in terms of credits and debts). Time can be exchanged for the same amount of time or it might be voluntarily donated. Which are the pros and cons of these two different ways of managing members' contributions? Different points of view emerged in the different CityLabs demonstrating that the scoring of the time that the parents and the volunteers provide to the group is a critical and sensitive issue that should be dealt with attention and flexibility in the platform. From the Venice CityLab, it emerged the requirement to track time with flexibility and to adopt a "weighting" system where more qualified activities (e.g. taking children to the museum) are valued more. On the contrary, in Trento CityLab, it emerged the preference for a non-explicit tracking of time: while a balanced contribution was regarded as positive, the moral pressure for reciprocity is considered as possibly harmful. This specific aspect is quite different from what emerged in Venice CityLab and to some extent also the other CityLabs as well: for the Bologna CityLab, it is considered useful to show in the profile the hours given and also the debts of time. The Kortrijk CityLab observed that for their experience is important to measure time, in the back-end, but that they do not adopt a time banking system. Nevertheless, the possibility for contributing in other ways other than providing time (for example by preparing food or even by money) was considered beneficial in almost all CityLabs.

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For what concern the aspect of time management, it is an issue for large groups but it could necessitate support also for medium and small groups. The Venice CityLab reported that the largest activity they have considered is the organization and management of a summer camp involving over 100 children under a scheme of mutual support. In this case, parents are not forced but they are encouraged to offer their time since the aim is to have a totally volunteer and free activity (a small fee is collected but only for insurance and materials). Beyond parents, the community involves teenagers as volunteer educators. All the communication for the organization is presently managed through Whatsapp. It is a widespread model in many Italian regions and would would be interesting to support this experience through the Families_Share platform. The Venice CityLab suggested the possibility to have an algorithm to the automatic allocation of available time of parents and volunteers in order to balance the different needs while assuring a constant presence of parents and replacements; furthermore, the possibility of synchronization with personal calendars had been mentioned. The Kortrijk CityLab then explained the system they adopt: 1) selection of the time of needed childcare, 2) selection of the availability in providing childcare, 3) final planning. The agendas of the group are closed very soon and in case of changes (upcoming unavailability of the parents) the group can fix them also, if needed, by appointing external babysitting services.

We identified two possible models to deal with time allocation: (1) the "doodle" and the "calender" approaches consist in making visible the availability and the constraints of the different members of the group and (2) an automatic system that, after considering the availably of the individuals, assign the time slots. The former is probably more suitable for small and medium groups, it might also support larger groups; while the latter might be more complicated but in could be necessary for larger groups.

Topic 6: space management. Shared care services could be either delivered in private spaces (homes) or in public spaces (parks, public libraries, children centres, sport centres etc.). Within this topic, we explored perception of safety and quality of space.

The Kortrijk CityLab uses public spaces only and limited to those that are child-friendly, like schools. They do not allow the use private houses for safety reasons. Furthermore, they have set up a process on how to check a place with respect to safety and feasibly. Once a specific space is "certified", the groups can use it and template contracts are proposed to quickly reach an agreement for the use. A somehow similar situation emerged in Trento, because of the corporate setting, the CityLabs used spaces of the organizations (FBK and the others) and not private space. In FBK, a dedicated office that take care of the security of the FBK premises certified the spaces used and a room in FBK premises had been set up explicitly on this purpose (although other spaces, including some labs and the garden are often employed for some of the activities). Yet, for other organizations, the use of internal space might be complicated. On the other hand, the use of private houses was considered suitable especially for the routine activities although there might be an issue for insurance that needs to be clarified.

It is worth noting that there are differences about the use of public spaces in different countries: for example, in Greece, schools can provide space for public use but it should be free while in Italy, schools usually rent their space for this kind of activities, they would charge the parents and most likely ask for an association with whom setting up a contract and define liabilities/insurance issues.

5.1.2 Summing up the user needs

In conclusion, the affinity diagramming exercise pointed out as there are many similar needs emerging from the different CityLabs, namely:

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- The platform should support the creation and the management of “trusted” group of people aimed at sharing childcare duties in several different ways; volunteering and community values are the driving forces that are recognized and should be fostered.
- There are three main typologies of activities that need to be supported: regular, flexible and possibly the last-minute or emergency activities.
- Offline encounters are important for trust building and the platform should encourage face-to-face communication and coordination.
- Support in time allocation is crucial and it should be a major functionality (or set of functionalities) in the platform.
- Management of space is critical and platform should support the group in finding, assessing and, when needed, contracting a proper location.

Nevertheless, there are few but important divergences that can be ascribed to the different “cultures” that are inherent in each CityLab. In particular, the common aspects are the following:

- The emphasis on community values need to be instantiated in different ways: in particular for the organization/corporation cases, these values still hold but they have to be reflected on the organization level too.
- Reciprocity and fair amount of contribution is always regarded as important but in different CityLabs there emerged different sensitives about how to compute and made public the amount of time dedicated.
- Evaluation of activities is important but explicit feedback is a sensitive issue that emerged in different ways in the various CityLabs.
- Requirements and contracts for use of space might differ according to local laws and regulation.

5.2 Toward the platform: requirements prioritization and basic concepts

After the initial part of aggregation and reconciliation of the user needs, the goal was to derive the technical requirements for the design and implementation of the platform.

The activity started in the afternoon with asking all the participants to reflect individually, for 15 minutes, the journey of the user inside the platform: that is, what are the different steps that a person will take in entering and using the platform. Each participant individually defined the user journey, using post-it for each action. Then, the participants split in two groups to discuss their individual contributions and to define a shared “user journey” (Figure xx).

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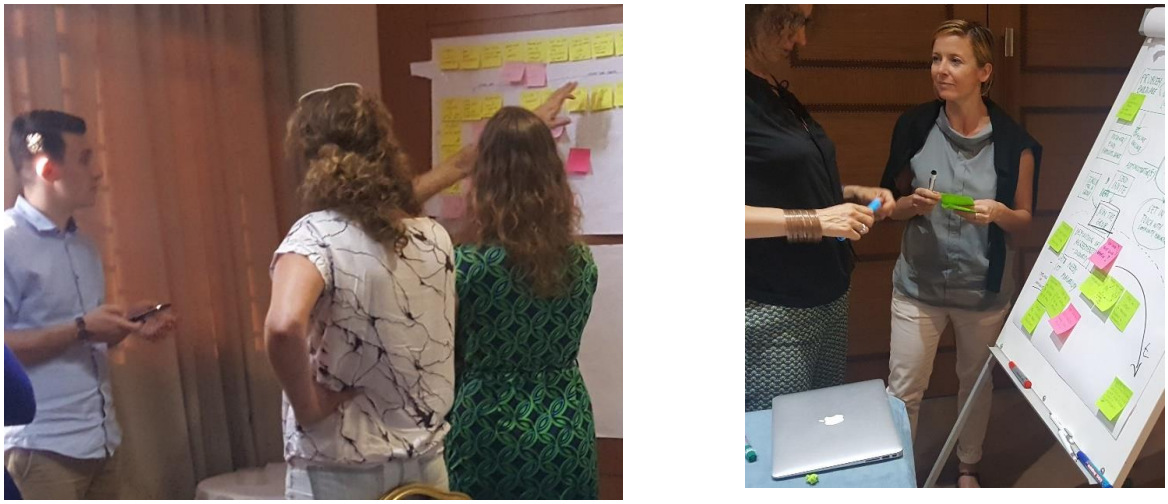

Figure 29. Discussion in the two separate groups on the user journey in the Families_Share platform.

After the groups discussion, the outcomes of the groups discussed together to compare them with the aim to reach a shared understanding of the journey as a first step to define the system functionalities of the Families_Share platform.

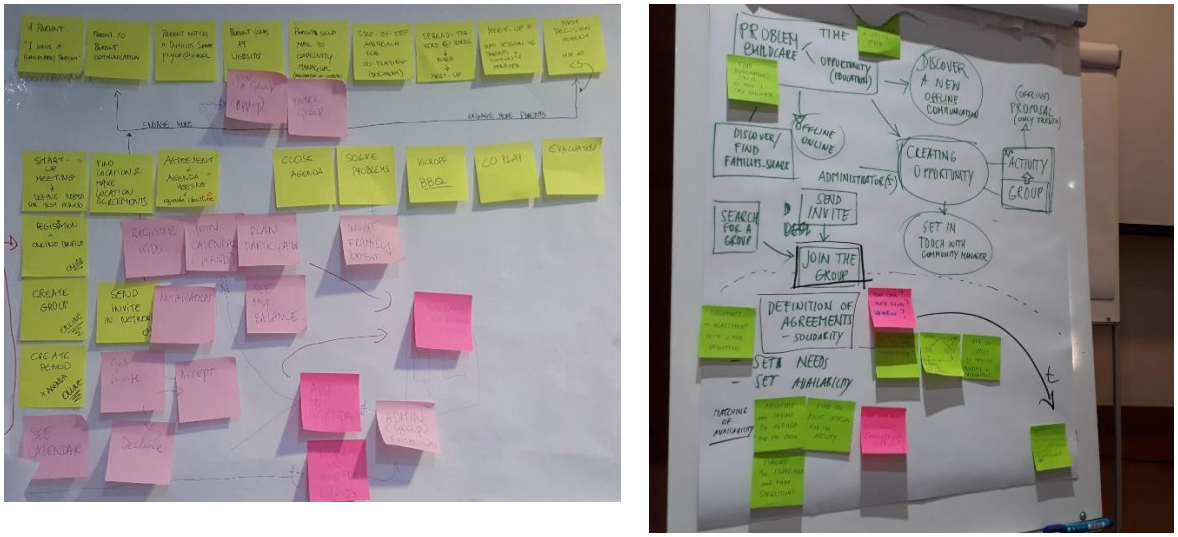

Figure 30. The outcomes of the two user journeys.

One of the first aspects that emerged was the need to define a common terminology to refer to the different aspects of the journey. The following vocabulary summarizes the main points emerged and the agreement reached.

Community: Families Share will be composed of a number of separated communities (which for the time of the project correspond to the individual CityLab). Each community holds several groups. From a technical point of view, a community corresponds to an instance of a single application. Therefore, the users do not see the community inside the app but rather in choosing the app they enter a community. This will allow dealing with some of the "cultural" differences highlighted above in terms of predefined settings in the app.

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For the sake of the experimentation in the Families_Share project, Vilabs will manage the server for the 7 apps. Further discussions are needed (also related to the exploitation and the business models) to reach an agreement on how to deal with the infrastructure after the end of the project.

Group: In each community, groups can be created (see figure xx). They represent the "circles of trust" within which people share and organize ***activities***. Groups can decide whether to be visible or not. Groups can vary with respect to their composition (not only parents but also external service providers such as baby sitters) and the number of participants. From a formal point of view, groups are characterized by the following elements: name; description/goal of the group; whether closed or open to new members; a list of members.

Activity: Activities can be created within groups. For the sake of simplicity, the platform should provide support only for those activities that involve a group of people concerning with the need to organize shared childcare. The creation of an activity is preferably preceded by an offline discussion. The aim is not to replace Facebook, Whatsapp or other existing platforms for discussion or organization but rather to support existing local communities based on trust.

User: each user can belong to one or more groups. In order for a user to join several communities, s/he has to get access to different applications. Users may have different **roles** in different groups:

Users can have different roles: administrator or standard User (it might be useful to separate parents from other volunteers). There might be more than one administrator for each group.

In the Cokido platform, in order to encourage the distribution of tasks within the groups, there are other roles such as: the "financial" manager, the person in charge of negotiating and managing the spaces and location, etc. In the first release, these information and suggestions can be integrated within the Group profile.

Community management: it is an external role assumed by the community or organization that endorses the specific community (which are the partners for the sake of the project life). The community management team configures the environment for the groups (for example, it decides whether the groups can be created freely or if there is the need for an approval, which might be the case in the "corporate communities" cases). The team also define the rules of participation (the need for reciprocity, for example) and prepares, if needed, the template for contracts and other documents that have to be used by the groups. Finally, it appoints one or more **community managers** who provide support for the groups.

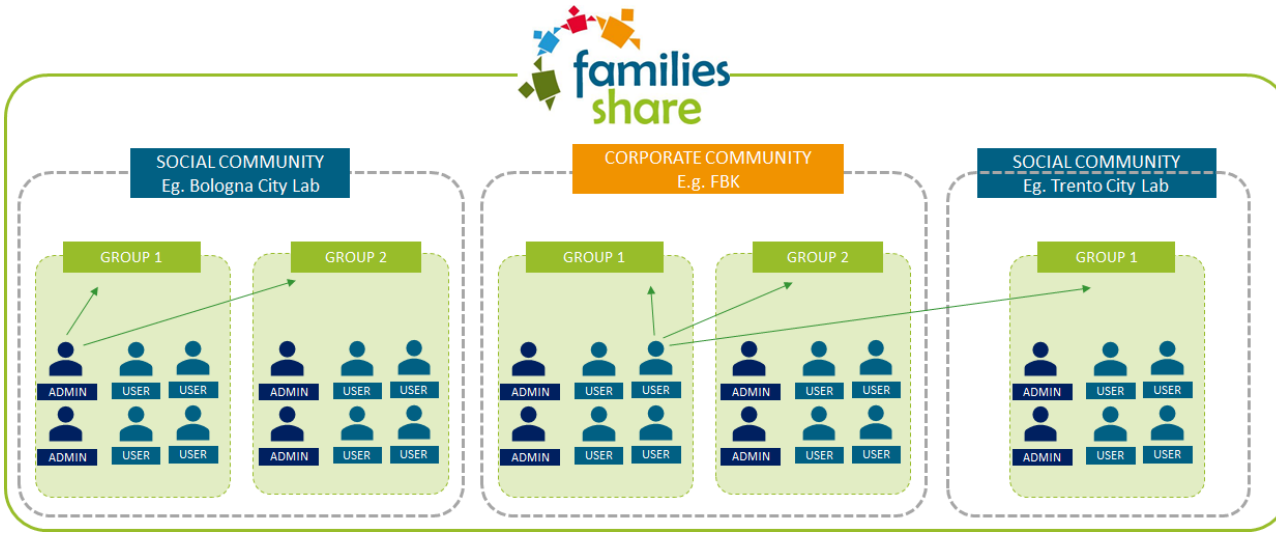

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Figure 31. A schematic representation of the relation between communities and groups in Families_Share

Figure xx describes the Families_Share user journey that emerged from the discussion of the two groups. The journey (which is still tentative and it will be further elaborated as part of the WP3 work), comprises 7 distinct steps plus an initial step of configuration of the community:

- *Configure community*: the community management team defines the rules of engagement specific for the community; it prepares the templates for the main documents and configures the app accordingly.
- *Discover:* in this step, the users discover the existence of a specific community from public channels online or offline (in the case of social community) or from invitations (in the case of organizations/corporates communities). The participation to a community involves to download, install and register a specific app providing the required information as specified in the community's rules of engagement.
- *Search:* the users explore the apps to find groups to join, learn about possible activities (to participate or as an inspiration to organize similar activities). Users can also join groups via a direct invitation. Depending on the community, a user is allowed to enter a specific need as a way to ask for the organization of a specific activity.
- *Group membership*: users can create or request to join a group. The rules for creation and for assessing a request of membership are decided by the community management team and made clear as part of the rules of engagement in the community.
- *Group life offline*: a number of tasks are designed to be tackled offline in order to foster trust as well as to simplify the app; stakeholders needs analysis showed that there is no need to create a new social communication app. The app is mainly meant to support the definition and the management of the activities.
- *Create & manage an activity:* the process of creating an activity takes few configurations: it requires to decide the type, time and location of the activity. Further details of the activity are encouraged to be discussed offline.
- *Manage participation:* this is the core step of the process on which the app is meant to provide adequate support: it consists to collect children participation but mainly to negotiate the time allocation among participating parents compatible with their respective time availability and the community rules (for example with respect to time debts/credits and reciprocity).
- *Offline kick-off and meeting*: the step of the journey is highly recommended to foster trust and community building values.
- *Run an activity*: during the time in which the activity is run, the app makes available the relevant information about the children and the participating parents.
- *Evaluate the activity:* at the end of an activity, the app provides adequate support to evaluate and to give feedback to the organizers as well as to the community managers. The type of evaluation and feedback that can be provided are defined in the community's rules of engagement.

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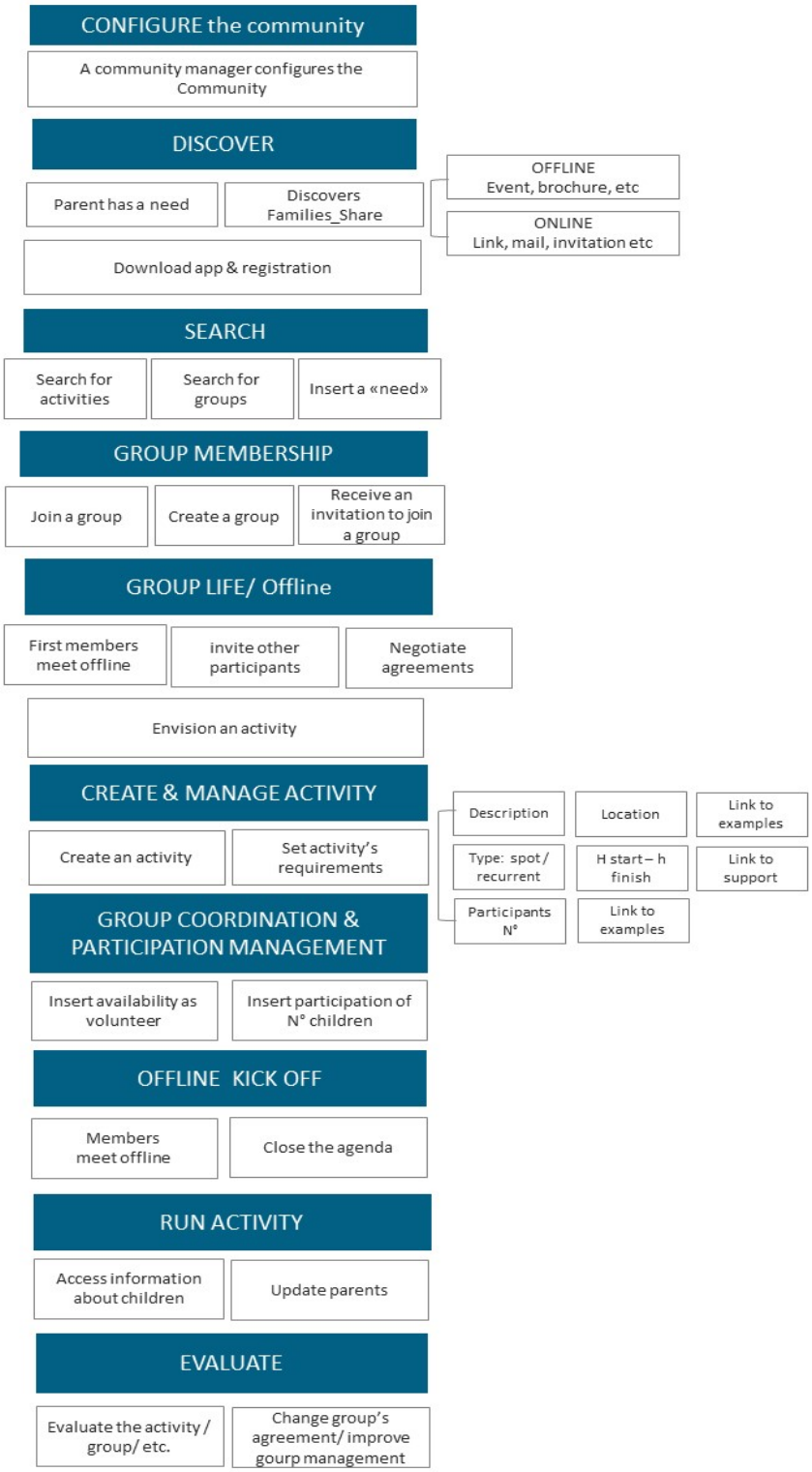

Figure 32. draft of the User Journey, to be refined

The definition of the Families_Share user journey, although preliminary and still tentative, provided the basis for the discussion about the main functionalities that are reported in table XX.

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FUNCTIONALITY	DESCRIPTION
Download the application	By downloading the app the user join a specific community, which might be open to everybody, depends on the community.
Registration	user will need to fill the consent form and then to do the authentication;
Creation of a group	A group has: i)name; ii)description The user that creates a group becomes automatically a "Group administrator/manager" Other roles are, if needed, allocated. Groups can be: • Public • private
Join a group	• Users can ask to join a group • A user is part of a group when one of the administrators approve the request
Invitation to join a group	Members of the groups can send an invitation to join the group (mail?)
Needs	Users that access a community can insert a **need** • Description • Dates

Activities	Activities can be created within the groups
	• Users (admin or simple user) can create (and confirm) an activity
	• Activities can be:
	  ○ Flexible
	  ○ Regular
	  ○ "Last minute"
	• Each activity has
	  ○ Name
	  ○ Type (regular, spot)
	  ○ Description
	  ○ Date
	  ○ H start – h finish
	  ○ Place
	  ○ Participants
	  ○ Recurrence
	• coverage of activity= timeslots + actors required;
	the participants are group members
	If a person wants to take part to an activity he/she needs to be part of a group.

Calendar	Each group has a shared **calendar**
	○ A **calendar** system is the tool to coordinate the shared childcare activities. It should have the following features:
	○ It is possible to join the activity (through the calendar) as an actor and give or not give the availability to share time for childcare
	○ The calendar should allow the user to insert his/her availability according to the needs of the activity
	○ A discussion about the agenda's features emerged. Different types of calendar have been discussed:
	  ▪ the Google Calendar
	  ▪ the Doodle

Search	Users can search activities or groups (that are visible only if they are "public")
User profile	Name

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	Role in the group: admin, financial, manage agenda, location, etc. Description: optional Add children profile Add other external volunteers (such as family members or siblings) and professional educators.
TO BE DEFINED	From the creation of an activity to its confirmation (closure) there will be other functionalities to add in order to make sure that every aspects for organizing a shared childcare activity have been covered: • place • max number of participants, etc Visibility: some activities are made visible to provide examples for other groups or as a way to attract new group members)
Evaluation	Possibility to **evaluate the activity/service** (group's activities);
Other functionalities	Other **functionalities** • Book toys/materials and show external events are not important at this stage;
Configuration	**Configuration** of groups should be available • Necessary to define parameters that can be tuned when defining a group; Some of configurations may be allowed or restricted at the community level.

The refinement of the journey map as well as the discussions for the technical definition and the prioritization of the functionalities will be the core of the work of WP3.

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Appendices

Appendix 1. The three levels of engagement

Families_Share stakeholders includes public authorities, private companies and a full range of informal networks of citizens (e.g. local Time Banks, parents' networks, social streets) and families, with a special attention on low-income families.

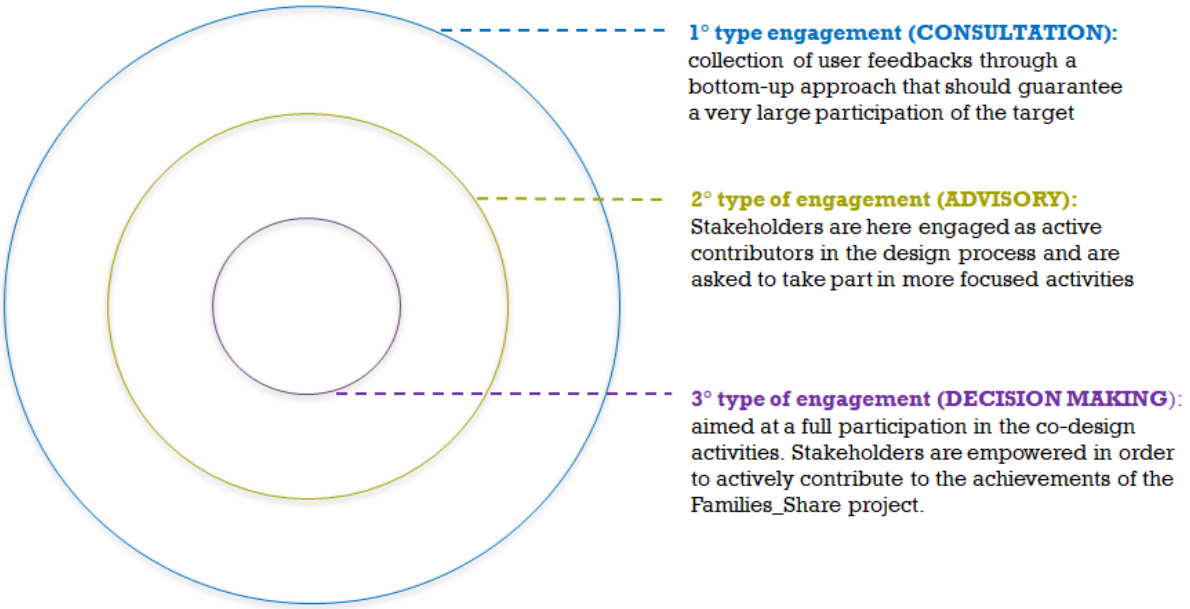
Given the heterogeneity of stakeholders involved, Families_Share foresee an engagement strategy that considers different levels of engagement and a number of methods that will be used according to the goals of the action and the stakeholders' characteristics.

Starting from guidelines on stakeholder engagement strategies, Families_Share will consider three main types of engagement that will be activated at the different phases of the project life, that range from a "light" participation, which includes participation in activities with low demand in terms of time and effort (such as questionnaires and interviews) to a "committed" participation, which includes participation in activities with a higher demand in terms of time and effort.

1° type engagement (CONSULTATION): aimed at collecting user needs and user feedbacks through a bottom-up approach that should guarantee a very large participation of the target users (possibly all the future users of the services at every level). Exploited methodologies range from questionnaires, interviews, quick evaluation of design opportunities (in the form of liking or disliking scenarios, for example).

2° type of engagement (ADVISORY): aimed at informing the co-design Families_Share services. Stakeholders are here engaged as active contributors in the design process and are asked to take part in more focused activities such as Town hall meetings, co-design workshops, etc.

3° type of engagement (DECISION MAKING): aimed at a full participation in the co-design activities. Stakeholders are empowered in order to actively contribute to the achievements of the Families_Share project. The strategic stance taken in this task is that co-design is a negotiation activity where the designers help the stakeholders to envision and communicate their (often underspecified) desiderata and then mediate them with the constraints coming from the technological development side. This negotiation between social and technical aspects is in line with the adopted approach about re-use of the existing lower layers of a pre-existing platform in WP2.



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Appendix 2. Protocol for data collection and sharing

STEP 1. Collection of personal information about stakeholders involved.

- For each City Pilot, partners will collect and store personal information using a common Template called "Internal Record of stakeholder involved".
    - Note that the file is composed of two parts: the first part contains anonymous data while the second contains the personal information of the stakeholders involved.
- This file should be kept **confidential** and **stored to a private database** maintained by the referring partners on his own responsibility.
- Each entry (see below) represents a stakeholder involved in one or more activities by one partner during the project.
- Data collected are the following:
    - **CityLab (Trento, Bologna, Thessaloniki, etc..)**
    - **Gender**
    - **Type of stakeholder**
    - **Low Digital Literacy (Yes, No, Not Available)**
    - **Low Income (Yes, No, Not Available)**
    - **Migrant (Yes, No, Not Available)**
    - **Precarious contract (Yes, No, Not Available)**
    - *Name*
    - *Surname*
    - *Description of the stakeholder/role (if relevant)*
    - *Dates in which the persona has been involved (if relevant)*
    - *Contact info*

- The elements in bold are meant to be shared for the sake of checking the KPIs of the project. Of course, the information collected (both the shared and the private) might be different in the various CityLabs and perhaps also in among different studies. The important aspect is that there is a common set of data that we all try to collect (the data related to KPI) and keep updated bi-weekly.
- Other shared data should be made available as part of the documentation of the different studies and interventions. In no cases, personal data or information that may reveal private or sensitive information should be shared in the consortium. Any partner should maintain this data under their responsibility and in accordance to the local laws and regulations.

EXAMPLE												
This part can be shared with other partners through Team Drive							This part will be kept confidential by each partner					
Gender	Type of stakeholder	Age	Low Digital Litera	Low income	Precarious co	Migrant	Surname	Name	email	phone	Activities	Description of stakeholder
Female	HR representative	34	N	N	N	N	Maria	Rossi	maria.rossi@fbk.eu	342432	INT_03.05.18; FG_2	Head of the team on Work/Life
Male	HR representative	45	N	N	Y	N	Mario	Rossi	mario.rossi@fbk.eu	342432	FG_01.02.18;	Member of the team on Work/Li
Male	Parent	34	N	NA	NA	N						Employee FBK
Male	Parent	23	N	NA	NA	N						Employee Unitn
Male	Parent	22	N	NA	NA	N						Employee Coop
Male	Parent	34	N	NA	NA	N						Employee Famiglia Cooperativa
Male	ONG representative	45	N	NA	NA	N						test stakeholder for a test quest
Male	Parent	43	N	NA	NA	N						test stakeholder for a test quest
Male	Parent	40	N	NA	NA	Y						test stakeholder for a test quest
Male	Timebank expert	36	N	NA	NA	Y						test stakeholder for a test quest
Female	Parent	36	N	NA	NA	Y						test stakeholder for a test quest
Female	Parent	..	N	NA	NA	Y						test stakeholder for a test quest
Female	Parent	..	N	NA	NA	N						test stakeholder for a test quest
Female	Parent	..	N	NA	NA	N						test stakeholder for a test quest

(a screenshot of the private record of stakeholder, the first 7 columns will be shared bi-weekly; the other columns should be kept by each partner in order their responsibility and in accordance to the local laws and regulations)

STEP 2. Sharing of anonymized data about stakeholders with other Partners

- Starting from the "Internal Record of Stakeholder involved", each Partners will regularly copy part of the information on a shared file called "Shared Record of Stakeholders Involved" stored on the Team Drive (Instructions here) as the public record

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- the KPI progression will be monitored in our bi-weekly meeting, therefore each partner is required to update the Shared Record of Stakeholders Involved with a couple of days in advance.

- Personal information such as name, surname, contact info, ec. should not be copied: **only anonymized information will be shared** among partners and only the 7 column identified for the tracking of the KPI will be copied into the Shared Record of Stakeholders..
- This Record will provide a project view of the stakeholders involvement across the City Pilots to facilitate KPI accountability.
- Each person involved is identified by few characteristics that are relevant for tracking KPI (age, Gender, etc.)

Gender	Type of stakeholder	Age	Description of stakeholder	Low Digital Litercy	Low income	Precarious contract	Migrant
Female	HR representative	32	Head of the team on Work/Life balance	N	N	N	N
Male	HR representative	56	Member of the team on Work/Life balance	N	N	Y	N
Male	Parent	23	test stakeholder for a test questionnaire - it \	N	NA	NA	N
Male	Parent	23	test stakeholder for a test questionnaire - it \	N	NA	NA	N
Male	Parent	23	test stakeholder for a test questionnaire - it \	N	NA	NA	N
Male	Parent	23	test stakeholder for a test questionnaire - it \	N	NA	NA	N

Trento | Venezia | Bologna | Hamburg | Thessaloniki | Budapest | Kortrijk

(a screenshot of the Shared Record of Stakeholders Involved that will be monitored bi-weekly in order to keep track of the advancement of the KPIs).

STEP 3. Sharing data of the activities related to stakeholders engagement with other partners.

- The goal is to maintain a shared record of the activities of stakeholders' engagement (e.g. focus group, interviews, meetups, codesign workshops,..) in order to facilitate KPI accountability.
- The shared record can be found in the project Team Drive as a Google Sheet with title "Shared Record of engagement activities"

City Lab	Type	Short description	Date	Number of stakeholders involved	Link to protocol	Link to description/results
Trento	Focus group	FG on [topic]	23/1/2018	4	https://docs.google.com/document/d/1C5-6HL3OkSnFw_1Ivly4VV9dWi7fSsEbx6bEKfdNAuE/edit	https://docs.google.com/document/d/1U6hOlEAXC3Ek1MOhqv1enYj-iq8YY2JXFnkullb012U/edit
Bologna	Questionnaire	[Topics]	23/1/2018	12	...	
Hamburg	Focus Group	[Topics]		6		

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Appendix 3. Toolkit describing methods for needs exploration and co-design

Methods for needs analysis and co-design

Overview

This document describes methods that can be used to explore the **dimensions** listed in the document "Toolkit and dimensions for needs analysis and codesign". In particular, we suggest partners to use different methods in the different phases:

- **Needs explorations, barriers, opportunities**
  - Interviews
  - Focus groups
  - Surveys
- **Co-design of the service**
  - Scenarios-based design
  - Personas
  - Proto-personas

The methods are detailed in the following sections.

Methods to explore needs, identify barriers and opportunities

Semi-structured interviews

A semi-structured interview is a method of research used to explore a specific set of dimensions. It is organized as an open conversation to allow new ideas to be brought up as a result of the conversation dynamics (Patton, 1990).

A semi-structured interviews guide the interviewed person without imposing strict questions. This freedom allows the interviewers to tailor the questions to specific interview context and to the specific individual they are interviewing.

Still, the interviewer in a semi-structured interview generally has a framework of themes to be explored. It is helpful for interviewers to have a topic guide pre-prepared which dimensions, topics and questions that the interviewer can ask in different ways for different participants.

Open-ended questions (e.g. "Tell me about…") are usually effective prompt and a good strategies is to reiterate upon those prompt that spontaneously emerge during the interview and can be recognized as belonging to the topical trajectories of the conversation ("You have just said that … can you tell me more?").

Dimensions should not be addressed in a given fixed order, rather they can be asked according to the ongoing conversation and according to the type of discussion (formal vs informal, individual vs group discussion).

Focus Groups

Focus groups are a type of qualitative research used to acquire feed-backs and insights toward products, ideas and projects. Morgan (1998) defines focus groups as group interviews where a

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moderator guides the discussion while a small interactive group discusses with the interviewer but also with other group member the topics introduced by the moderator. Typically, focus groups are composed by six to ten participants having similar backgrounds but displaying also differences between participants that are useful in enhancing discussion and opinions comparison and evaluation. The main advantage of using focus group techniques rather than other methods (individual interviews, for instance) is that the focus groups recreate a situation similar to the ordinary social process of opinion-making. This allows participants to freely express their opinion in a well-known modality, that is, the peer-to-peer discussion. The group process may generate more information than a comparable number of depth interview and since no one is required to respond to a questions, spontaneous responses are encouraged when people have a definite point of view and respondent's views are facilitate by the group process.
Nevertheless, there are potential drawbacks. Some people may feel inhibited in a group situation and pressures can also cause over-claiming or social loafing. Similarly, the bandwagon is a well-known effect by which people tend to conform to the norms of the group.
A potential benefits is that focus groups are quicker and cheaper than individual interviews but if the drawbacks are not controlled, this could be misleading (Fern, 2001).
Finally, facilitating a focus groups is much more difficult that conducting an interview. Usually, the facilitator has a framework of themes to be explored and it is helpful to have a pre-prepared topic guide.

Organization and procedure for the focus groups
Focus group can be more or less structured according with the target and with the research questions. In our case we chose a middle-way strategy. Given the exploratory nature of the focus groups, the moderator follows a schedule and pay attention to discuss each of the dimensions relevant for the inquiry but also takes advantage of eventual emerging issues and discussions among participants.
The main steps necessary to organize focus groups are reported below.

- Participant recruitment
- Location choice
- Setting predisposition (tape recorder placement, refreshment predisposition, etc)
- Moderator's presentation of the focus groups' goals and of the procedures to be followed during the interview
- Warm-up of the participants (2-3 minutes for each participant)
- Moderator's introduction of the topics
- Free discussion
- Moderator's summary of the discussion and re-launching of the more challenging questions
- Moderator's conclusions and thanks.

Methods to co-design the service

Scenarios-based design

Scenarios are **stories of people undertaking activities/interactions in a given context**.
Scenarios usually represents:

- user's goals and motivations.
- tasks that need to be accomplished.
- interactions (social + mediated)
- a specific context (temporal, spatial, cultural)

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Scenario-based design (Rosson and Carroll, 2002) consists in presenting and discussing stories that represents a specific problem or technology in use with different purposes (Bødker, 2000):

- identify potential problems of a given solutions
- present and situate solutions
- illustrate alternative solutions

The situations presented in the scenarios are either fictional, based on user research findings or based on already available products. The advantage of presenting scenarios rather than involving users in actual testing the solutions come from the fact that scenarios are at the same time concrete—presenting an interpretation of a design solution—and flexible—that is easily revised or elaborated—therefore providing a stable foundation for action-oriented reflection (Carroll, 2000).

Types of scenarios

Scenarios can be presented in different forms: they can be presented as a textual narration (as in figure below) , videos or through storyboards.

SCENARIOS	PROBES QUESTIONS
Scenario #1 Title: *My purchases* Martina has just downloaded the new "MyShop" app that allows her to visualize all the purchases she does on her usual retail chain stores. Martina feels she spent more than usual this month. She looks on the app the graph of the monthly expenses and she realized that she has really overspent this month with respect to the previous ones. For each shopping session, the graph also shows the division by product category (groceries, home products, etc.). Martina understands why she overspent the last month: over 20% of the groceries she bought were organic…	Q1. Let's talk about usefulness of the app. In the story, Martina sees the trend of her purchases by category and type and she can analyze her expenses. Do you think that this information can change how Martina actually shops? What about your habits, would your habits change using such a system? Q2. Why do Martina trust the store? What would you do? In your opinion, what convinced Martina to trust and agree to share the information about her expenses with the retail chain? Q3. Can you think of other uses? If you were Martina, which other information would you like to see? Can you think of other functionalities that you would expect on this app?

Scenarios can also vary depending on the feedbacks they are meant to trigger, for instance scenario can be:

- **exploratory**: scenarios can represent a situation and a problem that someone has without presenting a solution. In this case participants are asked to provide ideas to cope with a specific situation and to reflect on how that person can cope with that problem
- **envisioning**: the scenario show that we might have a solution for a specific situation/problem, but the solution is only superficially represented. Participants are asked to provide ideas and suggestion on how this solution might be designed (Figure 1)
- **technological**: the scenarios presents a technological solution to be discussed and evaluated by participants

In Figures below different types of scenarios: In Figure 1 and 2 there are two examples of scenarios (used in different types of projects) that use different narrative techniques to describe the technical solution aimed at eliciting a reflection for the co-design of new solutions.
Figure 1 illustrates a scenario focused on a specific situation and just envisioning a general technical solution: this kind of scenarios are useful to foster discussions aimed at probing aspects that facilitate

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or hinder acceptance of possible solutions along the lines represented (present and situate solutions).

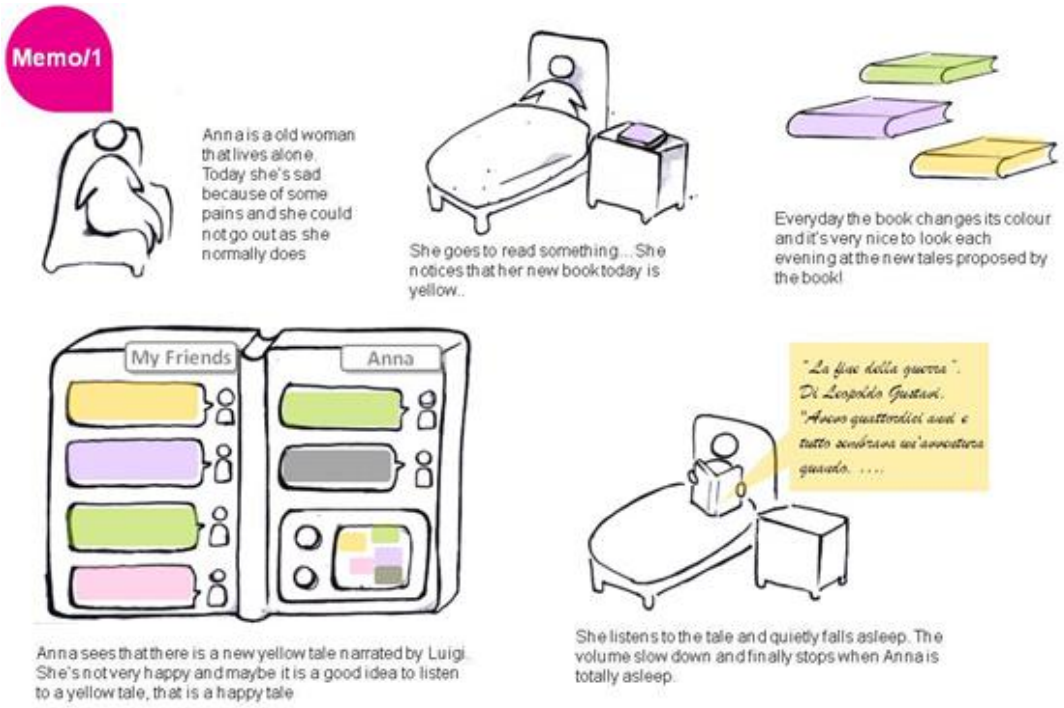

Fig. 1 Example of a scenario focused on a specific situation and just envisioning a technical solution [Source: FBK Project Netcaity]

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Fig. 2 Example of a scenario that provides a richer description of the technical solution but still embedded in a situation that contextualize the use of the artefact [Source: FBK - LivLab Trusted Cloud]

Differently, figure 2 illustrates a scenario that provides a **richer description of the technical solution** but still embedded in a situation that contextualize the use of the artefact: this kind of scenarios are better suited in the cases in which the technology represented is already available and the designers want to elicit specific aspects that may hinder its use (identify potential problems of a given solutions).

ContraVision scenarios

Mancini et al (2010) explored how negative representations of technology can elicit a wider spectrum of issues than a single representation can and reveal more facets of the perception that people may have of the technology. They developed negative scenarios that communicated through videos, - the ContraVision method - and suggest that this "can offer two contrasting points of view for the same object, providing a perception of 'depth' that, just like monoscopic vision, a single representation cannot provide".

How to use scenarios?

The use of scenarios is well suited within activities with high level of participation and engagement: they are suited for exploring reactions toward specific solutions and foster creative discussions and generate new ideas and possible solutions.

1 Scenarios explored in workshops. Usually scenarios are presented and discussed during workshops: the setting is similar to the setting of a focus group, with 5 to 10 participants discussing different scenarios with the moderator focusing on different aspects of the proposed scenarios, according to the dimensions to be explored. The duration of the workshop can vary depending on participants availability and the quantity of dimensions to be explored. They can last 1:30 (minimum) to 3-4 hours.

However scenarios are very flexible and can be used in different settings. If group discussion are difficult to organize or if larger numbers of participants are needed, other settings can be envisaged:

2 Scenarios explored during meetups and events. Scenarios can be used to trigger participants discussion in larger meetings and event. In this case scenarios can be presented as part of the event and participants can be asked to work in small groups to discuss and give feedbacks and ideas about the proposed scenarios (Figure 3). For instance,

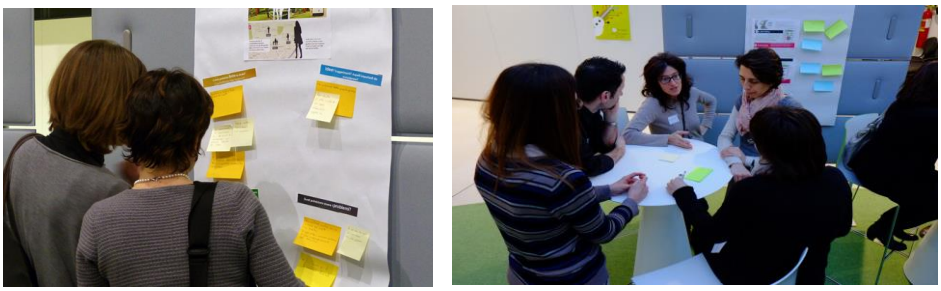

Figure 3. Participants during a meetups, discussing and giving feedbacks on scenarios working in small groups

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3 Scenarios explored through individual face-to-face interactions. In this cas
e the scenario is used to trigger the discussion similarly to what happens in a semi-structured interview. In this setting there is not interaction and confrontation among participants on a given topic, but useful insights can emerge. See example here.

4 Scenarios explored through online discussion tools: scenarios can be presented in an online environment and feedbacks can be collected by encouraging online group discussion or asking for individual feedbacks, similarly to what happen in online surveys. Online methods offer the possibility of conducting asynchronous research, i.e. the possibility of moderating discussion over long periods of time. Furthermore, online tools may offer the opportunity to reach remote, reluctant, or unconventional groups of participants, favor anonymity among participants, and facilitate the discussion about personal and sensitive issues, reducing the risk of inhibition. On the other hand, the online approach presents a number of drawbacks: lack of user representativeness (as Internet users only participate) and participants' high dropout rates.

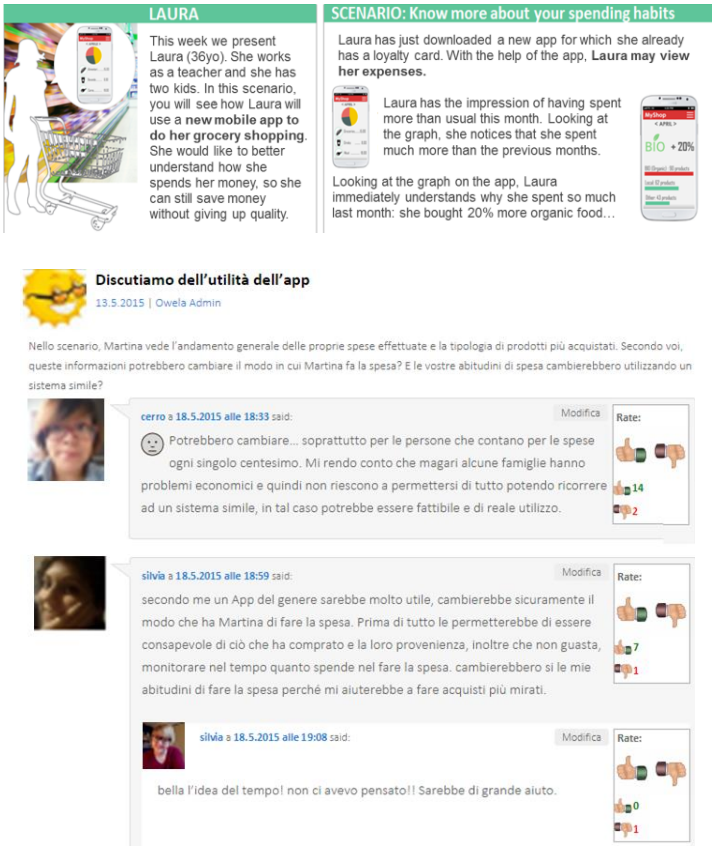

Figure 4. Scenarios discussed through the Owela platform, in order to collect feedback form a large panel of citizens (+120). Participants could post their opinion, following the moderators questions, or reply and react to other participants ideas

Scenarios explored through questionnaires. Short scenarios can also be embedded that embed short scenarios together with questions: here the lack of a deep understanding about the implicit meanings encoded in a scenario may limit the knowledge that can be gained by this later approach.

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Personas

Using "personas" in scenario-based design is a method for making scenarios more concrete, and real, for creating a stronger focus on users and for enhancing engagement and communications in design teams.

Definition of personas

Personas are archetypal customers that are relevant for the product design and adoption. Personas have specific characteristics, needs and behaviours towards the brand offering. They are outlined by matching information gathered from multiple sources (e.g. demographic and transactional data) about what and how customers buy (e.g. customer segmentation models analysing data on purchasing patterns, preferences, frequency, etc.) and how they interact with the brand (e.g. preferred channels).

Personas were introduced as a method to overcome some limits of scenarios-based design. According to Cooper's view (2003), scenarios are developed around a hypothetic and undefined "user" whom values, attitudes, beliefs are rarely taken into account. On the contrary, personas provide tangible representation of the user that allows exploration of user goals, attitudes and stories. As stated by Grudin and Pruitt (2002), personas "have names, likenesses, clothes, occupations, families, friends, pets, possessions, and so forth. They have age, gender, ethnicity, educational achievement, and socioeconomic status. They have life stories, goals and tasks".

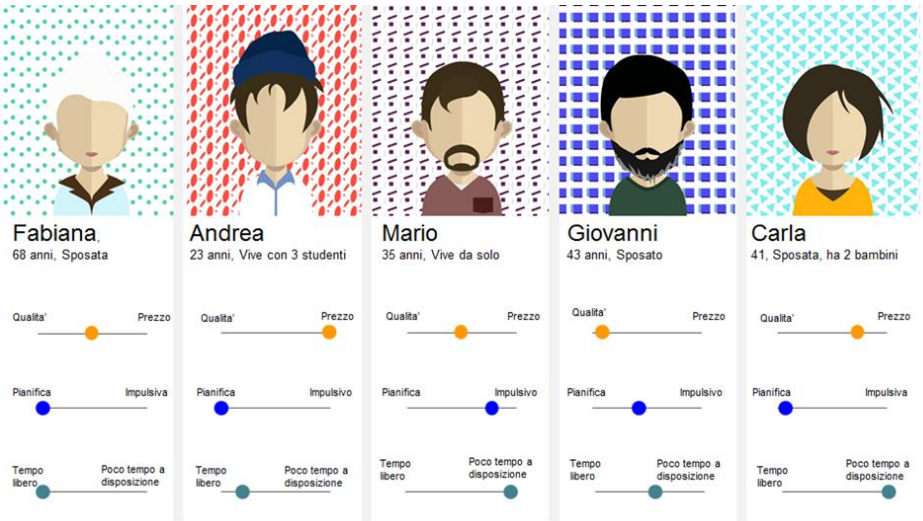

Figure 5. Personas developed during a projects to highlight different needs and values of different potential users [Source: FBK project: LivLab TrustedCloud]

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Figure 6.A persona designed to trigger group discussion during a codesign workshop [Source: FBK project CrowdInsights]

Proto-personas

In Lean UX: personas are developed starting from a quick field study and are only assumptions about potential users, assumptions that are then validated and refined through other actions (for instance during co-design workshops).
Reference for "Proto-personas": Gothef, Seiden "LEAN UX"
"In Lean UX, we change the order of operations in the persona process. When creating personas in this approach, we start with assumptions and then do research to validate our assumptions. Instead of spending months in the field interviewing people, we spend a few hours creating proto-personas. Proto-personas are our best guess as to who is using (or will use) our product and why. We sketch them on paper with the entire team contributing — we want to capture everyone's assumptions. Then, as we learn from our ongoing research, we quickly find out how accurate our initial guesses are, and how we'll need to adjust our target audience (and persona) — and thus our design. "

Co-design

Co-design implies the participation of end users to the design process. It is not just a set of methodologies but rather it is a mindset which holds the belief that all people have something to offer to the design process when given appropriate tools to articulate themselves (Sanders, 2002). For the sake of co-design, it is important to include in the design process not only the customers but all the stakeholders including the final users as well.
In the Co-Design process it is important that people feel free to express a wide range of opinions and put forward a wide range of options and ideas, particularly in workshop activities and more open-ended consultations. Even where these are out of scope for the particular Co-design they should be respected and captured for consideration in other contexts.

Co-design Workshops

Co-design workshops are **collective activities organized to discuss about design issues and choices**. Co-design are based on the assumption of a strong partnership between users and other project members. The user is not only considered as "informant" but rather as "active contributor" within

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the design process. Co-creation emphasizes the collective and interactive negotiation and creation of something new.
There are several **techniques** to foster a productive environment and stimulate creativity (see for example, http://www.designkit.org/methods/). These co-design and co-creation tools are used to better explore alternative ideas and to make ideas concrete, to produce new ideas capitalising on collective creativity.
As an example, the "How might we…" is a sketch based method for rapidly developing and sharing design concepts based on a free flow starting from the prompt.
The co-design workshop usually follow a structure that involve first a phase to generate ideas with a divergent approach followed by a phase in which the ideas are filtered, summarized and prioritized. Depending on the specific structure and objectives, several divergent/convergent pair of phases might be alternated.

Figure 3. Participants attending a meetups during which a design activities was proposed to brainstorm in couples about a solution to a given problem

Usually, the outcome of a design workshop is a description of the artefact although the level of details may vary from abstract sketches (if the goals were to define the vision or prioritize the requirements) up to a full wireframe or advanced design specs.
The length of a design workshop may vary from few hours to a full week (see for example the Google Ventures' Design Sprint, https://designsprintkit.withgoogle.com/). For the design workshop, it is really important the full commitment (level 3 above) of all the participants.
Facilitating a design workshop is relatively more difficult than facilitating a focus group and require a considerable expertise.
During co-design workshops, scenarios can be used to trigger discussion or can be produced during the workshop itself by participants.

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Cooper A., Reimann R, (2003) About face. The essentials of interaction design, Wiley Publishing, Inc.
Mancini et al. (2010) ContraVision: Exploring Users' Reactions to Futuristic Technology, In Proc of CHI 2010.

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Appendix 4. Cokido Steps – Needs analysis

Attachment 1 - Pre planning kids

Opvang zomer 2018: **kindjes**

WAT IS DIT?
Vul in onderstaand schema in op welke dagen je voor je kindje(s) opvang nodig hebt. Op basis hiervan kunnen we dan al een voorlopig planning opmaken om te weten hoeveel kindjes op welke dagen aanwezig zullen zijn. Aanpassingen in jullie planning zijn later uiteraard nog mogelijk.

HOE INVULLEN?
Vul jullie naam, en die van de op te vangen kindjes in op één lijn. Eén kindje per lijn. Vul dan in de vakjes ernaast (per dag) één van de volgende cijfers in:
0 = geen opvang nodig
1 = misschien opvang nodig (ik weet het nog niet)
2 = opvang nodig

		Juli										Augustus					Augustus				
Naam ouders	**Naam kindje**	**2**	**3**	**4**	**5**	**6**						**20**	**21**	**22**	**23**	**24**	**27**	**28**	**29**	**30**	**31**
Rozemie Delplace	Nand Kers	2	2	2	2	2						2	2	2	2	2	0	0	0	0	0
	Thor Kers	2	2	2	2	2						2	2	2	2	2	2	2	2	2	2
Lisa & Bart Demeere-Noyelle	Achiel Noyelle	2	1	1	2	1						0	0	0	0	0	0	0	0	0	0
Dedecker An	Louis & Olivia Vanrietvelde	1	1	1	1	1						2	2	2	2	2	2	2	2	1	1
Lobbestael ilse	Leila Arabi	0	0	0	1	0						1	0	1	1	0	1	1	0	0	0
Lobbestael ilse		0	0	0	1	0						1	0	1	1	0	1	1	0	0	0
Plets brenda	Ziva bouckaert	0	0	0	0	0						0	0	0	2	0	2	0	0	0	0
Plets brenda	Nand bouckaert	0	0	0	0	0						0	0	0	2	0	2	0	0	0	0
Marion Lecas	Corazon en Adrian Delanote											1	1	1	1	1					
Dries Delanote	Corazon en Adrian Delanote	0	0	0	0	0											0	0	0	0	1
Deborah Decramer	Geike & Wodan	0	0	0	0	0						2	2	0	0	0	2	2	0	0	0
Yordanka Ognyanova	Axel Lozie	2	2	1	2	2						2	2	1	2	2	2	2	1	2	2

Attachment 2 - Pre planning parents

Opvang zomer 2018: **ouders en extra's**

WAT IS DIT?
Vul in onderstaand schema in op welke dagen je zelf voor opvang kan zorgen. Dat wil zeggen dat je op die dag kan zorgen dat een ouder aanwezig kan zijn. Op basis hiervan kunnen we dan al een voorlopig planning opmaken. Aanpassingen in de planning zijn later uiteraard nog mogelijk.
Belangrijk: vul indien mogelijk liefst meerdere dagen per week in. Uiteraard zorgen we er dan in de definitieve planning voor dat je maar één keer per week ingepland wordt.

HOE INVULLEN?
Vul jullie namen samen in op één lijn. Vul dan in de vakjes ernaast (per dag) één van de volgende cijfers in:
0 = Ik kan geen opvang voorzien
1 = ik kan wel opvang voorzien
2 = ik kan wel opvang voorzien en wordt liefst op deze dag ingepland

	Juli					Juli					Juli					Augustus					Augustus					Augustus				
Naam ouders	**9**	**10**	**11**	**12**	**13**	**16**	**17**	**18**	**19**	**20**	**23**	**24**	**25**	**26**	**27**	**6**	**7**	**8**	**9**	**10**	**20**	**21**	**22**	**23**	**24**	**27**	**28**	**29**	**30**	**31**
Voorbeeld	1	1	0	1	2	1	1	0	1	2	1	1	0	1	1	0	0	0	0	0	1	1	0	1	1	1	1	0	1	1

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Attachment 3 - Final planning (example)

			Juli									
			9		10		11		12		13	
Naam ouders	Nr	Naam kindje	van	tot	van	tot	van	tot	van	tot	van	tot
Voorbeeld naam ouders	1	Voorbeeld kind	8:30	15:30	8:30	15:30			8:00	15:30	8:30	15:30

Attachment 4 - Day form

opvangouder 1
opvangouder 2

Maandag 9 april 2018

Naam kindje	Naam ouder(s)	Startuur	Einduur	Aangekomen	Opgehaald	Betaald
Naam 1	Naam ouders 1	08:30	15:30			
Naam 2	Naam ouders 2	08:30	16:30 PM			
Naam 3	Naam ouders 3	9	16			
Naam 4	Naam ouders 4	9	16			
Naam 5	Naam ouders 5	9	16			
Naam 6	Naam ouders 6	08:30	16:30			
Naam 7	Naam ouders 7	08:30	16:30			
Naam 8	Naam ouders 8					
Naam 9	Naam ouders 9					
Naam 10	Naam ouders 10					
Naam 11	Naam ouders 11					
Naam 12	Naam ouders 12					
Naam 13	Naam ouders 13	8	17			
Naam 14	Naam ouders 14	8	17			
Naam 15	Naam ouders 15					

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Appendix 5. Co-creation toolkit – Kortrijk

General approach

The methodology for collecting user requirements for the Families-Share platform (COKIDO V2) of the Kortrijk Citylab will be done through the "scenario-based user needs analysis", or short the **SUNA** method (Van Helvert & Fowler, 2003). This method collects requirements through writing of user scenarios and a workshop-based approach.

For the writing of the scenarios, it is opted to write a **current scenario** (the "as is" situation) that describes the current features and workflow of the COKIDO application. This scenario will be shared with all Families-share consortium partners (in English), as to understand which features are currently embedded in the COKIDO application, and from which all partners will start in June 2018.

Next, we will also write a "**future scenario**" to describe the "what if" situation of how processes will look like when the Families-share platform will be released. The future scenario will be based on the collected user requirements and needs during the co-creation workshops.

The SUNA method will be set up in different phases, and through an iteration of **workshops**. There will be an iteration between "workshop 1" and "workshop 2" – and each workshop will be organized two times to recruit the minimum amount of required participants (N:35).

Phase	Description	Timing
Phase 1: **Current scenario**	Imec and De Stuyverij deliver a current scenario description of the COKIDO application to the families-share consortium	20/4/2018
Phase 2: **Workshop 1**	During phase 2, two workshops will be organized in Ieper and in Gent/Antwerp. Each workshop invites 8 to 10 participants.	End of April
Phase 3: **Future scenario V1**	After the organization of workshop 1, a first version of the future scenario will be written based on the outcomes.	Beginning of May
Phase 4: **Workshop 2**	During phase 4, two workshops will be organized in city X and city X. Each workshop invites 8 to 10 participants.	End of May
Phase 5: **Final future scenario**	After the organization of workshop 2, the future scenario will be updated based on the outcomes, and will be delivered as a final result to FBK (D1.2) and the technical team.	End of May/beginning of June
Phase 6: Distilling user requirements	After the organization of workshop 1 and 2, a list of user requirements will be distilled for the technical team, together with a prioritization for the Kortrijk citylab.	End of May/beginning of June

Specifications of each phase, and roles & responsibilities

In the following paragraphs, the phases are described in more detail.

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Phase 1: Current scenario

The current scenario describes how, at the present time, the CODIKO application organizes childcare through the timesharing principle. With the current scenario, sufficient background information should be provided about (i) how parents currently self-organize in groups and communicate with each other, (ii) how child care is arranged in holidays periods, (iii) how information is shared about personal health care information of the children through the application, (iv) how current arrangements are made about the budget, educational and playing material, room allocation, etc. (v) what the minimal requirements are for arranging child care through the timesharing principle, e.g. min amount of adults and children per day, max. amount of children per one adult, min. 10 families are necessary to cover one week, and (vi) privacy settings. Further, any problems or missing features, causes and effects should also be described in order to know the preferred situation for the future scenario with Families-share. The narratives should be written through role-play and in an enjoyable way.

Roles and responsibilities: In order to write the current scenario, IMEC will test the COKIDO application and will write a narrative (in English), and which will be reviewed by De Stuyverij. The current scenario will be shared with all consortium partners of the Families-share project. If desirable, the other partners can also follow the same approach, but of course should start from the situation without COKIDO and the current (offline) arrangements of child care.

Phase 2: Workshop 1

During phase 2, "workshop 1" will be organized and this two times. Each workshop should invite 8 to 10 participants, and should invite a mix of profiles: pre-starters (did not use COKIDO yet, but have an intention), starters (are currently planning their first holiday period), beginners (used COKIDO 1 or 2 times), and advanced users (used COKIDO already for multiple holiday periods); either living in the city center or in rural areas. The workshops are organized in the city of Ieper (19/4/2018), and the city of X; each workshop will last for approximately 2 hours. Side-activities are also organized for the children. Further, any interesting intermediary profiles should also be invited, such as school principles or representatives of local municipalities (as location managers), peerby Belgium (for sharing playing material), carpooling expert, educational expert, etc. It might be that because of the new features on the Families-share platform, these profiles also might require access to the platform or at least will have to enter some data in it.

The objective of the first workshop is to (i) evaluate the current experience about the COKIDO platform: what is good or bad, what can be improved, and (2) identifying new needs by co-creating a COKIDO V2/the families-share platform by discussing a list of potential new features:

- **Space management – registration of locations:** Allocation of a specification location for each co-playing moment, and registering of new locations in the application (e.g. list view, map view, etc.) through suggestions from partners or from location managers
- **Carpooling:** Carpooling of children to a specific co-playing moment, or to somewhere else. We can investigate here if this can be provided by a third-party.
- **Advanced time management:** Linking your personal calendar to the co-playing calendar, as such, you can easily see if you as a parent are available for a co-playing moment. Further, by matching the calendars, you can also more easily identify on which moments childcare should be organized.
- **Creating digital information sheets about each child:** Currently, the information sheets are filled in offline and then uploaded through a digital scan on the platform. It would be a nice-to-have if these information sheets could be completed online. Information sheets include information about age, gender, allergies, etc. of the child also includes contact details of the parents and the doctor. The sheets should also be always available in print at the co-playing location.

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- **Uploading group agreements:** A set of basic principles that can be consulted online, such as, who has the key of the building, who is taking care of waste management/garbage collection, how to turn on the heating at a particular location, what is the agenda of the day, food arrangements, etc. These arrangements are specific per group, and remain largely the same. However, the arrangements are location specific; which can be linked to the first feature (space management). Group arrangements should also be available in print at the co-playing location.
- **Uploading common documents of physical meetings:** The parents organize an evaluation moment pre and post the holiday period. The reports of these meetings/moments can be shared online, and through a standardized form. This information is useful for the impact measurement.
- **Sharing talents:** Within a group, talents of parents can be made more visible as to organize (educational) activities during the co-playing moments. Some parents are active in painting, playing music, etc. and this can be shared within and also outside the group. This talent can be entered in the personal profile of a parent.
- **Sharing videos in the communication stream:** Currently, it is only possible to share text / comment in the group. It would be a nice-to-have to also being able to share pictures and videos in the communication steam of one group, or with the whole community. This feature can generate a group feeling / community feeling.
- **Sharing (playing) material:** In resemblance to the example of peerby, it would be a nice-to-have if groups could exchange playing material with each other. Some groups buy own playing material, as such, the children would have more varied playing material. Another example is first aid kits.
- **Reputation and trust building:** It would be a nice-to-have if certain characteristics could be given to a certain group or parent, e.g. member since, has organized already X co-playing moments, etc. On group level, examples of characteristics could be the diversity of the group, the accessibility of the group, number of educational activities of the group (e.g. first aid label).
- **Financial management of the group:** Currently, you can enter the amount of money spend for each co-playing moment per parent. More advanced features could be added to arrange the financial matters of the group.
- **Educational events/calendar:** It would be a nice-to-have if a calendar of activities can be made within a group that indicates seminars or organized workshops. These events can be added by the Stuyverij (e.g. first aid, how to aid children with a disability, etc.).
- **Social media sharing:** It should be explored with parents what they would like to share in the application, and what they would like to share on social media. Currently, you are only able to login via your social media account, but it is not possible to share any content via social media. In the communication stream, it is currently possible to share pictures within the group (not with the whole community).

Roles and responsibilities: IMEC will prepare a topic list of questions for the first workshop, and will define the creative exercises to be used. IMEC and De Stuyverij will both moderate the workshops. The analysis of the workshops will also be a shared responsibility.

For moderating the workshops, the following roles have to be divided:

- Moderator 1: Annelies / Eline
- Moderator 2: Niels
- Note-taker 1: Carina

Phase 3: Future scenarioV1

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After the two organized co-creation workshops in phase 2, a first version of a future scenario will be written. This scenario describes how the families-share platform will look like, including the new features that are prioritized by the users. The scenario should entail all expressed wishes and needs from the users, and these should not be limited through practical restrictions, such as timing, budget, complexity, etc. The first draft of the future scenario will still be generic, and should be further validated and specified through a second round of workshops. This phase offers time and reflection about the outcomes of the first workshops, and preparation of material for the second round of workshops.

Roles and responsibilities: IMEC makes a first draft of the future scenario, and this will be reviewed by The Stuyverij.

Phase 4: Workshop 2

During this phase, further in-depth feedback will be collected about the prioritized features of the first round of workshops. Further specifications are gathered, and this can be done through provided wireframes by Niels. The scope of this workshop will be further defined after the first round.

Roles and responsibilities: Same as in phase 2

Phase 5-6: Final future scenario and distilling a list of user requirements

After the organization of all workshops, the future scenario will be updated and finalized based on the feedback of users. Furthermore, from all collected results, a list of user requirements should be distilled. This list of requirements should be categorized according the specific features, and be split up in data requirements, functional and non-functional requirements, etc.

Roles and responsibilities: Same as in phase 3, with also De Stuyverij taking the lead in prioritizing the list of distilled user requirements.

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Current scenario specifications

Eline (42), mother and single parent of two children: **Lisa** (7) and **Laura** (10), is looking for childcare for the next summer period in July and August. The previous summer, Lisa and Laura joined a pony camp, but this year **Eline** wants to find an alternative that is less expensive, and which is still enjoyable and full of social activities for the children. At the local primary school in Ieper, she hears at the school gate that also other parents are looking for alternatives for arranging childcare during summer. **Mark**, father of **Ben** (7) and a playmate of **Lisa**, mentions that his family is using the COKIDO application of "De Stuyverij" for arranging childcare during the holiday periods. He explains the core timesharing principles to **Eline**, and says that already a group of parents of the primary school has an active group for self-arranging childcare. **Mark** asks the email address of **Eline**, and says that he will invite her to the group so that she can explore the application and try it out. In this group, they are currently arranging the childcare for the holiday period in July, and which fits to the needs of **Eline**. That evening, **Eline** receives an email from the COKIDO application to join the "Primary school Ieper", she clicks on the group and can see that there are 7 other parents in the group looking for child care in July.

Before entering the dates for which childcare is needed for **Lisa** and **Laura** in July, she completes the requested profile details. **Eline** enters her first and last name, a short description, contact details and address. Next, she clicks on the button "add children" to make a profile for **Lisa** and **Laura**. She enters for both children first and last name, date of birth, gender. Before finishing the profile descriptions, **Eline** has to download and print a separate file for completing the profile information of her children. This separate file registers info about specific healthcare issues such as medicines, allergies, asthma, epilepsy, diabetes, toilet-trained, etc. **Eline** has to complete this file for each child, and also has to mention her contact details, her doctor's, and any other possible babysitters that would like to join the group. Last, she also sticks a note of the National Health Service on the document. After completing the document, she scans it and uploads it to the COKIDO application. All is set now to start co-playing with other parents in the group of the primary school in Ieper.

Eline searches again for the group "Primary school Ieper", and in the list view, she clicks on the sign up button for the holiday period in July. Her request is now being checked by the administrator of the group. **Charlotte**, who is the administrator and starter of the group, receives the request and accepts it. Charlotte was already notified by **Mark** through Whatsapp that a new parent at the school was looking for childcare in July through COKIDO. When **Charlotte** created this group in COKIDO for the primary school, she named the group "Primary school – Ieper", and added a short description, website link to the school, and the address. Before she did this, she and other parents from the group talked with the school principle about the usage of the classrooms for child care activities, and followed the manual of "De Stuyverij" to prepare everything related to the insurance.

Charlotte manages all the holidays periods for this group, and also created the calendar for July, and filled in certain variables: number of co-playing days, maximum number of children per parent on one day (which is set standard at three), and time and ending time of the co-playing day. **Charlotte** will also organize a meeting with all parents before the start of the holiday period in order that all parents get to know each other, and can discuss further arrangements and practicalities.

In the meantime, **Eline** further explores the application, and sees in the communication stream several messages and uploaded pictures of previous co-playing moments organized with the group. She sees that one of the parents in the group organized an autumn workshop, whereby the children made paintings and art works out of collected green, red, and brown leaves and nuts which they collected in the forest nearby the school. She also sees another message whereby parents are requested to always foresee snacks for the

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co-playing dates, preferably healthy fruit snacks. Further, **Eline** watches one more time the explanatory video on the homepage of the COKIDO application as to know how the timesharing principle works.

A few minutes later, **Charlotte** approved the request to join the holiday period in July, and **Eline** can start marking the dates now for which she needs childcare for **Lisa** and **Laura**. The mother indicates that from Monday 6/7 till Friday 10/7, childcare is needed for **Lisa**, and for **Laura** for all dates except Wednesday as then **Laura** will go to her niece and aunt for a sleepover party. Next, **Eline** also takes her personal calendar and searches for the dates on which she might be available for co-playing as a parent. She is not available in that week from 6 till 10/7, but she has some days off in the following week. **Eline** indicates that she will co-play on 13/7 and 15/7, and also adds Lisa and Laura to that particular date, she also notices that she can fill in the costs that she will make for co-playing that day as a parent.

Charlotte will close the agenda when all spots will be filled in for this particular holiday period. If spots are still open, then still other families or babysitters, grandparents, or other family members can join. Just before the holiday period in July, **Charlotte** will also organize an informal get-together with all the parents and children to connect. For the time remaining, they will further keep in contact with each other through a Whatsapp group.

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Co-creation material workshop 1

In this chapter, the creative exercises and the topic list of questions are described for the first co-creation workshop in Ieper (19/4/2018).

Workshop 1 has the following objectives:

- To evaluate the current experience about the COKIDO platform: what is good or bad, what can be improved
- To identify new needs by co-creating a COKIDO V2/the families-share platform by discussing a list of potential new features + open brainstorm

Following these objectives, the workshop consists out of different parts, with the following agenda:

Part	Duration	Topic
1	**10 min**	**Welcome**
2	**10 min**	**Agenda and objective of workshop 1**
3	**10 min**	**Presentation of the Families-share project**
4	**40 min**	**Exercise 1: Current experience with COKIDO**
5	**40 min**	**Exercise 2: The new COKIDO through card sorting**
6	**10 min**	**Wrap up and conclusions**

It is important that moderators of the workshop strictly follow the pre-defined timing of every topic and co-creation exercise. If you see that too many discussions are going on, try to cut those and proceed to the next question. The format should be followed and (preferably) each question should be posed to the participants.

Required material for the co-creation exercises:

- Green sticker dots
- Red sticker dots
- Sticky notes (or any other colour)
- Pens
- Loose papers
- Printouts – Printed screenshots of COKIDO on A3 – grouped in tables
- Printouts – Printed A5 cards of new features + wild cards for COKIDO – grouped in tables

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PART 1-3: WELCOME + AGENDA + PRESENTATION OF THE FAMILIES-SHARE PROJECT (30min)

Not every participant will arrive at the exact same moment. Upon entering and when waiting for the others, you can ask the participants to already fill in the **informed consent**. First orally explain to them what an informed consent is and what is in the document, and then give the participants the necessary time to carefully read the document. Participants should sign two copies: one for us, one for them.

Invite the participants for a drink, while others participants are arriving. Once everyone is sitting around the table, you can start the workshop and the PowerPoint presentation:

1) Start the workshop by **presenting yourself** and the other moderators present, and explain their roles
2) Shortly explain the **goal** of the workshop (why are you here?) and explain the philosophy of **co-creation.**
3) Refer to the **recording device(s)** in the room. Mention that this will only be used for the processing of the workshop, and the recording will never be used for another purpose. Only after this explanation, switch the recording devices on. Further, also mention that some pictures will be taken about the outcomes of the exercises during the workshop. Ask the agreement of the participants.
4) State some **ground rules** of a workshop: e.g. please don't interrupt others while speaking, there are no wrong answers, do not have one-to-one conversations while there is a group conversation, switch off your mobile phone, etc.
5) Give a short overview of the **agenda** and the topics to be discussed
6) **A round-table:** Ask the parents to present themselves shortly (if they don't know each other), ask them to state their name, amount of children (gender, age), and what they hope to contribute during this workshop
7) **Present the Families-share project**

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PART 4: EXERCISE 1 (40 min) – COCREATING COKIDO

Warm-up questions (15 min)

1. Hoeveel keer heb je reeds COKIDO gebruikt om bijspelen te organiseren tijdens de schoolvakanties? (ENG: How many times have you already used the COKIDO application to arrange childcare during holiday periods?)
2. Wat zijn jouw voornaamste **problemen of zorgen** bij het regelen van kinderopvang, waarbij COKIDO aan tegemoet komt? (ENG: what are you main issues for arranging childcare, which are solved through COKIDO?)
3. Wat zijn jouw voornaamste **drijfveren** om COKIDO te blijven gebruiken? Voorbeeld van drijfveren: lagere financiële kost, familiale en informele context, vermindering van stress, meer quality time met kinderen, kind-ouder relatie in opvang, nieuwe contacten, solidariteit, betere integratie van de school in de buurt, kinderen spenderen hun tijd in een gekende omgeving, etc. (ENG: what are your main motivations for continuing to use COKIDO?)
4. Hoe heb je het **kennismaking en inschrijvingsproces** ervaren om de COKIDO applicatie te leren gebruiken? Wat vond je gemakkelijk, en wat kan beter? (ENG: How was your learning experience with the CODIKO application, how did you experience the subscription process?)

Evaluating the current COKIDO application (25 min)

For this part of the workshop, we ask participants to split up in groups.

Depending on the amount of participants in the workshop, we either ask to split up in two groups (of four people) or three groups.

Each group should have a table, and have the creative material (in sets) for the exercise. You only hand over the creative material when one set is completed, the exercises deal about specific features of the COKIDO application through screenshots.

After the exercise, the group appoints one person to present the results. For each set there is 6-7min minutes of creativity (the first two sets are the easiest, the third one might need a bit more time), concluded with 5 minutes for group discussion. The moderator should keep a close eye to the timing of the exercises, and remind participants about the time.

Set 1: Mijn profiel & mijn kring (kinderen & framily)

The participants receives two A3 prints, with the following interfaces:

- Complete your own profile
- Add your connections: kids and framily (friends and family members)
- Complete the profile of your children, and complete and upload the child info sheet

During five minutes, the participants are asked to stick **red dots** on things that they don't like (or do not understand/or want to improve) about the interface, **green dots** on what they like, and **post-its** for things that they would like to add to the interface.

During the group discussion, the following questions are asked:

- Ontbreken er volgens jou specifieke (cruciale) velden voor het beschrijven van jouw profielgegevens of profielgegevens van jouw kinderen? (ENG: According to your opinion, do you think any crucial profile information about yourself or the children is missing?)
- Hoe ervaar je momenteel het proces om de kindfiche te downloaden, in te vullen, een scan te maken en opnieuw up te loaden? Heb je ideeën over hoe we dit proces anders zouden kunnen aanpakken? (ENG: How do you currently experience the process of downloading the child info sheet, completing

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it per child, scanning and uploading it again to the application? Do you have any ideas about how we could do this process differently?)

- Heb je enige bedenking omtrent de privacy van jouw gegevens die gedeeld worden met de COKIDO applicatie en de groep waarvan je deel uit maakt? (ENG: do you have any privacy concerns related to the sharing of this type of profile information with the COKIDO application and the members of your group, and the whole community)

Set 2: Dashboard COKIDO - Creëren en zoeken van een groep (ENG: COKIDO dashboard: creating and searching a group)

The participants receive two A3 prints, with the following interfaces:

- Dashboard: welcome to COKIDO, my groups
- Create a new group and fill in the group details
- Search for a group, and join the group

During five minutes, the participants are asked to stick **red dots** on things that they don't like (or do not understand/would like to improve) about the interface, **green dots** on what they like, and **post-its** for things that they would like to add to the interface.

During the group discussion, the following questions are asked:

- Wat vind je van het algemene dashboard met de welkomsttekst en introductiefilmpje over de werking van de applicatie? Heb je het filmpje bekeken? (ENG: What do you think about the central home page of the COKIDO application with introductory text and movie, did you watch the movie?)
- Vind je het duidelijk zichtbaar dat jouw groepen zich ook op het dashboard bevinden? (ENG: Do you think it is clearly visible that your subscribed groups are on the dashboard?)
- Vind je dat er voldoende informatie en zoekvariabelen aanwezig zijn om jouw groep terug te vinden in de zoekfunctie en in het overzicht? (ENG: Do you think sufficient information is available to find your group in the list view and in the search filter?)
- Wat vind je van de huidige communicatie stream van berichten in de groep? (ENG: What do you currently think about the communication stream of messages in the group?)

Set 3: Start co-playing

The participants receive three A3 prints, with the following interfaces:

- Create a co-playing holiday period, and fill in the details
- See the overview of available slots for children and co-playing parents in the holiday period (red and blue slots), and fill in the slots
- Check the settings of the group (variables), number of requests, invites, number of group members

During five minutes, the participants are asked to stick **red dots** on things that they don't like (or do not understand/or would like to improve) about the interface, **green dots** on what they like, and **post-its** for things that they would like to add to the interface.

During the group discussion, the following questions are asked:

- Vind je dat er voldoende informatie aanwezig is om de groep te beschrijven? Zou je graag meer informatie toevoegen omtrent groepsafspraken? (ENG: Do you think that currently there is sufficient amount of information available about the group, would you like to have more information about the group agreements?)
- Vind je het overzicht duidelijk van het bijspeelmoment met bijgevoegde kleurcodes en iconen: dagen, babysitters, aantal volwassenen, aantal kinderen? (ENG: Do you think the current overview

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is clear in terms of used icons and color codes for days, babysitters, number of adults, number of children)

- Begrijp je de afspraken omtrent het regelen van een bijspeelmoment, en waarom een kleur van rood naar blauw gaat? Kan iemand een voorbeeld geven? (ENG: Do you understand the rules for arranging childcare through co-playing, and when a co-playing moment goes from red (not complete) to blue (complete).

A break

PART 5: EXERCISE 2 – CARD SORTING (40 min)

During the second exercise, participants are again split up in groups (they can stay in the group of exercise 1), and will get familiar with new features of the COKIDO platform through a card sorting + wild card exercise.

The cards include (all printed on A6 – and distributed per group):

- Icon of the feature
- Title of the feature and short description
- Three wildcards for new features suggested by participants (per group)

The cards should be sorted on a matrix (A2) with the following axes (with a template provided per group):

- Level of usefulness: high usefulness, medium usefulness, low usefulness
- Level of priority: high priority (I want in in the short term), medium priority (I can wait a bit longer for this feature to be delivered), low priority (I don't care at all when this new feature is delivered)

The participants have 20 minutes to do the card sorting exercise. Afterwards, the results are discussed in-group during the remaining time.

PART 6: WRAP-UP AND CONCLUSIONS (10min)

- Explain the next steps in the project
- Ask users: what have you learned from the process? If you could add one more thing/comment, what would it be?

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