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Practices, Places, Projects: Enrolling Stakeholders for Circular Fashion

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Abstract

Purpose: How can people be involved within their geographic location in the new ideas and activities in emerging the circular fashion industry? This paper is written by a systems designer (author1) who worked alongside two textile design researchers. The systems designer found ways to explore, articulate and visualise the range of possibilities for future stakeholders in circular fashion contexts through a framework of *practices, places* and *projects* (PPP).

Design and methods: Author1 became immersed in the *Circular Design Speeds* project via an opportunity to relocate to Centre for Circular Design, University of the Arts London. A systemic design approach based on a cross-observation of various practices, places and projects, and the use of visual artefacts, enabled the creation of a rich picture of the convivial complexity within circular design concepts. Author1 used the PPP framework to adapt tools and propose four strategic approaches to support designers in the creation of new circular fashion narratives, integrating local communities through (Re)-Distributed manufacturing (RDM).

Findings: The framework can be used by practitioners when designing places or projects, to raise a more systemic perspective on the local narrative. The resulting visual pictures support designers in understanding WHERE to look for capturing and situating the practice, siting futures practices within local community-based initiatives in new local places; and to systematically assess the trade-offs and tensions behind each concept. For the use of tools, the presence of intermediaries could facilitate the

appropriation and the interaction between the project stakeholders. The paper makes a methodological contribution to design for conviviality in the fashion and textile sector.

Keywords: conviviality, participation, stakeholder mapping, circular fashion, grassroots, business models, redistributed manufacturing, circular speeds, design frameworks, design tools

1 Introduction

The circularity of the fashion and textile industry involves connecting up a diversity of complex processes from the transformations of resources into fibres, fibres into yarns or non-woven textiles, yarns into clothes; and reciprocally clothes into second-hand resources, upcycled pieces, recycled yarns, shoddy or insulation materials, biomasses or energy. New practices and technical solutions are emerging to build this alternative system to the linear model, innovating at each step of the product life-cycle (Earley and Goldsworthy, 2017; Harvey, 2015; Hornbuckle, 2017; Rissanen and McQuillan, 2016; Twigger Holroyd, 2016).

These innovations are necessary to close the loops for a circular economy, yet they are still not enough when we consider the scale of applications required and the vast systems that they must contribute to. It is important to challenge and discuss the territorial roots of circular fashion, as the actual system is built and managed in a globalised and scattered way. Some questions need to be raised: what model of production and consumption is expected for territories/regions? Which resources will be used? Is auto-sufficiency an objective to support to improve the resilience of territories? Can the actual complexity of fashion and textile industry be challenged to become re-distributed considering small-scale infrastructures, eco-efficient processes and sufficient-based models of material flows (Dewberry *et al.,* 2017)?

Recent works invite us to think about a decentralised vision for territories, encouraging the adoption of a *cosmopolitan localism* (Manzini, 2013); as well as *re-distributed manufacturing perspectives* (RDM) (Prendeville et al., 2016; Stewart and Tooze, 2015) within environmental engagements. Manzini (2013) points out that small-scale organisations can weave together large, distributed systems. In the UK EPSRC funded RECODE project, Dewberry et al. (2017) asserts that a form of redistributed manufacturing composed of new, localised structures of design and manufacturing, could enable large reductions in resource consumption by limiting waste in a supply chain, and through addressing the flows of resources at critical times in the lifecycle of products.

However, the concept of (Re)-Distributed manufacturing is dealing with many different representations in the real world and brings with it inherent paradoxes and contradictions. Indeed, RDM has been strongly established in relation to a new wave of digital technologies and smart manufacturing processes that are developed for a tighter connection in networks and production-on-demand with more precision and quality. The development of the industry 4.0 into regions does not systematically reconsider the paradigm of infinite growth, nor integrate strategies of sufficiency. On the contrary, they are often supporting the race for technological innovations and tend to accelerate the cycles of information and product consumption without considering all social and environmental consequences.

More effort needs to be exerted to elicit the potentialities, contradictions and paradoxes of RDM and think about how the technologies behind such scenarios will be designed, used and what will be their impacts on people's life and on territories. New discussions about technologies, circularity and sufficiency were recently raised in the Design and Degrowth community via a special edition of the Journal of Cleaner Production (Kerschner et al., 2018) which highlighted the importance of several concepts to consider when building such socio-technical systems. They use the notion of *conviviality,* introduced by Illich and Lang (1973), to re-affirm the necessity of developing democratic tools that enhance the autonomy and creativity of stakeholders, as well as being appropriate and fitting within the local context. Designing for Conviviality involves revisiting local and RDM models, going beyond technological dimensions, and creating space for questioning how and where people are interacting, to avoid biological degradation, system obsolescence, radical monopolies, inequalities and frustrations (Illich and Lang, 1973). Emergent works are exploring how to design for conviviality, documenting tools (Lizarralde and Tyl, 2017; Vetter, 2017) and practices in different sectors like mobility (Lizarralde and Tyl, 2017).

This paper is a first stage analysis of how to apply design for conviviality in the fashion and textile industry. It aims to explore how to enrol stakeholders within a local, redistributed and convivial narrative for circular fashion. It is based on action-research from the project *Circular Design Speeds* (CDS) that fostered an interdisciplinary dialogue between systemic and material designers from the Centre for Circular Design (University of Arts London).

The paper is structured in four parts: in the first section the action-research context will be described through the CDS project and a literature review that analyses where and how people interact in different local models for circular fashion. The second section introduces the methodology of the action-research, by giving information on how the main author has collected data on diverse practices, places and projects and on how the systemic design research was conducted. In the result sections, the authors present and illustrate the new methodological framework PPP for addressing the local and RDM perspective and convivial complexity during the design of circular narratives. It consists of a set of tools that capture: the evolving processes of concepts and their interdependencies; involvement of designers in the local narrative, highlighting the frustrations, contradictions and paradoxes. The last part highlights and discusses the limits and perspectives of this work.

2   Context
This research is hybridizing different research and design practices. It is an inter-disciplinary dialogue between two material design research-practitioners (author2 and author3) and a systemic designer (author1), which emerged during the development of an ongoing industry-based research project.

2.1 The Circular Design Speeds project (CDS)

CDS is a 2 year design residency project of the Mistra Future Fashion programme where the designers have collaborated with the brand Filippa.K to develop prototypes that question the speed behind circular fashion loops. With the vision *"that a conscious consumer has a multi-speed wardrobe with a mix of short-life and long-life garments, new and second hand, rented or borrowed",* a learning design process was engaged with the two teams to raise awareness about product and material speeds, produce a set of prototypes that illustrate the spectrum from ultra-fast to super-slow garments and open discussions about both the future material and social models that could drive a circular and multi-speed fashion and textile industry. Three ranges of speed prototypes were designed by the CCD designers so that the length of use of a garment approximated the expected lifetime of the material: *Pulp it, Laser*, and *Service Shirt* were each respectively designed for ultra-fast, mid-speed and super-slow materials (See Figure 1).
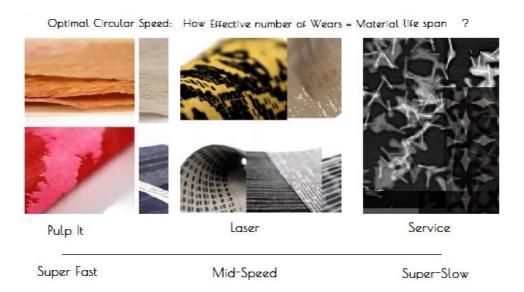

Figure 1: Overview of the material samples used for the three CDS prototypes

- The *PULP IT* Shirt is a paper-based product, using a zero-waste pattern, designed with regenerated cellulose and a range of craft finishing techniques such as natural dyes, crimpling and bio water repellence processes. It is non-washable and designed for a minimal number of uses.
- The *SERVICE* Shirt (by author2) is a 100% polyester product, made using a zero-waste pattern, designed to last more than 50 years through various cycles of uses that are made possible by a series of remanufacturing processes and sharing business models like rental libraries, or family and friends' donation and swaps.
- The *LASER* Shirt (by author3) is a 100% recycled polyester (PET) product designed for the current average shirt lifetime (6 months to 3 years) using zero-waste patterning techniques and

redistributed manufacturing and digital technologies to reduce the environmental cost of finishing activities. Several design loops permit to define different versions for each shirt all along the project.

Due the transversal value of such circular concepts - they had to be developed in respect with the goals and the short-term deadlines of the project – the material designers have looked for ways to work closely with other disciplines to inform the big picture (including the whole lifecycle of the product and barriers to the business enacting short and long term cycles) and consider social and territorial insights when designing these narratives about material circular speed.

The collaboration between the three authors began in January 2018 via an external funding source (the LDOC program) and lasted 10 months. The immersion of the systemic designer in the project aimed to support the maturation of ongoing concepts, by participating in the flow of questions raised by the designers and other stakeholders, by bringing some elements of discussion that help direct the design choices towards a higher awareness of the redistributed manufacturing and local context. The starting point of the action-research was to better situate the different emerging models related to the local narrative and the textile and clothing industry.

2.2   Literature review

Local and circular fashion models have been categorized in two interdependent categories. (1) RDM models via the analysis of makespaces and (2) local community-based practices that encompass a set of initiatives involving more sustainable behaviours from citizens and consumers.

(i)   RDM, makespaces and textile + clothing (T&C) labs

Redistributed manufacturing involves rescaling global production by finding a multi-scalar (home, city, region, globe) and complementary fabrication ecosystem with a coherent distribution between domestic production, social fabrication, circular fabrication, supply-chains for batch production and global supply-chains (Diez, 2018). The potential of makespaces in RDM and the Circular Economy was first identified by Prendeville *et al.* (2016).

Based on Stewart and Tooze's definition (2018), we use '*makespace'* as *a catch-all term for an open access community fabrication workshop regrouping Fab Labs, Hackerspaces, (Re)Makerspaces and other facilities be described as spaces with a suite of fabrication tools and technologies openly accessible for use by a community.* Makespaces are perceived as key spaces that actively interact with local (re)manufacturing businesses and public institutions, digital networks and more global institutions to develop a more sustainable redistributed manufacturing. Kothala (2015) warns designers about the actual diversity of distributed manufacturing models behind the concept of makespaces and their

different effective impacts on environment. Indeed, as an emerging and flourishing concept, makespaces are facing a strong diversity of models and practices, that start to be institutionalised (Braybrooke and Smith, 2018).

Concerning the textile and clothing industry, a strong heterogeneity of places were identified for this study from industrial prototyping areas, school labs, immersive exhibition cultural places, factory stores, craft places, community (re)makerspaces or micro-manufacturing workshops. An emergent network is feeding the discussion about the role and diversity of makespaces in the textile and clothing industry: the TCBL ecosystem (tcbl.eu) is gathering different stakeholders around seven principles (curiosity, viability, durability, multiplicity, openness, respect and responsibility) and create a network of interconnected labs that they defined as *"innovation spaces for exploration, creativity, entrepreneurship, small production, knowledge and innovation transfer to associate Enterprises and local citizens, where facilities, equipment, learning materials, case studies, business challenges, solutions, and exchange of know-how will be made available."* Analysing the landscape of craft makerspaces, Charny et al, (2017) claims that *"no makerspace has a single focus, rather they combine sympathetic activities to deliver their purpose"*. The activity can vary from activism for systemic or societal change, research and development, community and collaboration, learning for personal development, craft heritage, retail or tourist attraction, learning for professional skills or entrepreneurship, tools and technology.

> *(ii)   Local community-based practices for circular fashion*

Different local community-based initiatives are slowly revisiting the distribution of power between companies and their communities. In (Sinclair et al, 2018), we observe that sufficiency strategies like self-repairs are mostly independent from the organisation's control. New practices of how citizens, users and consumers interact with financing, designing, manufacturing, using, maintaining and recycling textile and clothing products is emerging in pursuit of more autonomy and circularity. A classification of these initiatives is proposed below (See Table 1) regrouping citizen financing projects, cooperatives, open-source and co-design processes, collaborative consumption models, information platforms, repair communities, upcycling practices and collaborative territorial resource management project.

Table 1: Classification of local community-based initiatives and respective examples

Model	Description	Examples
Citizen financing projects	Involvement of citizens in financing the development and support of circular fashion projects. It encompasses banking investments, specific taxes, donations to charities or NgO, crowdfunding	Eco-taxes from EPR like Eco TLC Social companies like Hopaal (http://hopaal.com/), Aatise, (https://www.aatise.com/en/), 1083 (https://www.1083.fr/) using crowdfunding/ platform like Ulule (https://www.ulule.com/)

Worker and Consumer cooperatives	Cooperatives are a multi-form model of society where either citizens, consumers or workers can jointly-owned, democratically-controlled enterprise and participate in different activities. Their emergence is often related with a strong territorial or social context like business cessation, or the need for a re-appropriation of a form of consumption.	Ardelaine SCOP (https://www.ardelaine.fr/); Co-operative movement with Rochdale' pioneering in textile, Textile Cooper Friends of light (https://www.friendsoflight.net/) What about Participative Food Coop or Energy Cooperative models enlarged to domestic products like textiles? (Otsokop: https://www.otsokop.org/)
Open Source and Co-design processes	Collective actions fostering the active participation of users and local stakeholders in the design of new products and services for circular fashion. It goes from user feedback experience analysis, online design and customization platforms to crowdsourcing, open source design tools and participative design workshops.	Raidlight platform (https://team.fr.raidlight.com/) Circular.fashion (https://circular.fashion/) Co-designing with local artisans (Mazzarella et al., 2017) Open Design (Smith et al., 2017) Circular Knitic, OpenKnit on http://opensourcedesign.cc
Collaborative consumption models	Fashion collaborative consumption models deals with how people can share clothes and accessories of their wardrobes.	Local Libraries (Pedersen and Netter, 2015) Netflix-for-clothes.pdf Vestiaires (https://www.vestiairecollective.com) VINTED (https://www.vinted.co.uk/)
Information, awareness Platforms (Use)	Set of initiatives helping users and citizens to be better informed about the way their clothes are made and how to optimize their use (cleaning advises…).	Fashion Revolution (https://fashionrevolution.org) - Transparency index / Labels Love Your Clothes (https://www.loveyourclothes.org.uk) Craft of Use (http://www.craftofuse.org/) TheGoodWardrobes (https://www.thegoodwardrobe.com)
Reuse and Repair communities	Set of initiatives supporting users and citizens to be engaged in reuse and repairing activities.	Swap Parties like GFX (http://www.globalfashionxchange.org/) Restart Parties for textile (https://therestartproject.org/) Worn Wear Wagon Tour (https://wornwear.patagonia.com) Reknitting Revolution (https://reknitrevolution.org/)
Material and product upcycling practices	Set of initiatives involving citizens and users in sharing about ancestral and innovative practices for material and product upcycling like patchworking, disassembly/ reconstruction, sewing, coloring, surfacing. It can have the form of demonstration, tutorials, information exchanges, training and workshops or books.	Training from craftmans and material designers Saori courses (http://www.freeweaver.co.uk) Community workshops in Remakery (http://remakery.org/) or Recyclarte (http://www.recyclarte.org/) London guild of spinners (https://www.londonguildofweavers.org.uk) Recipes for Material Activists book of Myriam Ribul
Collaborative territorial resource management projects	Involvement of citizens in local waste management, in the harvesting of agricultural fields or in the re-appropriation of ancestral techniques of transformation for textile and clothing applications.	Chanvres de l'Atlantiques (http://www.nuntisunya.com/) Collective composting

This classification indicates a panel of possibilities for diversifying the involvement of citizens, users and consumers in circular fashion projects. For now, few of these models have been integrated in to the mainstream practices of the textile and clothing industry. Most initiatives remain at experimental and niche levels in the scale of system transitions (Ceschin, 2013). Moreover, some ideas like the one of enlarging participative Food Coop or Energy Cooperative models to domestic products like textiles, are still unexplored. Some initiatives are hybridizing different models by blending their approaches; or combining their activities with different types of industries. This is the case of the Restart Project that organises workshops inviting people to repair products, mainly electronics but also textiles, and maintains an online platform of information to avoid obsolescence and to share good practices about use.

In a way, both makespaces and local community-based initiatives propose new enrolments for stakeholders that are emerging beyond the classic boundaries between users and makers, producers and consumers (occasionally called "prosumers"), workers and volunteers, amateurs and experts. There is a need to better work in close collaboration with more situated stakeholders as the design of local systems (products, services, and environment) for circular fashion is reaching well beyond technological challenges; embracing hybrid stakeholders, new roles for designers and emergent forms of distributed collaborative practices.

3   Method

Systemic design research relies on the main idea of interdependencies. Adopting systemic design is intentionally using a path of design that cares about the boundaries of systems and the interactions of each of their elements. It is used for understanding and highlighting the diversity of representations between stakeholders and for supporting various connections and shifts in term of thinking, patterns, cultures of organizations and societies.

In the case of the action-research in the CDS project, four efforts were made in terms of (1) observation angles, (2) methods for data collection, (c) modes of communication with the project team and (d) reflexivity to follow up a systemic design approach that enabled us to create a rich picture of the convivial complexity present behind each circular concept.

3.1 A systemic view built from the observation of practices, places and projects

Adapted to the systemic view (Functions (do), Structures (be), Evolutions (become)) proposed by Barthelmé et al. (1998), three different angles were selected to explore how to enrol stakeholders in a local narrative of circular fashion: practices of designers (from material, fashion, industrial or service design practitioners), places for making, designing, learning and prototyping, and projects aimed at stimulating circularity at different scales (local and global communities). There is an interdependence between practices, places and projects as practices are acting in places through potential projects, places support people's practices and the development of projects, projects acting as activators for practice and place changes.

3.2 Methodological triangulation

Different methods were involved to gather data: technical documentation through websites and reports of each practitioner, place, project; interviews; participative observation; and field visits. Each angle presented was observed through the lens of one dominant observation method (practices by interview, places by visit, project by participative observations) but not in an exclusive way. For instance, the

knowledge of practices has been also captured by participative observations or visits. An effort was provided to reinforce the appropriation of information via an important level of immersion.

The process of interview consisted of two main parts; the presentation of the research project and a discussion about key aspects which explored the practice of each interviewee (background, processes and methodologies used, technologies and techniques, business models, scale of practices, access, and user empowerment facilitation). The interviews lasted approximately one hour each and were recorded. After each interview, a form was filled out by the researcher and sent to the interviewee for completion and feedback. For the method of observations, other intermediary objects were used according to the context. The main documents collected were photos taken at each visit, interview or project event and meeting reports.

3.3   Modes of communication

Creating inter-disciplinary dialogues involves finding a way for building communication between various mindsets, emotions and time-frames. Diverse mediums and intermediary objects of design were used. While emails and social media were utilised for indirect short-term discussions and inspirations, bimestrial meetings were organised, named as "synergy meetings" to communicate about the global project progression and to present new insights from the designers. Moreover, collaborative writing activities for a poster, reports and two research publications helped to capture the practice of each author and the logical sequences of thoughts, going beyond cultural barriers. Visual mapping techniques were the main tools used by the author 1, to present work and arouse interactions with both internal and external stakeholders. At least three versions were proposed:

- The first one was designed during the exploration of design spaces and was a first draft of a model looking for how to frame the empowerment of users through life cycle stages and territorial scales.
- The second one consisted of mapping the different practice processes occurring in the CDS project with a focus on the identification of real and potential stakeholders in each prototype. A part of this mapping is interactive: researchers used the online tool Kumu (https://kumu.io/) to create it.
- The last one is a draft of a Synthesis Map (Jones and Bowes, 2017) designed as a rich picture to make visible various representations captured throughout the study and to foster new debates in the community about the future implementation of redistributed manufacturing systems in textile and fashion industry. The visualisation contains a set of maps, describing the main concepts, the processes, stakeholder engagement, worldviews and dialogics.

*3.4	Reflexivity*

Reflexivity in action-research aims to take distance with the actions of the project and to better understand the limits and potential use of the study results, as well as to prepare the next stage of actions necessary to pursue the project within an action-research perspective. Adopting critical thinking helped us to design the most advanced version of the framework PPP that gathers the diverse ways to address the local narrative perspective in the CDS project.

4   Results

The framework PPP consists of a set of tools that can help practitioners to design and incubate circular fashion concepts in a local narrative by exploring deeply how places, practices and projects could interconnected.
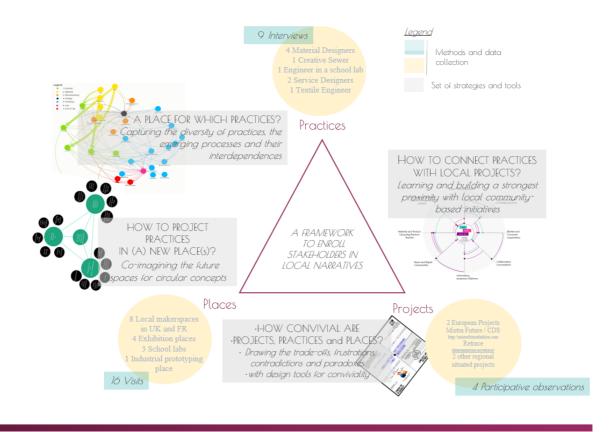

Figure 2: Synthesis scheme of the framework (Practice / Place / Project)

Our focus was on the front-end of circular projects; where and in which places the practices could occur and be transformed. In line with the three classic activities present during the front-end of eco-innovation (FEEI) i.e. opportunity identification, eco-ideation and evaluation of concepts (Tyl et al., 2015b), when exploring the WHERE, designers will realise different cognitive activities: in a fuzzy way, they will look for capturing and situating the actual practices (1), projecting practices within local

community-based initiatives (2) in new local places (3) and systematically assessing and being aware of the trade-offs present behind each projected and embedded practices (4). Different tools were developed and used in the CDS projects to help the team in these activities. In this section, each tool will be presented and illustrated with their effective application in the project.

4.1 A place for which practices? Capturing the diversity of practices, the emerging processes and their interdependences

Each designer has their own practice which engages in different making processes and design decision-making when prototyping. Projects can involves different practitioners that will feed them with their insights and techniques, working both within individual and collective moments. Each moment is realised in its own place, elected in accordance with the project context, the designer habits, and the technical constraints. Capturing the diversity of practices is necessary to select the places of concept incubation as it anticipates the activity that will be generated in a territory, and the capacity and motivations of stakeholders to access to the places.

Designers are often putting on paper what the circular concept looks like and how they are imagining it from a life-cycle process perspective. Drawing and visual mapping tools can help designers model the diversity of pathways explored by each other's ideas and interests, In the CDS project, an interactive visual mapping process was proposed to capture the evolution of the five concepts explored by three designers (See Figure 2 and https://kumu.io/missreal/convivial-textile-redistributed-manufacturing#places for more interactions).

The map was built by collecting data on potential life-cycle processes for each concept from intermediary objects of design and the designer's discourses. Once the first level information about material type, manufacturing, design and finishing practices, use and end-of-life processes was reached, a mapping of the interdependences between concepts could have been developed, discussed and improved by the different designers involved. The use of the online software Kumu has supported this activity by providing relevant functions for displaying in a semi-automatic way processes and interactions. Filters have been applied by tagging concepts with any additional information like life-cycle stages, or stakeholder's identity or location. It was also possible to oscillate between a global view and a more focused view with an adapted zoom command and by selecting a mode that highlights only the information of one specific concept. Finally, the Kumu interface allowed us to not only navigate through the map, but also to add, modify or directly delete elements and interactions.
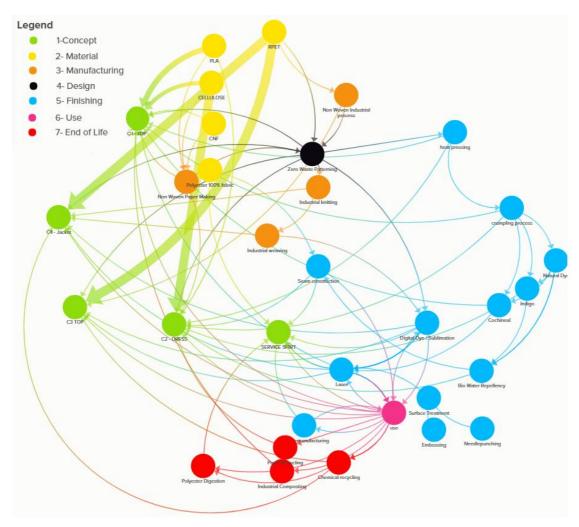
Figure 3: Extract of the visualisation of practices behind the CDS prototypes

4.2 How to connect practices with local projects? Learning and building a strongest proximity with local community-based initiatives

Few tools exist to push to designers to think about localism in the panel of eco-design tools (Tyl et al., 2015a); even if some tools from product-service-systems and business models are starting to provide orientations in that direction (Lizarralde et al., 2014; Melles et al., 2011). A set of systemic design tools was also initiated for the design of flourishing local fashion (Real and Lizarralde, 2017). Sinclair et al. (2018) have elaborated a tool to enlarge the potential panel of stakeholder interventions in redistributed manufacturing futures by focusing on three moments (pre-purchase, purchase, post-purchase) of interaction between stakeholders and product-service systems (PSS) during the product journey. This tool was particularly developed to help designers to explore new opportunities for connecting with local communities.

The exercise consisted of eliciting strategies to connect design teams with local stakeholders engaged in local community-based initiatives during the design of circular concepts. A template with the

typology of local community-based initiatives presented above (See Table 1) was designed (See Figure 4). The aim of the tool is to identify how each design concept is, or could be, connected/related to each category. It can be used to find new opportunities and identify barriers for each concept as well as to compare the priorities given for different concepts (Figure 4).
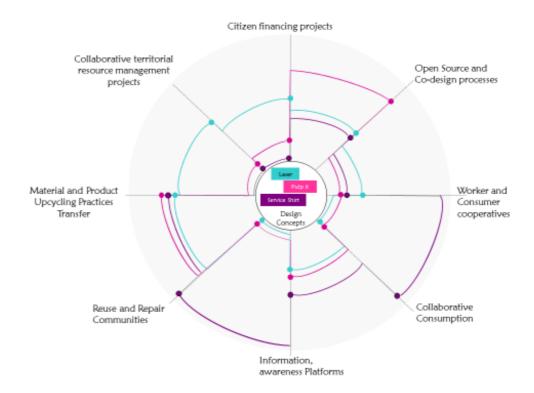

Figure 4: Local Community-based enrolling tool applied to the Circular Speed concepts

For the three main prototypes of the CDS project, different potentialities were identified:
- For *Pulp it*, an interesting strategy relies in developing local natural dyeing processes with emerging communities and Guilds, to close the loop In small-scale locations.
- For the *Laser* concept, a huge potential is noted for working with makespaces, like fablabs and industrial prototyping areas, integrating open-source design and upcycling techniques into their practice.
- Finally*,* the *Service Shirt* concept is strongly related to communities as it involves different cycles of use for a fifty year period; facilitated by collaborative consumption, remanufacturing and repair services, and upcycling techniques.

4.3 How to project practices in (a) new place(s)? Co-imagining the future spaces for circular concepts
This exercise consisted of imagining an ideal place for the concept to be managed locally. It asked the question: What could be the structure and functions of the local (re)-makespaces that will embed the concepts of the CDS project be? Inspired by the patterns of other places visited and the discussion with the project team, a first proposal was mapped (See Figure 5): the place has been visualised with four

main areas: the first point of contact for any stakeholders is a central area where information about the place is offered as well as spaces for socialising, learning, co-designing or even being engaged in participative governance processes. This area is directly connected with a Material Library and stock Management area, a place for Machinery and Tools and a Consumer Distribution platform. Different activities were attributed to each area that involve different groups of stakeholders.

For the second activity, diverse questions were raised to transform this vision considering the project's context: Is the place an open public community venue or could it be owned by one or several companies? Can all the activities realistically be done in one place? How can we connect the place with other local manufacturing activities? Finally, what could be the physical and digital identities of such place?
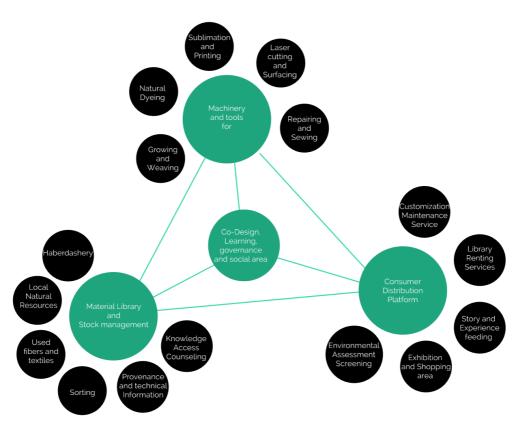

Figure 5: Structure of a local re-makespace for the CDS project

4.4 How convivial projects, practices and places are? Drawing the trade-offs, frustrations, contradictions and paradoxes with design tools for conviviality

Designers are constantly assessing while making, deciding with uncertainty, interacting with intent, diffusing their beliefs, and innovating through translations. Design is about dealing with representations and contradictions.

It is often difficult for stakeholders to assess the sustainability of an emergent material, product or process. The myth of global performance is fraught with paradoxes between sustainability dimensions. By not accepting the tensions at stake, the project-groups often face the illusion of a project with minimal, zero or positive impacts, forgetting to analyse certain dimensions. Chauvey and Naro (2013) identifies this phenomenon as a "contradictory tension denial". They insist on the necessity that contradictions and tensions have to be identified and revealed to everybody's knowledge so learning can emerge from new spatiotemporal interactions between better informed stakeholders, creating a creative synthesis. With this in mind, a lot of different tools were developed to help assess the potential triple bottom line (TBL) impacts of a concept for one dimension, with environmental or social LCA (simplified or not)), for multiple dimensions with simple value mapping or Planet-Profit-People diagram, or in a systemic way with system dynamic TBL tools like causal diagrams. Used in a collaborative way, these tools can capture different stakeholder's views that inform the rich picture of the concept. However, it still remains complicated to address certain paradoxes and contradictions of ongoing and potential systems. The approach of design for conviviality attempts to tackle this issue by inviting people to deal with complex trade-offs based on six different threats identified by Illich and Lang (1973): (1) Biological degradation appears where natural ecosystems are damaged; (2) radical monopoly appears when the balance between "*what people need to do by themselves and what they need to obtain ready-made*" is broken; (3) over-programming occurs when the balance of learning is threatened by rigidity; (4) polarization occurs when power is unequally divided and when the number of underprivileged people increases; (5) obsolescence threatens the balance between tradition and change; (6) frustration is generated by the difficulty felt by individuals pushing the threats away.

Two complementary approaches were proposed to use design for conviviality as a way to elicit the frustrations, contradictions and paradoxes behind the local narrative of CDS circular fashion concepts.

First, a table was built to elicit the frustrations about the local and RDM narrative and connect them to the threats of conviviality (*See Figure 6a*). Data was captured from the interviews and meetings with participants. Secondly, a visual tool that can be communicated to the team was developed to discuss the ongoing tensions and trade-offs of conviviality (*See Figure 6b*). Threat by threat, tool's users have to (1) identify existing problems and solutions for the textile and clothing industry, and (2) discuss a specific trade-off in the case of their own concept. For instance, concerning power issues, more affordable and common-fair solutions are identified and the trade-off consists in discussing the strategies to find the right balance between under and over-privileged people. The tool revisits the actual matrix for conviviality presented by Lizarralde and Tyl (2017) and Vetter (2017): first, the life-cycle perspectives were not retained in this case as it was already raised in other tools. Moreover, the tool focused only on four threats, as other tools have already been developed to discuss biological interaction. For instance, in the CDS Project, designers are collaborating with LCA analysts in Sweden

to help the team members improving their knowledge about the future environmental impact generated by each concept. Finally, the trade-offs were inspired and simplified from the work of Vetter (2017).

Frustration expressions	From	Conviviality threats
Don't know the process *Opacity, no access to do*	User Designers	Over- programming
Complexity to reach quality by making	User	
Duration of the process of making	User	Power- Polarization
Use of water/resource too important / food	Activists	
Prices of good clothes	All	
Too many people involved	Entrepreneurs	
Losing customer value / control	Company	
New technology myths	Designer+ Activist	Obsolescence
Style and taste, fashion influences	Designer+ User	
Mono-materiality as constraints	Designers	Radical Monopoly
Important environmental impact anyway	Designers	
Quality of used fabrics	Sorting Centres	Bio-interaction

Figure 6: Eliciting contradictions and paradoxes with convivial design tools: a. Table of frustrations, b. Adapted version of convivial matrix for the CDS Project

5   Discussion

The potential of makespaces and local community-based practices is still under-explored and under-communicated in the majority of circular fashion projects. There is a need for analysis of how these models are effectively used, or could be integrated, when concepts for circular fashion come to fruition.

5.1 Designers in between practices, places and projects to support circular transitions

The PPP framework proposed four strategies and adapted tools to support designers in the creation of new narratives for circular concepts, integrating local communities and RDM considerations. It was defined here to support changes of practices in the CDS project where designers were looking for new ways to explore the local narrative in the design of their concepts.

The work enabled us to identify new potential partnership opportunities for the incubation of circular fashion concepts, and to improve the familiarity of the project team with the topic of redistributed manufacturing. It also has raised some concerns about how brands could be integrated in a larger ecosystem of stakeholders trying to activate changes on local areas and how their business models will be impacted. Will they create their own places of manufacturing or factory stores? Will they build partnerships with local manufacturers and makespaces to let them make their products? Will they be involved in the development of textile districts? What form of collaboration can they build with actual

initiatives? What will be the future touchpoints they will develop with their actual customers? Are they ready to share the value and re-distribute power with other brands and local stakeholders?

Due to their sensitivity, these issues are still discussed within brands and design teams. Designers are mostly practicing from initial briefs that define both a space of exploration and a set of constraints. The impact is correlated to the level of autonomy and connections the design team has with the rest of the company and its forms of innovation management (Bertolucci et al., 2013). Nevertheless, as the borders within brands slowly open up and evolve, the roles of designers are changing. Designers are seen as good interfaces to activate change and disseminate new practices. Indeed, the practice of material and product design is increasingly informed and steered by the insights of systemic and transition design. Yet, designers are expected not only to connect technical expertise with user needs, but also to envision systems and develop empathic and cooperation skills. They practice individually and in collaborative projects where they might have the role of facilitating the interactions with different visions, techniques and expertise; devising spaces to explore the unknown and create more sense and cohesion.

Within a local narrative, an important challenge for the designer is to build bridges between the practitioners of (circular) fashion and textile design, and people who are directly engaged in local initiatives to exchange knowledge and collectively raise and solve problems *"on the way"*. A wider focus is more and more given to activating empowerment at different scales where designers have to find ways to enrol other stakeholders, like makers, users, citizens, and policy makers. They can create safe and accessible learning spaces to ensure more autonomy to people whatever their profiles or levels of expertise. Different levels of supports from material, product, process or intent, could increasingly be explored in detail by designers in the development of more empowering and local solutions by participating in supplying and animating material libraries, open-source product databases, know-how processes and by creating a stronger proximity with people to overcome psycho-social barriers and generate new bonds toward trust, making and changes.

5.2 Renewing efforts to integrate systemic designers and improve systemic design tools in multi-stakeholder circular fashion projects.

Systems designers act as observers, facilitators, and mediators, looking from the inside. They discuss ideas with designers, making visuals throughout the project. The role of such systems designers is as the intermediaries of innovation and the communication experts. This has to be better defined in actual projects to optimise the relevance and appropriation of tools that can enable change. Systemic designers need to follow the processes of idea development amongst diverse sets of people without being too intrusive; entering in to conversations with a high level of granularity of knowledge, knowing that not everything can be captured, and being able to know the best moments to intervene.

For each strategy presented in the PPP framework, efforts can also be made to improve the ergonomic aspect of tools and ensure a better use from project stakeholders. For example, one of the main difficulties experienced was around the effective appropriation of the systemic design tools by the design team creating short-term prototypes, with the ambition to create new mindsets and practices for the mid- to long-term scenario. A common language and knowledge base had been slowly developing by the different people involved in the project. It required time, practice and high levels of immersion in the project to establish a dialogue with the different expertise; to understand the processes and mental models people are working with.

In the fuzzy frond-end of innovation, finding the right moment, space and process to foster discussions is not an easy task and the result could be far from what is expected. The diverse group of people involved are often in possession of a large amount of expertise, but start by observing that a lot of knowledge gaps prevent them from seeing the full picture. At the same time, the other challenge is to model the complex dynamic of processes themselves and engage people in the design and understanding of visualisation tools.

Some feedbacks on the tools confirm that either the concepts, or the modes of visualisation, might be too complex to be fully presented as such to project members. This could be explained in part due to the low level of maturity of the concept of "conviviality" as well as the critical user experience with interactive mapping tools like Kumu. It is worth having other opportunities where each tool can be used and experimented in different contexts, so that we might analyse how to better determine their relevance during the design of projects.

6   Conclusion

This paper is an exploratory study based on ongoing action-research into the CDS project. Through a rich dialogue between systemic and circular textile designers, the paper outlines the need for exploring circular concepts through the lenses of redistributed manufacturing and conviviality. The results of this study do not pretend to be generalised but do give key insights for design researchers and practitioners in the fashion and textile sector.

The analysis of local community-based initiatives and makespaces highlights that there is a strong diversity and heterogeneity of RDM models that are emerging in localities; most of them still remaining at a niche level in the scale of transition. Designers are seen as good interfaces to activate change and disseminate new practices, in local places, through the development of projects.

On one hand, the paper questions how designers can support the mainstream of the textile and fashion industry in transforming their models and practices so they can participate to the upscaling of this

emerging dynamic. In this line, the authors have applied the PPP framework to the CDS project as a set of strategies and adapted tools that can help design teams collaborating with brands to be enrolled in a local narrative. First, designers are invited to use an interactive visual mapping tool to map the evolution of the processes of the concept. Then, they are encouraged to dedicate time facilitating workshops that co-imagine future spaces of concept incubation and develop strategies to better know about and connect with local community-based initiatives. Finally, they are invited to use design tools for conviviality to assess their concepts in a more systemic way. On the other hand, designers can be involved locally, in new makespaces, at a community level, enrolling a new generation of social entrepreneurs to develop their skills, their business models, to document and experiment new techniques and processes, and connect them to other initiatives and networks.

Whatever the type of design project, additional efforts need to be done to ensure their coherence with the territorial context, and with an effective politic of sufficiency that guarantees the autonomy of stakeholders. Future works will be realised to support the development of new local initiatives in the textile and clothing industry to help their stakeholders to transform the practices, empower new areas of making, and to reach conviviality by eliciting any tensions, paradoxes and contradictions present at each stage of a concept's life-cycle.

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