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Davide Parrilli

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Davide Parrilli[a], Rodrigo Hernández-Ramírez[a]

[a]UNIDCOM/IADE, Faculdade de Design, Tecnologia e Comunicação, Universidade Europeia, Lisbon, Portugal

Abstract

Designers are increasingly confronted with challenges that have a wide social and political impact. In particular, we identify threats to people's informational privacy as a worrying challenge for human beings. Scholars concerned with surveillance capitalism and society denounce the massive extrapolation and use of people's information leading to its commodification and jeopardizing the possibility for 'data subjects' to be free and autonomous in their choices. According to commonly accepted paradigms of design ethics, designers are now called upon to tackle macro issues with broad relevance for entire communities. Hence data privacy should be a concern for design and designers. Among design disciplines and practices, we identify service design as the practice that should naturally be more concerned with privacy for its focus on interactions, because contemporary services necessarily involve the collection and processing of people's data. This paper assesses the role of service designers in identifying preferred futures for privacy and designing accordingly. Building on a multidisciplinary literature review, the paper addresses an existing gap in service design. Moving from servitization scenarios, the paper creates a vital link between service design and informational privacy as a universal human idea. Expanding on contributions from ethics traditions and approaches, the paper sets the foundations of privacy ethics for service design. Within this framework, finally, this work discusses how service designers should define preferred futures for privacy and lead the creative process of designing ethically-minded solutions for privacy.

Keywords: Ethics, Information, Privacy, Service design

Introduction

Design is a domain with increasing political and social relevance. Designed objects shape how people live, consume, interact, and ultimately exist (Verbeek, 2014). Designers must stand at the forefront of the conversation regarding the future of humankind. In some instances, the political dimension of the designer's work prevails over its function — examples are Italian radical design, anti-design, new design and conceptual design movements in the second half of the 20th century, as well as contemporary critical design (Malpass, 2019)—although all design is political (Pater, 2016).

When designers work to reduce social inequalities and injustices (Fry et al., 2015), their actions necessarily carry ethical and political implications (Papanek, 2019). According to this approach, the challenges facing humanity and the corresponding risks for human health, security, prosperity and survival reveal the need to embrace a vision of the designer as a problem-solver — and, more and more, a leader in collaborative problem-solving — through designed solutions which are morally and politically meaningful. This activity occurs within a broader social, political, economic, and natural context upon which designers traditionally (and, often, inescapably) have little margin of intervention.

Among design practices and disciplines, service design potentially offers a holistic approach to the solution of macro or wicked problems (Rittel & Webber, 1973). Service design is a fairly recent discipline (Evenson & Dubberly, 2009). It is attached to a design thinking approach (Brown & Katz, 2019; Grenha Teixeira et al., 2017) that promises a holistic vision of complex problems and their solutions. Service design is fundamentally a social activity, given its focus on interactions between users, citizens, services and

technologies. Designing the conditions for such interactions (Penin, 2017) necessarily involves making ethical and political decisions. The areas where service designers have the most significant impact are often civic, such as public transportation and health (Meroni & Sangiorgi, 2011; Penin, 2017; Raun, 2017).

Therefore, service design is inextricably tied to some form of political and social responsibility. Because service design is intrinsically focused on interactions — between humans and service providers; humans and technology and between humans as users — it intersects a dimension of human beings still largely unexplored in the design literature: their information. Data privacy has been identified as a major challenge with social and political connotations for contemporary humans. The protection of personal information is a wicked problem that requires a careful balance between privacy and different values, such as personal and state security — but also the legitimate claim of companies to make a profit in a data-driven economy. Protecting people's information is one of the most pressing social issues in our contemporary surveillance society (Capurro, 2005). Wherever we go, we are followed, tracked, and monitored by pervasive technologies that can reveal exactly what we are doing and will probably do next, based on our past behaviours and other data collected throughout our lives.

This must be a concern for service design because virtually all designable artefacts and interactions that constitute a service (Kimbell, 2011) involve the collection and use of people's information. Privacy is a political challenge that requires balancing the interests of personal information providers (users of services and citizens) against those of their processors (service providers and any third parties involved in the processing activities, often surreptitiously). However, a reality check reveals an unbalanced relationship between data providers and merchants that heavily favours the latter.

According to some scholars, social dynamics have evolved into a form of unfair playground of control and domination by governments and Big Tech corporations, which they refer to as surveillance capitalism (Doctorow, 2020; Foster & McChesney, 2014; Zuboff, 2019). The evolution of surveillance capitalism is shaping citizens' perceptions of informational privacy — that is, the right to control who, when, to what extent and how can have access to and use somebody's personal information (name, contact details, personal images, biometric data, genetic data, etc.) (Westin, 1967). Surveillance capitalism has paved the way for the emergence of a real surveillance culture (Lyon, 2017), where people not only accept being monitored, observed and tracked almost continuously but eagerly participate in a sort of voluntary surveillance (Albrechtslund, 2008).

Given the framework described in the previous paragraphs, this paper addresses the following research question: *What should guide service designers to choose a preferred future for privacy and design accordingly?* The paper explores the possibilities offered by ethics to act as a driving force for service designers to create privacy-oriented solutions. Building on the mapping of futures proposed in the speculative design literature (Dunne & Raby, 2013), we introduce the idea of a preferred future as the framework for the work of service designers who create privacy solutions.

Through a multidisciplinary literature review, this paper explores how ethics can support a designer's definition of a preferred future for privacy and guide an ethical service design practice for privacy. Despite its impact on users and organizations, to the best of our knowledge, no researcher has previously investigated the role of ethics in service design and privacy. This paper fills a gap in service design research because service design has not yet developed a comprehensive approach to privacy issues from an ethical perspective.

In the first section of the paper, we connect informational privacy and service design by assessing privacy threats in servitization scenarios. Next, we define the foundations of privacy ethics for service design. In the third section, we build on privacy ethics for service design to discuss how service designers should define preferred futures for privacy. Finally, we introduce our future research, together with some concluding remarks.

Privacy and service design: Crossing paths

We propose approaching the relationship between privacy and service design through the lenses of servitization. The increasing trend of servitization, where companies offer solutions composed of tangible products and services, such as "X-as-a-Service" for cars, bicycles, furniture, etc. (Vandermerwe & Rada, 1988), is driving the expansion of service design. Further, the literature highlights service design as an effective approach to solving the challenges of servitization (Calabretta et al., 2016). Thus, the servitization of design products is a typical outcome of service design as practice.

This shift from selling material products to offering bundles of products and services significantly impacts the provider–consumer relationship, dilating it over a longer period (Costa et al., 2018; Oliva & Kallenberg, 2003) and involving the exchange of service-related personal data. The act of buying a product immediately is replaced by a longer-term relationship between the parties that lasts until the end of the contractually agreed consumption of the product by the consumer.

Servitization and virtualization, which refer to the dematerialization of traditional tangible products, are related concepts. However, servitization does not necessarily involve the virtualization of physical products. For example, while software has moved from material support to software as a service (SaaS) in the cloud, a shared car or bike made available to users through an app still retains its physical dimension. What is disrupted in the sharing economy (Albinsson et al., 2018) is the exclusive link between object and user/owner — the idea that one product has one owner and one user. This model has been replaced by multiple users for a single product and one owner. Another aspect of the sharing economy is the need for providers to know who is using the object and monitor users to protect the service provider's assets against theft, vandalism and misuse.

The servitization of products often adds extra layers of interaction and complexity between the product and its users. Buying a car involves a simple interaction between the buyer and the seller. However, using a car-as-a-service involves regularly interacting with different people and departments within the mobility provider. An app serves as an interface to find a nearby car and reserve it, and the cockpit interface is used to unlock the car and start the engine; these are some of the several touchpoints in the service journey. From a privacy perspective, several layers of complexity are added. The car seller typically collects users' data when ordering the product and signing the contract(s) but will not have access to information about the buyer's use of the car.

On the contrary, the car-as-a-service provider collects all information about users, including car use, such as where drivers go, how long their trips last, what time of the day they use the car and how frequently. If the car is provided with a dashcam, the service provider will collect information about other road users. Furthermore, if a security camera is installed inside the vehicle (unless prohibited by local legislation), the provider will know whether the user is driving alone or with someone else.

The servitization of products leads to a significant increase in personal data collected and processed by service providers, which can potentially threaten users' privacy. The more interactions within a service

journey, the more data collection and manipulation opportunities. From a business perspective, this offers new possibilities for companies by expanding their assets with valuable customer information. However, the uncontrolled multiplication of personal data processed by service providers has given rise to another phenomenon: the commodification of personal information and human experiences. Couldry and Mejias argue that "capitalism today, in the expansionary phase we call data colonialism, is transforming human nature (that is, preexisting streams of human life in all its diversity) into a newly abstracted form (data) that is also ripe for commodification" (2019, p. 32).

Service design focuses on "understanding customers' experiences" (Costa et al., 2018, p. 114). As such, it necessarily relies on users' and stakeholders' personal information. To define personal information or data, we rely on the relationship between the information itself (e.g. "loving red cars") and the person to whom that information refers (e.g. "John loves red cars"). Personal data is the information that refers to an identified or identifiable person. This connection sustains the legal notion of personal data in several jurisdictions, including Brazil, China and the European Union.

In practice, it is inconceivable to design service solutions, including servitization solutions, that do not involve customers' data. Interactions with service providers (either in person or through digital touchpoints) and other users necessarily imply a flow of personal information. Therefore, issues regarding informational privacy naturally emerge. Interestingly, legal hurdles can be avoided by anonymizing personal data (when feasible or reasonable). However, essentially anonymized data differs from anonymous data. Anonymization implies that personal data is collected *before* it is indeed anonymized. This process reduces the risk of data infringement but does not eliminate it. Anonymous transactions are a more efficient strategy because no personal data is collected so no privacy claims can be made. However, the nature of the service itself often renders anonymous transactions meaningless or impossible. This approach is only realistic when providing a one-shot standard service that does not require any further follow-up action by the service provider or customer, such as when a customer buys an item from an automatic vending machine that requires cash payment.

Regardless of the legal liability of service providers for the processing of personal data, service designers have ethical responsibilities regarding the personal information they collect from people (Monteiro, 2019). Although corporations often collect personal data that may not be immediately useful or may never be useful (Doctorow, 2020), service designers who act and think ethically must reject this questionable practice (Bowles, 2018; Falbe et al., 2020).

Privacy ethical dilemmas in service design
Service designers frequently face ethical dilemmas, some of which are not strictly related to privacy. For example, who are designers ultimately working for? (Monteiro, 2019). However, the answers to these questions influence how personal information is treated. Service design and ethics intersect regularly. However, a literature review reveals that service design (and, in general, design) lacks a solid foundation to support true privacy design ethics.

Value-sensitive design (VSD) should be recognized for its attention to privacy, though mainly from a pragmatic perspective. VSD explicitly acknowledges privacy as a design value (Cummings, 2006; Friedman et al., 2003; Friedman & Hendry, 2019). However, VSD does not logically or ethically justify its claim that privacy is a value. This allows for the possibility that privacy may lose its status as a value if social attitudes evolve in that direction. Because values are intended as what a person or a group determines important in life, VSD has weak normative orientation and high designer agency, thus leaving ample room for subjective

appreciation of values (Donia & Shaw, 2021). Further, the word 'value' is problematic because it is intrinsically culture-related. The literature extensively shows that privacy is closely related to cultures and traditions (Capurro, 2005; Ess, 2020; Ma, 2019, 2021): claiming that privacy is a value as such may be an oversimplification. Additionally, while VSD argues that privacy should be balanced against other values, such as security, the lack of a ranking of values can seriously jeopardize privacy. If security is consistently prioritized over privacy in design processes, privacy becomes an empty word.

The establishment of the foundations of privacy for service design is still an unexplored field in the literature. The first step is to assess the nature of these foundations. A multidisciplinary literature review reveals that privacy is essentially an ethical concern (Floridi, 2014; Sætra et al., 2021; Vallor, 2021). However, we claim that simply transposing philosophical principles into the design field will not suffice and will lead to poor results. Unlike philosophy, design is practice-based and solution-oriented. Effective problem-solving requires good principles that work in practice, not just in theory. As Dorst describes it, a design situation consists of a designer, a design problem, a design context and a design process (2019), but it must also result in a design solution. In the words of Archer, "Design begins with a need. The product is a means for fulfilling that need" (1984, p. 60).

Service designers must decide how to treat customers, stakeholders and their information: as a means to an end (to make a profit, increase control over citizens, stock up assets for future sale, etc.) or as ends in themselves. The answer depends on the ethical approach followed by designers. Utilitarianism and deontology shaped the ethics debate in the last centuries. While utilitarians judge the morality of an action based on its consequences — if the outcome is positive for the majority of people, then the action is moral, deontologists are more concerned with the intention behind the action — if the intention is good, then the action is ethical regardless of its outcome (MacKinnon & Fiala, 2015). As a consequence, utilitarianists potentially justify data surveillance activities if they aim to achieve a greater good.

Policy and business initiatives are often subtly utilitarian in scope. For example, in July 2021, the European Parliament voted in favour of a temporary regulation that allows web-based service providers to detect online material containing child sexual abuse continuously (see Psychogiopoulou & Sierra, 2022). In August 2021, Apple declared that it would scan all iPhones of US customers for images of child sexual abuse, but it stopped the project a few months later (Bromell, 2022; Montasari et al., 2023). Scanning every digital conversation between users to detect illegal material means treating them and their information as a means to reach a positive goal, without inflicting pain or unhappiness on monitored users. In this global and digital Panopticon, initially proposed by the founder of utilitarianism, Jeremy Bentham, at the end of the 18th century (Bentham, 1791/2009), the inmates (aka the users of digital services) are constantly surveilled without their awareness by an invisible guard. They actively cooperate with such surveillance (Han & Butler, 2015).

Deontologists assert that humanity should be treated as an end in itself and reject the idea that the ends justify the means (MacKinnon & Fiala, 2015). This approach protects people's information more comprehensively, mainly through legislation. For example, the European Union's General Data Protection Regulation (GDPR) is inspired by deontological principles (Burk, 2005; Ess, 2019), as are all data protection laws around the world that follow the GDPR model.

However, due to its rigidity, deontology may not be best suited to face the challenges posed by contemporary business models. Despite its inflexibility, deontology finds its privileged application in legislation, which is naturally slow-evolving and technology-neutral. It is famously — and contradictorily —

attributed to Kant that one should not lie even if it means causing the death of another human being (MacKinnon & Fiala, 2015).

Other classical philosophical approaches have been successfully applied to solve 21st-century ethical challenges. Virtue ethics, which aim to improve one's moral virtues through practice, have been applied in design practices: in game design, virtue ethics can guide game developers in designing meaningful games (Sicart, 2009). Vallor argues that "virtue ethics is a uniquely attractive candidate for framing many of the broader normative implications of emerging technologies in a way that can motivate constructive proposals for improving technosocial systems and human participation in them" (2016, p. 33).

Virtue ethics can guide service designers to make ethical choices — that is, to embed morality in their products. Consistent with Sicart's approach (2009), virtue ethics does not imply designing blandly, overprotecting users from ethical threats and unethical content. On the contrary, users of an ethical design product should have the opportunity to face ethical challenges and make choices. Turning our attention to privacy, a service design product that eliminates by design any user interaction with technology, the service provider and other users to avoid privacy threats is not ethical. The same applies when users are forced to interact and surrender their information without having the chance to exercise their autonomy and freedom. As we will discuss in the next section, an ethically-minded service design respects users' autonomy and freedom to decide how they interact with other stakeholders. But this should happen within an ethical framework, which we call 'preferred futures for privacy', that excludes privacy-depriving solutions.

Interactions are at the core of information ethics scholars' approach to privacy: "To be is to be interactable, even if the interaction is only indirect" (Floridi, 2010, p. 12). Information ethics can rigorously sustain an understanding of privacy that transcends cultures. In this sense, information ethics is in a good position to support privacy ethics for service design. Floridi claims that "I am my information", and misusing personal data is equivalent to non-physical personal aggression (2014). This statement is a powerful justification for protecting people's information, including their autonomy and integrity, against any attempts to commodify the human experience.

An analysis and understanding of the relationship between service design, privacy and culture is missing in the literature. Building on our criticism of the VSD approach to privacy, one cannot legitimately take for granted that privacy is a universal value. Indeed, privacy is not perceived and experienced equally across cultures. Historically, privacy emerged in England in the 15th century (Holvast, 2009) and gained legal relevance in the US at the end of the 19th century (Warren & Brandeis, 1890). In contrast, in Asian cultures, individual privacy has traditionally been seen as egoistic (Ess, 2020; Yao-Huai, 2005). However, ethicists with a Buddhist background demonstrate that this view is somewhat reductionist. Privacy is not exclusively a value of the so-called Western world but is a human universal, despite cultural differences (Hongladarom, 2007). Further, societies evolve; individualism is a growing trend in modern China (Ess, 2020), and the need to protect personal information in the digital world emerged regardless of the local philosophical roots (Capurro, 2005). The fact that many Asian countries, including China, Japan and South Korea, have data privacy legislation in place may be taken as evidence of these claims.

Recognizing the universal validity of the idea of privacy is a fundamental step for service designers to consider when designing complex service solutions. At the same time, understanding cultural differences is a key move in the design process of successful products that are not rejected by users. In service design practice, missing this point can severely damage the fortune of a project. By way of an example, female

patients from specific cultural backgrounds may be less open to providing personal health information to male doctors than other patients. Not considering this aspect in the design of a health service may exclude entire communities. In service design projects that involve the digitalization of services, exclusion is expectable also if digitalization does not consider that some groups may not be willing (or able) to share personal information online.

Service design to build preferred futures for privacy

Scholars agree that service design is inspired by human-centred principles (Meroni & Sangiorgi, 2011; Penin, 2017). However, human-centred design has not yet developed a deep understanding of privacy or the necessary tools to integrate it into its practice (Parrilli, 2021). Nevertheless, privacy is closely related to human-centred design, which ultimately affirms human dignity (Buchanan, 2000). Privacy refers to personal information, including experiences, emotions, thoughts and freedom. Protecting privacy is, therefore, equivalent to defending the most intimate values of individuals, including their dignity.

It follows that a genuinely human-centred service design should protect people's privacy against threats from corporations, governments and other users (Fukuyama, 2022). Any lack of care, abuse or misuse of personal information can potentially impact a person's physical and emotional well-being, ranging from the annoyance of receiving and deleting unwanted marketing emails to the devastation caused by cyberbullying and revenge porn.

From the perspective of information ethics, human beings are composed of information. Therefore, protecting privacy is not only about defending a human value but also a fundamental aspect of everyone's sense of self. Without an ontological connection between individuals and their information, it is impossible to establish a strong understanding of informational privacy or to design products and services that prioritize privacy. Privacy considerations must be integrated into the creative process from the beginning, and the final solutions should prioritize privacy to genuinely respect the human-centred design paradigm.

Service designers must make choices among all possibilities offered in a specific context. Specifically, they must make decisions that project into the future. In 2013, Dunne and Raby mapped the future into four categories: possible, plausible, probable and preferable (2013). They locate the preferable future at the intersection of probable and plausible futures. Despite the complexity of agreeing on the elements of a preferable future, we argue that service designers should design solutions for a *preferred* future within the spectrum of preferable futures.

Within the range of preferable futures, the service design process should lead to a decision about the future that service designers want to see implemented through their designed solutions. A preferred future is an ethically-oriented scenario that service designers want to achieve because they assume that it is beneficial for the communities they work for. This requires an action plan, starting from mapping and understanding the stakeholders' interests to make ethical and political choices about the interests and values most worthy of protection and enhancement.

The definition of a preferred future happens in a co-design process led by service designers: in this sense, this process does not deviate from the co-creation paradigm typical of service design (Andreassen et al., 2016; Ordanini & Parasuraman, 2011; Sanders & Stappers, 2014). Designing without users and stakeholders would implicitly contradict the human-centredness of service design, but the collaborative nature of the creative process implies that service designers should take the lead — an ethical lead. The opportunity and

challenge for service designers is to transmit the values they want to enhance to the users and stakeholders involved in the co-creation, maximizing the chance that the preferred future becomes a widely accepted reality.

A service designer working for preferred futures is neither a designer, a moralist (Wakkary, 2021) — since the use and context of the designed products are more important than the celebration of the designer as master — nor a critical designer. Critical designers challenge ideas and paradigms in design and society, and their real scope is not to design solutions that are implementable and marketable. The Pillow, designed by Dunne in 1995, is an LCD screen that works as an abstract radio, picking up mobile phones, pagers, walkie-talkies and baby monitoring devices, and shows changing patterns in response to ambient electromagnetic radiations. The scope of the object is to question ideas and notions of privacy, and although it is intended to be mass-produced, the authors recognize that it has impractical value (Dunne & Gaver, 1997).

When choosing the values and interests to protect through design, service designers working for a preferred future consider that the rights of users and citizens to have their information treated with respect should take priority over the business interests of corporations seeking to amass personal information for profit and the political interests of governments seeking to control and manipulate citizens (Bowles, 2018; Couldry & Mejias, 2019; Doctorow, 2020; Véliz, 2020; Zuboff, 2019). Achieving a balance between values and interests is always necessary. The friction between privacy and (legitimate) security claims often undermines privacy. In a globally interconnected world, not all interactions are good. Interactions with nefarious intentions, initiated by digital sexual predators, terrorists, hackers and others, must be rightfully detected and blocked. However, this principle cannot legitimize massive surveillance and deny reasonable informational privacy rights.

Service designers should adopt a sensible stance toward ethical considerations. Being morally neutral does not help designers practice ethically meaningful design (Falbe et al., 2020). At the same time, prioritizing citizens' rights and interests does not mean rejecting technology. It is a matter of using existing and future technologies ethically. For instance, installing facial recognition cameras in a massive transport system such as São Paulo's subway without reasonable intentions is both illegal and unethical (Straetmans, 2019). On the other hand, using facial recognition technology to identify and delete images of a victim of revenge porn or child sexual abuse once they are online would be a virtuous use of technology.

The health sector is an important area where ethical and unethical practices should be considered. Transparently collecting and processing patients' data to enhance the value proposition of services is a positively moral approach. For example, it can be used for early diagnosis of serious conditions or to prevent the spread of diseases. However, massive data processing activities done without patients' complete understanding and agreement, solely to increase sales and profits of big pharmaceutical corporations, are unethical.

The reason for this is related to the nature of personal data. The dominant conception of privacy is that everyone has control over their personal information, akin to a property right (Solove, 2006; Westin, 1967). However, we argue that personal data referring to a vast collectivity, such as citizens' health data in a given city or country, assumes a public, albeit confidential, nature. Therefore, using such information only for social and non-profit purposes is ethical. Surveillance capitalism not only commodifies data but also privatizes collective information. The recent deal between Israel's health data and multinational pharma giant Pfizer for vaccines serves as a worrying example of this phenomenon (Choun & Petre, 2022).

The scope of ethically-minded service design — opposed to a profit and opportunity-driven, and therefore amoral, service design — for privacy is to build service design solutions that impact positively all stakeholders involved in the service value proposition chain from different perspectives.

Ethically-minded service design creates a virtuous circuit for all stakeholders, including businesses (Dyllick & Rost, 2017). An ethical approach to privacy makes compliance unnecessary because the solutions are privacy-compliant by design. This reduces or eliminates compliance costs and bureaucracy, benefiting service providers. Additionally, in an increasingly privacy-aware world, implementing poor privacy policies and designing products that show little consideration for users' informational privacy may result in losing clients. For example, in 2021, WhatsApp's update to its terms of service was poorly explained and justified, leading to more than 32 million users migrating to alternative services like Telegram and Signal (Le-Khac & Choo, 2022). While the real world is not yet perfectly ethical, positive change is happening. It is time for service designers to fully embrace and advocate for ethically-minded reforms.

Conclusions: Towards a privacy social and political agenda for service design?

The understanding of how to tackle privacy issues in service design practice is still embryonic in service design research. With this paper, we set a first stepping stone to link privacy and service design, and we based privacy for service design on ethical grounds. We contributed to service design research with the identification of these ethical grounds for privacy, rooted in different ethical traditions (primarily deontology, virtue ethics and information ethics, but also utilitarianism) and guidelines for service designers. The most important principles are for service designers to treat people and their information as ends and not means and not to surrender to the commodification of personal data and experiences. The ethical approach should guide service designers in the present, but more importantly, it will help service designers to set future targets: that is, to identify the preferred futures they want to build. Intentionally, this contribution aims to start a conversation with the service design community and scholars to fully explore the potential of privacy ethics for the practice of service design.

Speculatively, one may have the ambition to translate privacy ethics for service design into a social and political agenda, specifically a privacy social and political agenda for service design. The idea of privacy is a human universal, but privacy is applied and experienced differently across cultures. This paper does not advocate for a total ban on collecting and processing personal information. Instead, it calls for limited, socially oriented and non-opportunistic use of citizens' personal information. The big data economy and society present tremendous opportunities to improve the world through meaningful services. However, the challenge lies in how data is used. A political privacy agenda for service design should prevent the community of service designers from using data for unethical and objectionable purposes, such as accruing profits for companies without direct benefits for society or discriminating against communities and target groups. Discrimination occurs subtly through 'smart' algorithms that exclude many people from realizing their potential.

Our future research is intended to enhance privacy ethics for service design principles and to study how to implement such principles in service design practice. We are developing an adaptive, human-centred and workable privacy ethical framework for service design that will lead to the conceptual grounds for a social and political agenda to discuss with the global service design community. Additionally, the ethical privacy framework will be supplemented by a prototype of an ethically-minded service design product designed to raise awareness among users about the importance of their information and adequately safeguarding it.

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The designer as an agent for promoting sustainability in the creative industries in Zimbabwe

Walter Chipambwa, Kelvin Dekesa, Josiline Mabuto

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Walter Chipambwa[a], Kelvin Dekesa[b], Josiline Mabuto[c]

[a]Chinhoyi University of Technology, School of Art and Design, Chinhoyi, Zimbabwe wchipambwa@cut.ac.zw
[b]Chinhoyi University of Technology, School of Art and Design, Chinhoyi, Zimbabwe kdekesa@cut.ac.zw
[c]Chinhoyi University of Technology, School of Art and Design, Chinhoyi, Zimbabwe jgwisai@cut.ac.zw

Abstract

The scope of this study is to engage designers to evaluate the extent to which they act as agents of change towards achieving a greener world, as their outputs have a significant bearing on how communities consume products or services. The study provides an audit of how the three key pillars of sustainability, namely economic, environmental and social are promoted in the creative industries in Zimbabwe. Five distinct areas in the creative industries were selected for this study: fashion design, interior design, product design, graphic design and multimedia design. Five in-depth interviews were conducted in each sector from which the design agent was purposively sampled. The interviewees were purposefully sampled using their present and past creative work as a key indicator for providing a meaningful contribution to the study. A huge gap with regards to knowledge on sustainability issues was identified amongst designers across the sectors, athough opportunities for improvement were also identified. The study highlights the need to improve sustainability education as a concept for both designers and consumers of products and services. The study concludes that creative industries in developing economies like Zimbabwe have significant potential to contribute towards the achievement of the Sustainable Development Goals (SDGs).

Keywords: Sustainability, Economy, Creative, Designer, Education

Introduction

Sustainable design is one of the tenets of the Sustainable Development Goals (SDGs), as it plays a key role in how humans seek to meet their current needs without upsetting the ability of future generations to also meet their respective needs. Traditionally, manufacturers have employed the linear economy model in which products are made from natural resources and after their use are disposed of in an often unsustainable manner. However, the more favourable and sustainable pathway would be to adopt the circular economy model as proposed by Pearce and Turner (1990), Wastling et al. (2018) and Sumter et al. (2020). A circular economy model aims to re-introduce the used parts of product as new raw materials for another new product to improve resource efficiency.

From the designer's perspective, concepts such as biomimicry, minimalism, cradle-to-cradle and the 4Rs (reduce, reuse, repair, and recycle) become key as they promote circular economy initiatives (Chipambwa et al., 2023; Geissdoerfer et al., 2017; Hall et al., 2023). The concept of design for sustainability is made up of five key principles: biomimicry, cradle-to-cradle, renewability, minimalism and systems thinking. Leerberg et al. (2010) state that design shapes the lives of all humans, and as such designers must consider the impact of their outputs. They go on to suggest that the designer should therefore consider the impact of their design on society, from the initial steps of the design process till the end of the product's life. Margolin (2007) also argues that designers have a crucial role to play in the economy as they determine how humans interact with their planet. The goal of sustainability is to use fewer resources and preferably

eco-friendly options that may be available for the product to be realised.

Sustainability was first defined by the Brundtland Commission as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Keeble, 1988). Sustainability in product design and development has therefore become a major research area over the years (Ahmad et al., 2018). Design for sustainability (D4S or DfS) is part of design for excellence (DfX), a concept that seeks to improve the quality of a product during the design stage. For a product to exist, it has to be designed, and it is during this stage that the materials to be used and the various processes to be carried out in terms of its manufacturing up to its disposal are determined (Sild, 2022). This implies that the design stage is key in determining the effect of the product on sustainability.

The development of sustainable products is an area that has gained popularity in the field of product development (Fernandes & Canciglieri, 2014). It has been established that 80% of sustainability is decided at the product design stage (Ahmad et al., 2018). It then becomes apparent that the designer has a huge role to play in ensuring that sustainable products are launched onto the market. For designers to become active agents of change for sustainability, they should be prepared to move out of their comfort zone and be prepared for continuous learning (Baldassarre et al., 2019).

The industry is facing increasing pressure to adopt more sustainable approaches to product design and manufacturing to remain competitive. Important issues that design and manufacturing companies should consider to retain their acquired market share are maintaining high-quality products, lowering production costs and protecting the environment (Gupta & Vegelin, 2016). Expectations for sustainable manufacturing practices have become more stringent over the years considering increasing environmental degradation, climate change and air and water pollution (Gupta & Vegelin, 2016).

This study sought to:
• Explore the sustainable design concepts that designers and other creatives use in their practice.
• Examine how the concept of sustainable design is embraced by the local designers and creatives.
• Suggest strategies to promote the adoption of sustainable design principles and practices within the design sector.

Literature review
Sustainable design is often linked to green design and ethical design. The motive of sustainable design is to reduce resource use in product creation and reduce emissions to the environment as well as improve its socio-economic performance throughout the product life cycle (Ahmad et al., 2018). Sustainability is made up of three main dimensions: economic, social, and environmental (Gupta & Vegelin, 2016), which are also referred to as the 3Ps, namely profit, people and planet, respectively. Economic viability is a critical factor for the survival of any organization, but it is not enough to sustain the organization in the long term if production causes damages to the ecosystem, emits toxic waste and depletes non-renewable resources. It has become important for any organization to act socially and environmentally responsibly while trying to achieve its economic goals (Gupta & Vegelin, 2016). Munyai (2016) opines that, to increase the capabilities of design, one can look at using concepts such as design thinking, co-design service design and system design. Even though they are not directly linked to sustainable design. they can help in solving design problems.

For sustainable design and thinking to have a positive impact, the designer must think beyond simple constraints by engaging consumers to understand consumer behaviour and expectations. This will in turn produce designs that are driven by value and create an opportunity for the designer to educate the consumer. According to Harper (2018), there is also a need to look at the aesthetic value of the design, as this also in some way affects the user in terms of their habits as consumers. She further argues that it is the designer's responsibility to educate users about the material and aesthetic quality dimensions of the product.

Ahmad et al. (2018) posit that sustainable product design should pay more attention to the product life cycle – from the raw material selected for use, the structural formation, manufacturing and usage to the end of life, reusability and recyclability of a product. Success in sustainable design entails consideration of environmental issues at the inception of the product development process, effective use of tools and environmental design principles, rules and standards and the availability of information required for cross-functional teamwork (Gupta & Vegelin, 2016).

Eco-design or design for the environment (DfE) is an idea or concept that aims to improve the environmental performance of a product (Hauschild, 2004). Fitzgerald et al. (2007) define DfE as "the systematic consideration of design performance concerning environmental, health, and safety objectives over the full product and process life cycle. DfE integrates design-related concepts such as; design for disassembly, recycling, recovery, human health, and safety". Barsanti (2012) argues that the role of a designer has changed from being a creator to being a facilitator of change. This is done through designing products that consider the 3Ps of sustainability.

Three main strategies can be used in the application of the DfE concept. These strategies are minimizing resources and processes, optimizing the product life and planning the end of life of a product. In the first strategy, minimum resource consumption and processes allow for minimum resource use. In optimization of the product life, the goal is to prolong a product's useful life in the market. This can be achieved through designing for the appropriate duration, designing for reliability, facilitating updating and adaptation and facilitating maintenance, repair, reuse and re-manufacturing. Planning the end-of-life strategy seeks to reclaim the primary material used in products after its useful life. The strategy can be achieved by designing for reuse, remanufacture and recycling (Fernandes & Canciglieri, 2014).

Methodology
According to Creswell (2012), the research design should explain the processes followed in the collection of data, the data analysis and how the results are presented. This study was qualitative, as it sought to understand how designers view the concept of sustainable design in the way they perform their duties. The study sought to understand more about the behaviour of designers and their views on sustainability and evaluate the role designers play in the creative economy. The study identified three areas of design: fashion design, product/industrial design and graphic design. The 15 selected participants provided indications of how the sector is embracing the concept of sustainability, although a more extensive sample that can warrant a generalizable result can be studied in future. These three design areas are more common in the local creative industries and have many players who are actively participating in the growth of this sector. Due to the limited resources, the study used a purposive sampling technique to identify and select design participants who were deemed to be knowledgeable about the area and expected to be information rich, as argued by Patton (2002).

The selection of the participants in the three design sectors was based on the assessment of various design products they have contributed as their outputs as well as their social media interactions. The participants were fully informed of the study and they consented to participate before the data collection was done. The interview questions were sent before the agreed interview date so that the participants could familiarize themselves with the trajectory of the study. The questions were both open-ended and close-ended with an opportunity to probe further. Data was analysed and themes were generated from the 15 interview cases.

Results and discussion

Table 1: Respondents demographics and experience.

Respondent	Gender	Position	Years of experience	Educational qualification	Employment
P1	Female	Supervisor	3	degree	Self-employed
P2	Female	Designer	14	degree	Formally employed
P3	Female	Designer	8	masters	Formally employed
P4	Female	Fashion designer	3	Degree	Self-employed
P5	Male	Fashion house director	5	Degree	Self-employed
P6	Male	R&D furniture designer	4	Degree	Formally employed
P7	Female	Designer	2	Degree	Formally employed
P8	Male	Designer	3	Degree	Self-employed
P9	Male	R&D product designer	5	Degree	Formally employed
P10	Female	Interior designer	4	Degree	Self-employed
P11	Male	Designer	4	Higher national diploma	Self-employed
P12	Female	Creative director	3	Degree	Self-employed
P13	Male	Designer	5	Degree	Formally employed
P14	Male	Graphic artist	6	Master's degree	Self-employed
P15	Male	Designer	3	Diploma	Formally employed

Table 1 presents the participants' gender distribution, years of experience and employment status. The design industry is synonymous with self-start-ups, such that one can easily open up one's own company. Table 1 also shows that there was a fair distribution of both female and male participants in all the areas of design chosen for the study. The lowest academic qualification of all the designers was a higher national diploma, indicating a knowledgeable target population. Zimbabwe has seen a steady growth in the number

of tertiary institutions offering a wide range of subjects taught from the lower levels up to degree level. One subject that has been introduced widely in high schools as part of the new curriculum is Design and Technology, which has resulted in more students taking up design-related degrees and diplomas at the tertiary level.

In the design field, the entrepreneurship dimension is much more pronounced, as the skills exhibited can result in the formation of a business that can be grown into a larger operation. In this study, 53% of the respondents indicated that they were self-employed while the other 47% were formally employed. As stated by Fernandes (2019), students who graduate from the creative or design-related disciplines tend to benefit more in terms of entrepreneurial orientation as innovation is part of their key learning outcomes.

Sustainable design knowledge and education

All the respondents pointed out that they knew what sustainable design entails. One respondent said, "*They are designs that are timeless and are produced using organic fabrics*" (Participant 4). The respondents showed that they had an appreciation of the issue of raw materials used in design and also the issue of durability as compared to fast fashion products. Another respondent said, "*Sustainable design is a concept that emphasizes the utilization of the earth's natural products without depleting them so that future generations can also benefit from them*" (Participant 6). Overall, the appreciation of sustainability as a concept that is important in design was evident from all the respondents. Though the respondents reflected knowledge of sustainability, it was evident that those who are self-employed tend to practise it more than the formally employed. This was attributed to formal ways enforced by companies on the design processes that are always rigid. Self-employed creatives tend to explore without limits and thus quickly move with the economic trends.

According to Gwilt (2012), in the case of fashion designers conforming to sustainability, they are affected by the design brief which in turn is part of the fashion brand. Thus they have very little to change as the manufacturer is keen to make as much profit as possible from the particular design. The issue of practising or implementing sustainable design becomes a difficult option as the designer has few options to employ. Only one respondent stated that environmental sustainability is incorporated in their research and development activities and that is when they try to ensure that the design problem is solved.

All the respondents in this study indicated they went through formal design education and they acquired knowledge on sustainability and sustainable design. About 75% of the respondents stated they attained knowledge in sustainability from the various design education qualifications they undertook. The respondents (66%) also cited personal study as their source of knowledge on sustainability. Social media platforms were also highlighted as key sources of information on sustainability. One respondent acknowledged, "*I got to know about sustainability through a Facebook advert on sustainable fashion and started following it, and ever since I am now actively participating in some initiatives on sustainable design and eco-design in fashion*" (Participant 2).

Zimbabwe is a developing economy, and as such social media plays an active role in promoting sustainability, a view also supported by Bruce et al. (2022), who conducted a similar study on SMEs in Ghana. From this study, it was highlighted that very few companies are doing on-the-job training for their employees, especially on issues to do with sustainability, a finding also supported by Chipambwa et al. (2023) and Sumter et al. (2020). This could be attributed to economic challenges facing many companies

in the country in that they end up trying to cut costs by not conducting training, which businesses view as a financial burden to their operations.

Challenges faced by designers in sustainable design

The respondents cited several challenges they faced as designers in promoting or implementing sustainable design. One respondent said, "*The society as a whole is finding it difficult to practise sustainability as they are stuck with what they are used to/they are familiar with*" (Participant 10). The respondent further explained that people are usually not comfortable with new ways of doing things, hence as a designer it is risky to bring in new ideas that promote sustainable design. Another respondent said, "*There is a lack of time and commitment from designers themselves and also a lack of financial resources to effectively connect key stakeholders in raising awareness and contributing to the local pool of sustainably designed/made solutions*" (Participant 11).

Many players also cited the worsening economic situation as a key setback, as designers cannot expand their operations with ease. It was also highlighted that some sustainable design concepts are difficult to push onto the market. Upcycling fashion products or industrial products for example can be a challenge as customers might view the products as trash. This then makes it difficult for the designer to actively promote issues of sustainability, as the market may not yet be ready for such products. The graphic designers highlighted the fact that the absence of sustainable organic inks and paper to print in the market is a challenge. Another designer stated, "*The concept of less is more (minimalism) can be mistaken for laziness*" (Participant 14), and this can hurt one's business. The designer added that the consumers of designs also need to be made aware of sustainability issues so that they can appreciate the designer's perspective in the design of new products.

Another respondent stated that there is a need for homegrown solutions that take all players in the industry aboard. She highlighted the fact that "*There is a need for promoting the use of our abundant local raw materials like our own cotton that has to be spun, woven and dyed using environmentally friendly methods*" (Participant 12). The respondent further stated that there is a need to promote the go green concept with proper care labels on clothes so that consumers are constantly reminded of the role they also have to play in sustainability. Another respondent, a graphic designer, affirmed that "*Consumers need to be made aware of the issues to do with the environment through billboards and also using paper bags that carry the message to promote responsible behaviour amongst the consumers*" (Participant 13).

Promoting sustainable practices

Educating designers was highlighted as key to promoting sustainable design. Though the respondents explained that they acquired knowledge on sustainability through formal education systems, it was pointed out that many tend not to put it into practice. One respondent said, "*Yes, I learned about sustainability at college but the content was too basic compared to what I know now. It was more of an introductory nature and less about practice*" (Participant 4)*.* A related response was, "*There is a need to educate learners on sustainability from the primary level in the form of projects they can undertake so that they develop a better understanding and an appreciation of sustainability and hence become responsible citizens*" (Participant 9).

From the responses above, one can conclude that there is a need to improve the way sustainability is taught so that there are environmentally conscious consumers and designers. Another respondent also suggested that symposia or workshops could be held for specific industrial sectors so that designers

recognize how their operations affect the environment and have them suggest workable solutions specific to their sector. Graphic illustrations that encourage users to recycle or reuse various packages can also be used as a way of communicating with users so that they play a role in promoting sustainability. Designers can also use the eco-friendly design concept so that they produce durable products that are designed with the environment in mind.

Conclusion

This study points out several key issues that affect the design industry in Zimbabwe and how these could be solved. In the area of fashion and textiles, there is a need to promote the use of natural fibres like cotton as this promotes the local cotton farmers and at the same time supplys sustainable material for use in fashion design. In graphic design and printing, use of organic inks that are not harmful to the environment is also another alternative that can be adopted by users. Social media can also be used to promote sustainability initiatives as it can easily reach out to a larger audience unlike workshops or symposiums that target specific groups. Educating design consumers on sustainability also results in a knowledgeable community that can take initiatives in promoting sustainable behaviour and consumption. The educational curriculum can also be improved such that sustainability issues are imparted early in the educational journey of students and through tasks or projects that can make students learn from experience. Workshops or symposia to upgrade skills for the informal sector in the creative design industry can result in positive reaction from these players as they play a key role in these economies.

The designer must take an active role in promoting sustainability, as their design ideas result in products or services consumed by users. Designers should be ready to explore new horizons and continuously learn new ways or strategies in design practice that conform to the continuously changing standards set for sustainability. Manzini (2009) states that if designers are to be active agents of change for sustainability, they should move out of their comfort zone and continuously learn to perform their duties differently. The designer plays a crucial role in influencing the sustainable adoption, use and disposal of any product by fully embracing the design process of sustainable products.

A generation of designers is needed who can work with the industry in promoting sustainable designs in Zimbabwe. The higher education curriculum must be audited to establish if it responds to the expectations of sustainability. Designers in today's world need to change the way they approach their design projects by going beyond the aesthetic value of a product but rather looking at how the product is going to be made, used and discarded. As a developing economy, Zimbabwe still has an opportunity to develop a more holistic approach towards the use of its natural resources, and designers or the creative industries sector can prove to be very useful in such national agendas.

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Upskilling marginalised South Asian women based in the United Kingdom through a home decor social enterprise: A collaborative training framework

Neha Mathew, Francesco Mazzarella

Upskilling marginalised South Asian women based in the United Kingdom through a home decor social enterprise: A collaborative training framework

Neha Mathew[a], Francesco Mazzarella[a]

[a]London College of Fashion, UAL

Abstract

The international fashion industry is heavily reliant on Asian manufacturers, and garment workers are predominantly South Asian women, who work in deplorable conditions and face abuse from their employers. Furthermore, despite the growing demand for British-made goods, the fashion and textile manufacturing industry in the United Kingdom (UK) is facing a severe shortage of skilled machinists, also due to Brexit and the increasing disinterest of young people in learning making skills. Within this context, this paper reports on a project aimed at developing and testing a collaborative training framework for social enterprises wanting to upskill marginalised South Asian women and support their employment within the fashion and textile industry. To meet this aim, semi-structured interviews, a series of co-creation workshops, and a focus group were conducted as part of participatory action research conducted in the UK. Findings from the primary and secondary research validated the need for collaborative training programmes, while the delivery of the co-creation workshops aided in the development of a guidebook. The paper proposes a framework and discusses how it can be adopted and adapted by social entrepreneurs who want to upskill marginalised South Asian women in the fashion and textile industry. In conclusion, the paper highlights the original contribution of the research to the theory and practice of social entrepreneurship and outlines recommendations for further work.

Keywords: Ethical fashion, Skills training, Co-creation framework, Social entrepreneurship

Introduction

International clothing companies and high-end luxury brands frequently collaborate with manufacturers in countries such as India, Bangladesh, China and Vietnam (McCosker, 2023). However, this practice often gives rise to unethical supply chain issues, leading to the exploitation of disadvantaged artisan communities, primarily composed of women in these countries (Lewis, 2021). Despite public awareness of this situation, the problem persists.

Consumer attitudes towards unsustainable working conditions are changing, and companies risk falling behind and losing some of their customers if they do not embrace this shift. A growing number of people are interested in craft and design, especially considering requests to empower artisan communities and the devastating effects the pandemic has had on artisan labour (EDITED, 2021). The COVID-19 outbreak compelled retailers to re-evaluate their operations, pushing them towards a more sustainable and ethical approach (EDITED, 2021). In today's environment, simply purchasing artisanal goods is insufficient and can be seen as inauthentic. Companies need to engage artisans from the outset of the design process and ensure that they receive a guaranteed living wage throughout the supply chain to empower the artisans who create their products (EDITED, 2021).

Higher unemployment rates for ethnic minority women in London
London has a higher unemployment rate for women from ethnic minority backgrounds. Women from BAME (black, Asian, and minority ethnic) backgrounds experience an unemployment rate of 8.1% compared to a rate of 3.3% for women from a white ethnic group (Devine, 2022). According to the Office for National Statistics (ONS), the unemployment rate for BAME women increased by two-thirds between the end of 2019 and 2020; that is from 5.8% to 9.5% (TUC, 2021). Ethnic minority groups in Central London Forward (14.9%) and the South London Partnership (13.3%) experience higher inequalities compared to white citizens in the same regions (6.9% and 5.3%, respectively) (Volterra Partners LLP, 2021). Central London Forward (CLF) is a sub-regional alliance representing 12 local authorities in Central London, while the South London Partnership is a sub-regional partnership of five London boroughs.

Exploitation of South Asian artisans under invisible global supply chains
The term 'invisible' is used as a metaphor for how supply chains are not transparent to consumers and the public. Pledging to stop violating workers' rights and making that happen are two different things in the fashion industry. The same brands that insist on the utmost ethical standards in front of the public then demand clothes to be manufactured at an unsustainable pace and overly low price and this leads to worker's rights abuses (Kent, 2020). The laws which are supposed to protect these artisans are commonly ignored or not implemented properly throughout the supply chain (Kent, 2020). Since the beginning of the pandemic, there have been increasing reports of wage theft and increased debt among artisans (Kent, 2021a). In this regard, Alexander Kohnstamm, executive director at Fair Wear Foundation stated: *"I don't think we should continue to do what we have done for the last twenty years. We need much more drastic and ambitious change. To do that, we need new business models"* (Kent, 2021a, p. 2).

With this research context in mind, the project presented in this paper aimed to develop and test a collaborative training framework for social enterprises wanting to upskill marginalised South Asian women and support their employment within the fashion and textile industry.

To meet this aim, the following objectives were set out:
- To critically review theories and practices of social enterprises training disadvantaged women;
- To conduct co-creation workshops in order to elicit issues related to training/upskilling artisans/workers as well as opportunities for upcycling surplus fabrics;
- To develop a collaborative training framework and test it within the context of a home decor social enterprise.

Literature review
Today's fast-paced mass market and globalised fashion industry have given rise to complex and unfair supply chains that are filled with labour infractions — ranging from low pay and overwork to dangerous working conditions, exploitation of child labour and modern-day slavery (Kent, 2021b). Addressing these supply chain issues requires a focus on understanding how businesses are engaging with local communities and labour organisations, while also ensuring the inclusion of the workforce and their representatives (Kent, 2021b). In the future, there needs to be a system of collaboration and legally binding agreements with labour unions (Kent, 2021b).

The UK's fashion sector has experienced significant growth, with retail sales of apparel quadrupling between 1998 and 2018, reaching £60 billion (Fashion Revolution, 2022). British brands and retailers must

adopt more sustainable and responsible practices, including transparent supply chains. Surprisingly, no British brand or retailer made it to the top 10 in the Fashion Transparency Index for 2022 (Fashion Revolution, 2022). The Fashion Transparency Index is defined as the annual evaluation of 250 of the world's biggest fashion retailers and brands graded according to their level of public transparency on human rights and environmental policies, practices, and impacts in their operations and supply chains (Fashion Revolution, 2022). In this regard, Mostafiz Uddin, owner and managing director of Denim Expert Ltd., Bangladesh, claims (Fashion Revolution, 2022, p. 32): *''I think transparency is the future because it has the power to establish trust among people in the supply chain which is essential for the existence of all of us on this planet"*.

Transparency allows workers, labour unions, human rights organisations and others the ability to quickly notify clothing brands of labour violations occurring in the factories that are supplying them, allowing them the option to react, halt and resolve rights abuses at an early stage (Fashion Revolution, 2022). Transparency facilitates brand collaboration and partnership working towards minimising, stopping and preventing labour exploitation within supply chains (Robledo & Triebich, 2020). However, consumers currently lack the information needed to make conscious choices and hold businesses accountable for labour conditions since the origin of their garments remains unknown. Consumers are interested in learning where garment workers are employed in the supply chain as well as whether those who make their products are capable of advocating for themselves for better working conditions (Muller, 2020).

Moreover, the fashion industry's complex and constantly changing global network of manufacturers poses significant challenges that cannot be tackled by any single entity alone (Kent, 2020). Despite public demands for stricter guidelines and companies' claims of responsible sourcing, labourers still endure harsh conditions and meagre wages. In a report published in 2019, the UK House of Commons Environmental Audit Committee voiced concerns that e-commerce companies such as Boohoo were pressuring UK manufacturers to agree to pay illegally low wages (Kent, 2020). If brands want to address the issues of fair wages and labour exploitation in the fashion industry, they must re-evaluate how they negotiate with suppliers and maintain their value chains.

Everlane and other direct-to-consumer businesses have demonstrated how transparent pricing and suppliers may attract customers, but this business model has not yet been adopted by the majority of the industry (Kent, 2019). Manufacturers and sourcing professionals claim that companies continue to frequently change vendors to attain the cheapest bargain, commonly preferring countries having weak labour regulations (Kent, 2020). Nevertheless, there is growing recognition within the fashion industry that true transformation can only be achieved through collaboration and involvement of all relevant stakeholders, even if progress is gradual and challenging (Amen et al., 2021).

To tackle some of the above-mentioned challenges, designers are increasingly engaging in social innovation processes, acting as agents of change and collaborating with communities and other stakeholders to co-create services, strategies and systems (Mazzarella et al., 2021). Social innovations can be defined as "new ideas (products, services, and models) that simultaneously meet social needs and create new social relationships or collaborations" (Murray et al., 2010, p. 3). For such innovations to have a meaningful impact, they must be co-created with designers, artisans/workers, consumers and stakeholders.

Additionally, cultural translation is essential to ensure that these innovations align with contextual factors,

addressing the important aspects of social acceptance and preference, which are often overlooked (Meroni & Selloni, 2018). Designers can play a role not only in developing social innovations but also in shaping new social entrepreneurial models for sustaining and scaling such initiatives (Selloni & Corubolo, 2017). Social entrepreneurs play a significant role in the field of social innovation because their mission is to create opportunities for inclusion. Their social impact activities are commonly focused on economic, social and community development; employment and training; and social services (Drencheva & Stephan, 2014).

With these sustainability challenges in mind, the research presented in this paper focused on London, one of the most ethnically diverse cities in the UK, whose fashion and textile industry is affected by social inequalities and limited access to good job opportunities. For instance, in boroughs like Waltham Forest, which has a diverse ethnic population and lower average income compared to the London average, there is an evident disparity in pay and employment rates among BAME groups (A New Direction, 2019). Unfortunately, the creative sector in London, particularly the fashion industry in East London, lacks diversity and connectivity, leaving the Asian community and former textile workers with limited employment prospects (A New Direction, 2019). This emphasises the need for an encouraging network to foster collaborations between designers and makers (Mazzarella & Black, 2023). The rise of fast fashion has further contributed to the loss of specialised technical skills and a shortage of skilled labour, jeopardising the preservation of London's heritage fashion and textile expertise (Mazzarella & Black, 2023). Therefore, upskilling potential employees and protecting existing skilled labour becomes imperative. In response to the problems faced by South Asian workers in the fashion industry and the demand for a transparent supply chain, sustainable business models should focus on training workers locally and implementing ethical practices, ensuring safe working conditions.

To understand these challenges and identify opportunities for empowering marginalised women, two case studies were conducted by reviewing business reports. Images 1 and 2 synthesise the findings from the case studies on Making for Change and Sewing Friendship. Making for Change in the UK is an exemplary organisation based in London aimed at empowering disadvantaged women through skills training. The Making for Change fashion training and manufacturing unit was developed as a collaboration between London College of Fashion, UAL, and HM Prison Service (Caulfield et al., 2018). The Thusa Batho Sewing for Africa community sewing project, which is based in Durban, can be used to demonstrate how higher education and society can collaborate to challenge prejudice, tribalism and racism through community participation (Mutero et al., 2021). The case studies showcase the importance of co-creation processes in eliminating workers' exploitation and supporting local communities and highlight the need for collaborative training programmes in this context.

Image 1: Case study on Making for Change.

Image 2: Case study on Sewing Friendship.

Research methodology

The research project presented in this paper had an emancipatory and exploratory purpose (Robson, 2002), as it aimed to create opportunities for disadvantaged South Asian women in the UK and to drive social change. Since limited research exists on upskilling this specific group, the project also explored the potential impact of collaborative training programmes in enhancing their skills and career prospects. The research adopted an interpretivist philosophy (Saunders & Tosey, 2013) to gain subjective insights into how local stakeholders can aid disadvantaged women in obtaining the necessary training for supporting secure livelihoods. This project employed an inductive research approach (Strauss & Corbin, 1998), as qualitative

data was collected to understand the impact of collaborative training programmes on upskilling underprivileged South Asian women in the UK and subsequently used to inform the development of a conceptual framework.

Participatory action research (Kemmis & McTaggart, 2005) was the chosen research strategy for this project, as it sought to develop a collaborative framework to empower disadvantaged South Asian women with improved employment opportunities. The first author of this paper actively collaborated with stakeholders and facilitated a co-creation process to develop the training framework. The research employed a non-probability sampling strategy, specifically purposive sampling (Mays & Pope, 1995), to select organisations and social entrepreneurs in the UK based on specific criteria such as location, expertise and roles. However, unforeseen circumstances necessitated the inclusion of a new organisation in a different setting, leading to the use of opportunistic sampling (Robson, 2002). To meet the research aim and objectives, multiple data collection methods were used in the project.

Four semi-structured interviews were conducted via MS Teams with industry professionals with in-depth knowledge relevant to the research subjects, as summarised in Table 1.

Table 1: Industry professional participants.

Participant	Job Role	Expertise
Olusola McKenzie	Founder and Director – Learn to Recreate	Learn to Recreate is a social enterprise which provides a bridge between the fashion industry and access to entry-level opportunities.
Anna Ellis	Head of Business Development – Making for Change	Making for Change is an award-winning project offering women prisoners a route away from re-offending whilst addressing a skills shortage within the UK fashion manufacturing industry.
Dr Seher Mirza	Founder – S jo	S Jo is a social enterprise which creates original accessories, drawing inspiration from traditional textile craftsmanship handcrafted by artisans, mainly women from villages in Pakistan.
Olivia Weber	Creative Director – Olivia Lara (previously, Trashion Factory)	Founder of a non-profit company that promotes upcycling and with experience in delivering free craft workshops to women, providing a safe space for women to meet up and get creative, as well as learn making skills.

The researcher and first author of this paper also facilitated co-creation workshops over two days in collaboration with the Eastleigh Gurkha Nepalese Association (EGNA), a charity organisation based in Southampton, UK. Nepali women with no prior sewing experience participated in the workshops, receiving training in machine sewing and hand embroidery, and created upcycled home decor products using surplus fabrics. The workshops were conducted to validate the need for collaborative training programmes aimed at upskilling disadvantaged South Asian women in the UK. This process contributed to the development

of a framework and explored how co-creation workshops can be used to effectively upcycle surplus fabrics and empower disadvantaged South Asian women through upskilling.

At the end of the workshop series, a focus group was conducted with the participating women, who shared their insights on the effectiveness, challenges and benefits of the training programme being developed. The focus group played a crucial role in testing and refining the collaborative training framework for a home decor social enterprise. The data captured for the research project (i.e. the audio recordings of the interviews and focus group, as well as field notes collected at the workshops and focus group) was thematically analysed, following the method described by Miles and Huberman (1994), encompassing data reduction, data display and conclusion drawing and verification. Nvivo software aided in coding the data, identifying main themes and sub-themes and colour-coding each theme and quote for clarity.

Findings

The analysis of the data collected through the semi-structured interviews revealed five main themes and corresponding sub-themes, as depicted in image 3.

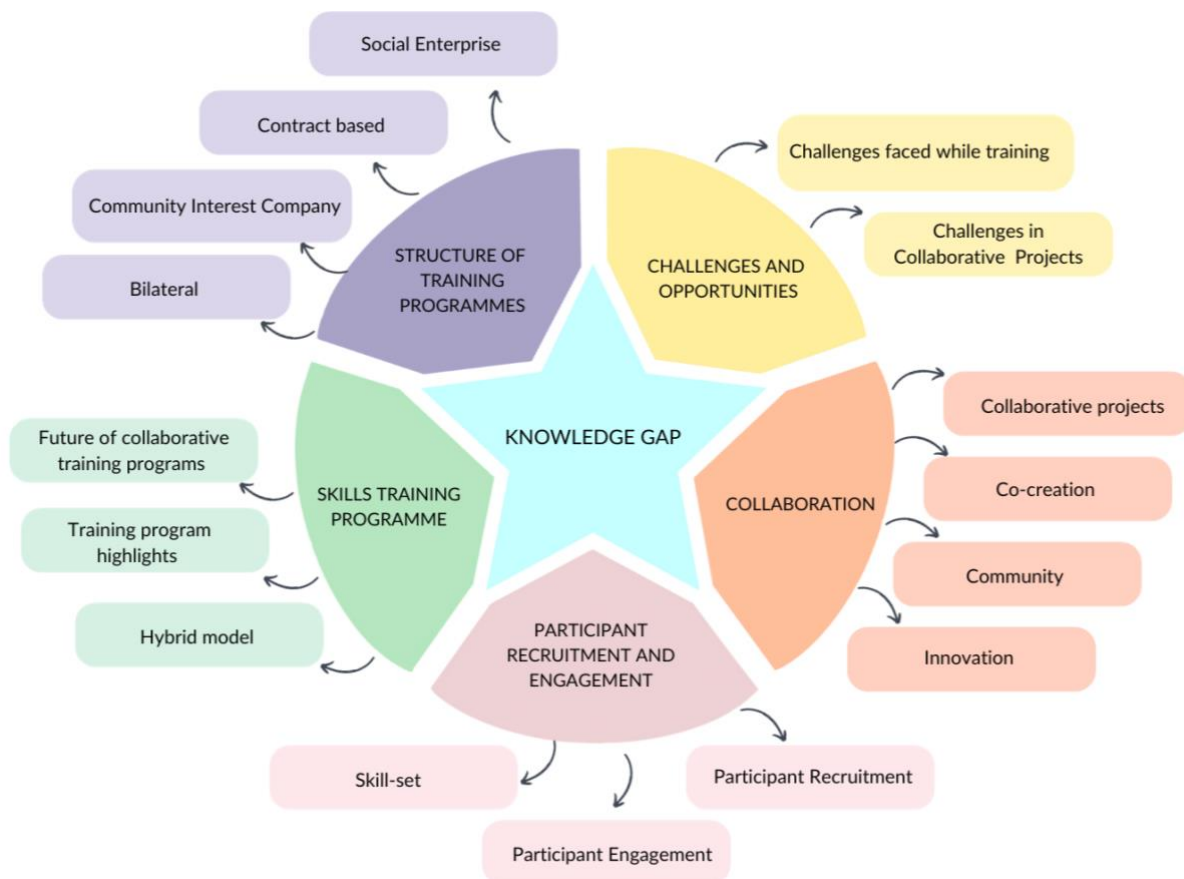*Image 3: Themes and sub-themes emerging from the analysis of the data collected through interviews.*

Collaboration

Collaboration was a concept consistently emphasised by all four social entrepreneurs; in fact, the word 'collaboration' was mentioned 36 times in the interviews. Three participants highlighted the additional benefits gained through collaborating with other organisations, expressing their willingness to engage

in future partnerships. Additionally, all four participants expressed their intent to continue collaborating with workers/artisans.

The participants referred to the concept of collaboration in terms of partnership projects, co-creation, community and innovation. Two participants mentioned that their collaborative approach involves disadvantaged women in product co-creation. Participant 2 creates a safe space for women to connect and openly discuss issues, contributing to the meaningful co-creation of products that hold value for each community member:

> *"We explored issues that we like to talk about and visuals that are connected to that. So, we have a lot of nice feminist mornings talking about things. And then, through that, they developed symbols, letters, writings and visuals, which they embroider on their T-shirts. In the end, everybody had a T-shirt that they embroidered, and then I put all of these on my website with pictures from them and said that these are designed and made by them. Then, the community was able to vote [for] the T-shirts that they liked the most".*

The collaborations aided three of the participants in forming a community of disadvantaged women who play a crucial role in their businesses. The interview findings revealed the feasibility of collaborating with multiple stakeholders simultaneously. Some interviewees formed communities with artisans/workers before facilitating co-creation processes, while others collaborated with organisations solely for training or product co-creation purposes. It was also stated that, since many brands outsource their production in the UK and do not deliver any local training, collaborative training workshop spaces are in demand.

Participant recruitment and engagement
The analysis of the interviews revealed that social entrepreneurs delivering training programmes and engaging in co-creation processes face challenges in recruiting and engaging with participants and need to tailor their offer to the skillset of the people they work with. The word 'participants' was mentioned 30 times across the interviews. All the interviewees, being social entrepreneurs working with disadvantaged groups of women, face unique challenges in participant recruitment. The interviewees highlighted the fact that sometimes participants do not complete the training programme or lose interest in the workshops. Although the training sessions were offered free of charge by the interviewed individuals and organisations, there have been instances where participants lost interest, as Participant 1 explained:

> *"Because those are disengaged at that point, just let them go, but engage other people who are committed. They will gain value from it and will use it to their own advantage. I say that because, anytime something is communicated as free, and if they feel like you are the one that's going to be advantaged by it and not the other way around, then it's easy for people to abuse it."*

The interviewees emphasised the importance of having a structured training programme with engaging and desirable spaces, moving away from mundane classroom settings. Effective communication and providing incentives can also foster participant commitment. Creating an environment that encourages experimental co-creation enables participants to feel a sense of ownership over the products they contribute to.
A challenge discussed by the interviewees is the need to accommodate participants with varying skill levels. Training programmes often involve people who already have sewing skills and attend the sessions to reach

a professional level, alongside others who are beginners. Interviewee 4 highlighted that participants seek to acquire skills in high demand due to the UK's shortage of skilled machinists.

Structure of training programmes

The analysis of the data collected via the interviews contributed to understanding how social entrepreneurs structure their training programmes and identifying various methods used by relevant organisations, along with their respective advantages and disadvantages. This theme was mentioned 27 times in the interviews. The different structures of training programmes included a community interest company, a 'bilateral working model', a social enterprise and a 'contract-based working model' which was further subdivided into grants and training programmes. Each working model operates differently, yet they share similarities in terms of collaboration. However, working on contracts poses challenges, as participants are not financially committed, making it problematic if they lose interest and quit the training programme, impacting the facilitators. Participant 1 provided valuable insights on delivering programmes supported by external grants:

> *"Our approach mainly entails delivering contract-based activities. […] If it was possible, I think we would always just settle for and work only with grants. Grants that don't put additional layers of contractual obligations. That would be our preferred way of working".*

As stated by Participant 2, a community interest company needs to have a social purpose to receive funding from larger organisations to support skills training workshops for women and community members.
A bilateral working model was described by Participant 3, who works in a social enterprise collaborating with artisans to co-create products. This approach ensures equal access to information, training workshops and a platform for feedback and discussion among the artisans. Building personal relationships with the artisans fosters a supportive and comfortable space where they can share their stories and interact with others, enabling them to fit the training within their schedules. Participant 3 described the 'bilateral working model' as follows:

> *"If you think of it in terms of a diagram, it would be me directly interacting with all the artisans who I work with and doing workshops in the village where I work. I meet everybody, and we sit together. And there is a bilateral dialogue or communication. So, it's not through a leader within the community. I mean, there are leaders within the community, those manage materials, or manage the petty cash and things like that".*

Participant 4 highlighted the fact that the social enterprise model offers training programmes and industry-recognised credentials through their collaboration with a university. This model also enables women to apply for jobs and secure employment in making products for commercial clients. According to Participant 4:

> *"We have many parts of Making for Change, working with the community, working with the prisons and also our manufacturing unit here at Poplar Works and at HMP Downview, which is the women's prison. We take commercial orders, we manufacture for designers of small brands, or we collaborate with bigger retailers. The idea behind the social enterprise is really to enable us to employ some of the women that we train as part of our programme".*

The different approaches to collaborative training programmes, as shown in Table 2, provided valuable insights into effective practices and potential pitfalls. Each model has its advantages and disadvantages; understanding these aspects is crucial for developing an effective collaborative training framework, which should align with the organisation's vision and strategy, cater to its specific context and community and ultimately benefit all the stakeholders involved.

Table 2: Summary of findings from the interviews, which informed the development of the framework and the design of the structure of the co-creation workshop series.

Working model	Findings
Contract-based Model	Working with grants that have fewer contract obligations is beneficial because it allows for greater flexibility when delivering training programmes.
Community Interest Company	Having a social purpose aids in obtaining funding and supporting disadvantaged people.
Bilateral Model	Connecting with the people who receive training is effective because it fosters a sense of community and creates a safe environment in which everyone can exchange ideas within a co-creation process.
Social Enterprise	Progression pathways are important within social enterprises which train trainers. This means recognising those participants in the training programme who have become skilled enough to be hired to train other women, amplifying the impacts of the work/project.

Challenges and opportunities

The interviewees mentioned 'challenges' 23 times in the interviews. The data analysis contributed to understanding the challenges faced while delivering training programmes and collaborative projects. Amongst the common issues faced during skills training programmes, the interviewees highlighted language barriers between participants (often non-English speakers) and workshop facilitators. Attendance and participants' commitment to training programmes also resulted as recurring concerns. For instance, Participant 2, who delivers training workshops for other organisations, faces challenges in terms of insufficient sewing machines or storage space when the workshops are delivered over several days. Conversely, some challenges occurred in reverse when partner organisations had all the necessary resources, and the social entrepreneur's role was solely to train people. Additionally, one interviewee shared a negative experience while collaborating with NGOs and larger organisations due to misalignment in values/objectives, as mentioned below:

> *"With larger organisations, sometimes there is a danger of their agendas being quite different. What are their motivations? Is it just for corporate social responsibility? Why are they doing those things? I find that particularly difficult to navigate. So, I work directly with communities. Having worked with NGOs in the past, I'm not saying I wouldn't be open to working with them again, but I think that we have to align our objectives".*

Skills training programme

The analysis of the data collected contributed also to understanding the concept of 'training programme', which was mentioned 14 times in the interviews and was further categorised into sub-themes: training programme highlights, the future of collaborative training programmes and the hybrid model. The interviewees provided feedback and advice on delivering effective collaborative training, and this input was considered during the development of the framework and the design of the co-creation workshop series. Participant 1 stated:

> *"Go and speak with the individuals you want to work with, find out from them what they really want to do, and why. […] If you don't 'parachute' something into a community or try and impose something on someone, and if they feel like there's some ownership because they have had some involvement in the creation of the course/programme, I think they're more vested".*

Understanding customer preferences is crucial in every business, and in this context, Participant 1's statement emphasises the importance of comprehending what people aim to achieve in a co-creation workshop series. The goal is to foster a sense of shared ownership and belonging to a community that values their ideas and thoughts. The primary research findings also highlighted the importance of setting clear expectations for participants at the outset of the training programme to ensure a smooth delivery process. Designing the product to be created during the training and structuring the workshop format in advance ensures a successful and interconnected training programme.

Moreover, the interviewees confirmed the knowledge gap identified in the literature review. Participant 4 highlighted a severe shortage of skilled machinists in UK fashion manufacturing, partly due to Brexit impacting the workforce, as many workers were from Eastern Europe. Furthermore, increasing demand for UK-made products necessitates bridging this skills gap. For instance, the social enterprise described by Participant 4 is striving to address this issue:

> *"There is a real shortage of skilled machinists in the UK fashion and textiles industry. That's something that we want to try and change. […] We think it will also benefit the industry because we are basically able to supply it with people who've got the skills, starting to get the experience, but more importantly, are enthusiastic about pursuing a career in the industry. For us now engaging with other manufacturers, we could be a resource. […] At the same time, we have a shortage of skilled staff to be able to do that. So, hopefully, we will be able to build a bridge to fill that gap in the future".*

Feedback on co-creation workshops

A series of workshops was conducted in collaboration with the Eastleigh Gurkha Nepalese Association (EGNA), which provides machine sewing and upcycling training to disadvantaged Nepali women in Southampton, UK (Image 4).

Image 4: Facilitation of a co-creation workshop.

The lead researcher and first author of this paper facilitated the workshops, providing references to support the creative process, while the participating South Asian women had the freedom to choose their fabrics, colours and designs. These workshops provided a safe space for women to build relationships and gain confidence through learning new skills, like machine sewing and hand embroidery, leading to the co-creation of cushions using surplus fabrics (image 5).

Image 5: Participants showing their upcycled products at the end of the workshop series.

The focus group with the participants contributed to validating and finalising the collaborative training framework developed to upskill marginalised South Asian women in the UK and create home decor products. The thematic analysis of the data collected through the focus group revealed that the participants had no prior experience in machine sewing, upcycling cushions or co-creation processes. All the participants expressed the view that the training workshops provided them with new skills and boosted their confidence. They enthusiastically expressed a desire to attend similar workshops in the future, valuing the unique experience of co-creating products. The uplifting training atmosphere received high praise, emphasising the participants' enjoyment and the success of this collaborative training initiative.

Collaborative training framework

The developed framework addresses the knowledge gap identified through a literature review and confirmed by the industry professionals interviewed for the research presented in this paper. The framework underwent testing through co-creation workshops and refinement via feedback received at a focus group. This collaborative training framework is tailored to a UK-based home decor social enterprise, aiming to train and upskill disadvantaged South Asian women. Additionally, it serves as a valuable guide for other home decor brands or any companies interested in collaborative training for marginalised women in the UK. The framework aims to bridge skills gaps and meet the demand for collaborative training programmes in the country.

Inspired by the concept of jigsaw puzzles, the framework – as illustrated in image 6 – is divided into two phases. The first one represents the three key stakeholders in the fashion industry. In Phase 2, the pieces come together to complete the puzzle, symbolising the resolution of the knowledge gap in this research project.

BEFORE THE COLLABORATION TRAINING PROGRAMME

The idea is to connect all the pieces to complete the puzzle

ARTISANS/WORKERS	DESIGNER/ SOCIAL ENTREPRENEUR	CHARITIES/BRANDS

co-creation   partnership

Artisans/workers who need training or up-skilling to get better employment opportunities in the fashion industry in the UK.

Designer/social entrepreneur who wants to produce locally in the UK or who needs their own production unit in the UK to make sure their supply chain is ethical and transparent.

- Charities or organisations that are looking to help marginalised women get employment opportunities through partnership.
- Brands that are looking to facilitate/ co-host training programs or workshops so that they could also benefit by producing locally in the UK through fair and ethical means.

DURING THE COLLABORATION TRAINING PROCESS

ARTISANS/WORKERS	DESIGNER/ SOCIAL ENTREPRENEUR	CHARITIES/BRANDS

co-creation   partnership

OUTCOMES:
- Skill enhancement through training
- Participation in design and decision-making through co-creation and collaboration
- Employment opportunities
- Fair wages and ethical working conditions due to transparency in the supply chain
- Become a part of a community that creates a safe space
- Engage/connect directly with customers or businesses

OUTCOMES:
- Co-create authentic handcrafted products with the artisans/workers
- Manufacture products locally by setting up a production unit collaborating with artisans/workers which helps in keeping fair and ethical working conditions throughout the supply chain
- Become a mentor for the artisans/workers and can transfer knowledge and skills
- Collaborate with other organisations and brands for larger market access and business opportunities.

OUTCOMES FOR CHARITIES
- Through collaboration, they can help marginalised women get employment opportunities and better living conditions
- Help build trust among the women and make sure other parties are accountable for their actions.

OUTCOMES FOR BRANDS
- Collaboration brings direct business opportunities
- Collaborating can help in making products locally without having their own production units and eliminate the risk of unethical working conditions due to transparency and local access to the units.
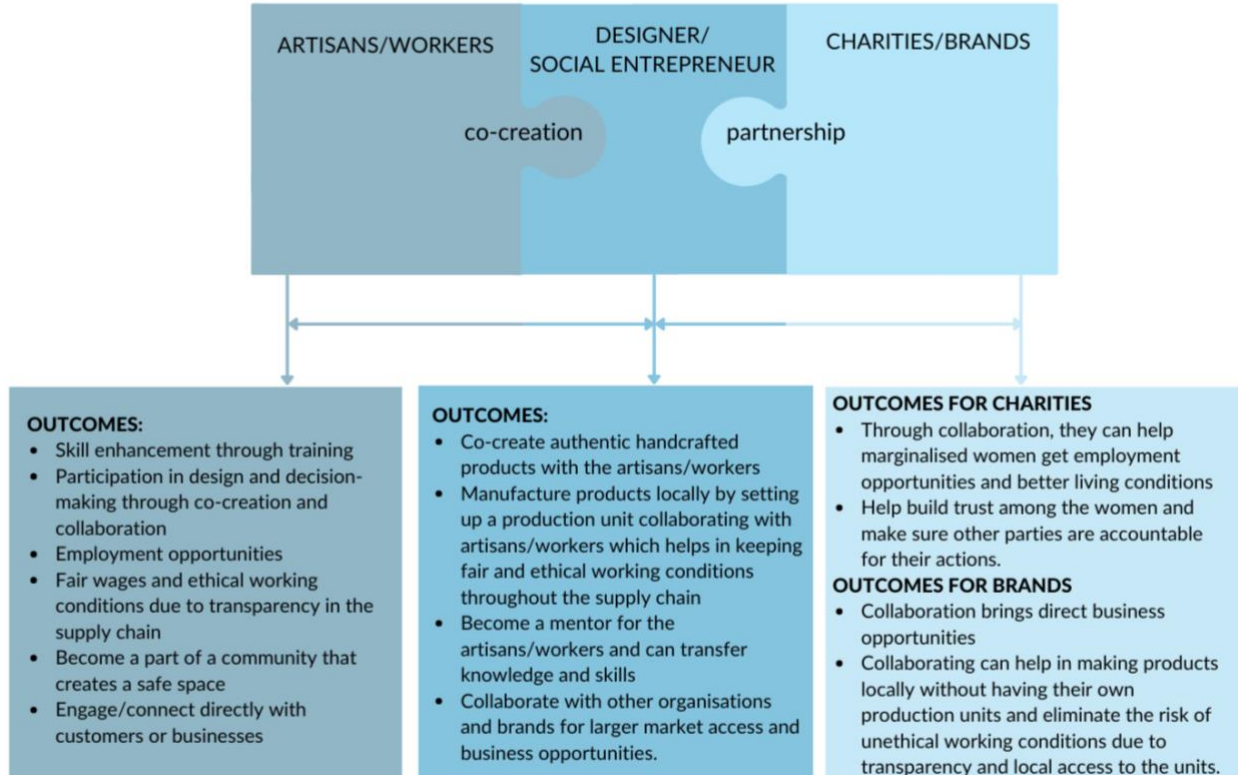
Image 6: Collaborative training framework.

The accompanying guidebook (image 7) offers further details on implementing the framework into practical training programmes and outlines potential developments for Phase 3, which users can adapt to their needs.

UPCYCLING GUIDEBOOK
## Neha Mathew

INTRODUCTION

This manual introduces the process of creating a zero-waste cushion cover/pillow cover, using any material. You will create a simple cushion by upcycling unused or surplus fabrics and utilising the material to its fullest. There are no fastenings on the product, such as zippers or buttons. Hand embroidery and patchwork techniques are also used for embellishment.
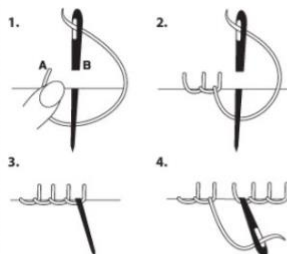

BIO OF THE DESIGNER

Neha Mathew is a London-based textile designer and founder of haav (a zero-waste home decor brand). Her passion is to inspire curiosity and desire within people to make more conscious and ethical choices through haav. haav collaborates with the South Asian women community to uplift and empower them through fair wages and skill enhancement.

HAAV.DESIGNS

LIST OF THINGS

MATERIALS

Any unused fabrics or surplus fabrics. There should be different sizes so that the bigger pieces can be made into the cushion cover and the smaller pieces can be patched on top of it. The fabrics doesnt have to be same colour, it can be any type.

TOOLS

– Fabric Pencils or fabric chalk
– Fabric scissors
– Measuring tape
– Pins
– Ruler
–Embroidery threads and needles

MACHINES

– Sewing machine

FABRIC PREPARATION STEP

Iron your fabrics if wrinkled. For this manual, we are taking the example of a 12" x 12" cushion to guide the steps.

STEP 1

Draw a rough sketch to calculate the margins (1 inch) for total height and width needed to make the cushion cover. The total height and width including the margins would be: 14" X 14".
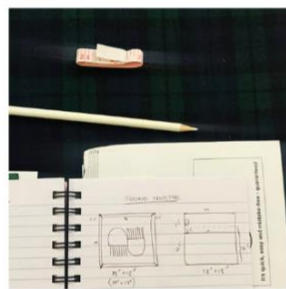
STEP 2

Draw the layout onto the fabric using the fabric pencil. Lay the measuring tape flat on your fabric and mark the margins and connect all the four points to look like a square with 1" borders on all sides. This is the front panel of the cushion cover.

There is a slight difference for the measurements for the back panel because it's cut into two parts - one part will become the top flap and the second part will become the bottom panel

Flap (A) - 6" X 14" with margins
Bottom panel (B) - 11" X 14" with margins

2

STEP 3

Cut all the panels and in total, there will be three panels - front, flap (A) and bottom panel(B). These panels could be made from same fabric and different fabrics depending on the availability as the goal is to utilise fabrics and not waste anything.

3

STEP 4

On the good side of front panel which doesn't have any lines marked with the fabric pencil, is where the patchwork and embroidery is going to be done.

Select any small pieces or scarps of fabrics that can be used to make any shape that can be used as the patch. Once the patches are decided, place it on top of the front panel and pin it so that it won't move while doing embroidery.

STEP 5

Now fold the sides/edges of the patch so that 2cm of the fabric goes under the patch and do blanket stitch embroidery along the sides/edges.

5

STEP 6

This is how it will look once the blanket stitch is done around the edges of the patch.

6

STEP 7

Have done basic lines of running stitches for embellishment purposes.

7

STEP 8

Now the flap (A) and bottom panel(B) can be individually sewn on one of the width side (14" side). The 1" border can be folded and then stitched to secure the frayed ends. After this pin the two back panels together to make into one square panel.

STEP 9

Pin the front and back panels (A+B) together with the good side facing each other so that the traced area can be visible and the two layers of fabrics don't move apart during sewing.

STEP 10

Machine stitch all the four edges following the lines marked using the fabrics pencil.

Image 7: Guidebook.

Conclusions

This paper discussed a research project which made a theoretical and practical contribution to the field of social innovation and entrepreneurship in the context of the UK fashion industry. The project contributed to the development of an original collaborative framework (Image 6) informed by findings from both primary and secondary research on social entrepreneurship. Another key output of the project is a guidebook detailing the implementation of co-creation workshops as part of a collaborative training programme for upcycling surplus fabrics into home decor products. The guidebook can be adapted and adopted by social entrepreneurs aiming to upskill or train disadvantaged women in the UK. Additionally, the research highlighted challenges and opportunities faced in the UK fashion manufacturing industry and artisan communities and generated information valuable to entrepreneurs and researchers concerned with the need for skilled machinists and collaborative training programmes.

Although the research presented in this paper made a valuable original contribution to knowledge, several limitations were faced throughout the project. Despite efforts to collaborate with various organisations and local councils, specific participants, such as disadvantaged South Asian women, could not be recruited for the co-creation workshop series. Additionally, language barriers were faced during the co-creation workshops with Nepali women, leading to minor communication challenges during the focus group. One significant constraint was the tight timeline, as the project was delivered over three months. Only two cycles of participatory action research were completed instead of the desired three due to time restrictions. Furthermore, the proposed framework could not be fully validated with existing social enterprises, as time limitations prevented further investigations.

These limitations highlight areas for potential future research and improvement of the proposed framework. We acknowledge that the framework is in its early stages and requires additional analysis through testing with other established social enterprises to investigate and gather feedback on how it can support collaborative training with its stakeholders. It is suggested that the developed framework gets adapted, applied and explored further in other contexts to understand how it can help disadvantaged women outside of the UK's South Asian community. Moreover, the guidebook for facilitating a series of co-creation workshops to create upcycled cushions could be extended to diverse product categories and applied in partnerships with organisations other than charities.

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A review of community and connectivity strategies for the acceleration of sustainable transitions

Mike Murray, Emina Kristina Petrović

A review of community and connectivity strategies for the acceleration of sustainable transitions

Mike Murray[a], Emina Kristina Petrović[b]

[a]Te Herenga Waka – Victoria University of Wellington, Wellington, 6011, New Zealand.
[b]Te Herenga Waka – Victoria University of Wellington, Wellington, 6011, New Zealand.
emina.petrovic@vuw.ac.nz

Abstract

In the face of the escalating climate crisis, a cross-disciplinary understanding of strategies for stimulating transitional change is critical (Newell et al., 2022). To meaningfully stimulate and accelerate transitions toward more sustainable practices, it is essential to foster broad community action, which requires connectivity within and across disciplines. This article presents the findings of a literature review on physical and digital community organization and connectivity strategies, articulating the potential of participation and knowledge sharing within communities to stimulate meaningful change. Eight physical, community-based strategies are reviewed and analysed, alongside four digital strategies. The selection of physical strategies conveys a range of tried-and-tested methods of stimulating change, while the review of digital strategies explores how traditional methods have been adapted to the digital age. Middle-out approaches to change are particularly focused upon, as middle actors hold a balance of both agency and capacity to drive sustainable transitions, compared to top or bottom actors (Janda & Parag, 2011; Simpson et al., 2020). Awareness of the value of middle-out action is growing, with an example being the European Union's introduction of formal support for 'transition brokers' capable of providing middle-level facilitation for change (Cramer, 2020). By bringing together into one place an analysis of a range of existing concepts and strategies, this review takes an initial step toward establishing a cross-disciplinary source of community organizing and connectivity strategies, which may be implemented by middle actors.

Keywords: Community and connectivity strategies, Middle-out, Sustainable transitions, Acceleration

Introduction and background

In the face of the escalating climate crisis, there is an urgent need to accelerate transitions toward more sustainable practices, and a recognition that better support for the social infrastructure and processes needed for behavioural change would help (Newell et al., 2022). Supporting that, some European Union countries have started introducing formal support for 'transition brokers' capable of providing middle-level facilitation for the necessary transitions (Cramer, 2020). However, better understanding of how to stimulate the collective acceleration of sustainable transitions is still needed (Feeney et al., 2023; Newell et al., 2022).

This article presents the findings of a literature review on 12 physical and digital community organization and connectivity strategies, articulating the potential of participation and knowledge sharing within communities to stimulate meaningful change. The strategies analysed originate from a wide variety of disciplines, including education, economics, policy, business, grassroots activism and organizing. This review synthesizes the acquired knowledge into a cross-disciplinary understanding of methods for accelerating sustainable transitions. A brief historical background of these strategies, including their disciplines of origin,

is provided. The identified strategies are analysed through the lens of a middle-out approach, to identify effective strategies for middle actors seeking to influence transitional change (Janda & Parag, 2011; Simpson et al., 2020).

Top-down, bottom-up and middle-out approaches
Approaches to change are often discussed as either 'top-down' or 'bottom-up' and attract a range of slightly different definitions. The strengths of bottom-up approaches include the potential to identify local issues through participatory community involvement and the ease with which local disciplinary or indigenous knowledge bases can be tapped into (Panda, 2007). Top-down approaches also have their merits within the broad ecosystem of change but also attract some valid criticisms. Finger and Princen (1994) critique the failure of top actors (whether they be corporations or states) to prioritize climate over capital, observing that economic growth often trumps ecological constraints. Finger and Princen (1994) further caution that the bottom-up focus on decentralized, community-led responses makes it harder to influence widespread societal change – hence the importance of using a range of approaches.

As an alternative to this dichotomy, Janda and Parag (2011) proposed a middle-out approach to sustainable transitions. They asserted that through middle-out activity, one might influence actors upstream (i.e. at the 'top'), downstream (i.e. at the 'bottom') or sideways – influencing actors in adjacent or competitive positions (Janda & Parag, 2011; Simpson et al., 2020). A series of case studies by Simpson et al. (2020) found that middle actors within the industry often had less upstream influence and that sideways influence amongst professionals was common.

Janda and Parag (2011) discuss the relationship between individuals as 'bottom' actors and governments or corporations as 'top' actors. Compared to top or bottom actors, middle actors hold a balance of both the agency to drive and the capacity to support sustainable transitions (Janda & Parag, 2011; Simpson et al., 2020). Middle actors are therefore workers or professionals engaged in any field or discipline below government level (Mindell et al., 2021).

This review does not focus on middle actors in any discipline, but instead draws and synthesizes knowledge from a range of disciplines – toward a broader range of tangible middle-out strategies to support transitional change.

Historical context
During the 20th century, there have been some radical expansions and re-conceptions of this area (Sites et al., 2007). Community organization has been viewed as a multi-paradigm field that does not privilege any one strategy (Sites, et al., 2007). On the other hand, it has been recognised that community organizations tend to share four key concepts: development, organizing, planning and change (Weil, 2012).

Although activities during and after the 1960s are often seen as the point of origin of numerous community organization strategies, the beginnings were earlier (Fisher, 1984). In the 1920s and 1930s, following the Red Scare of 1918, the professionalization of social work led to community organization (Fisher, 1984; Lubove, 1975). This is when a distinctive social work practice area became recognised, and these early developments often used mass mobilization (Fisher, 1984; Sites et al., 2007). Further expansion of community organization took place after World War Two when academics and activists called for an increase in equality and improvements in working conditions (Fisher, 1984; Sites et al., 2007). This was

followed by further expansion during the 1960s as part of the civil rights movement and general resistance to Western influence (Fisher, 1984), continuing into the 1970s with the anti-war and early second-wave feminist movements (Evans, 2014; Fisher, 1984).

Early conceptions of what is now known as social entrepreneurship emerged in the 1970s (Nicholls & Collavo, 2019). Fisher (1984) discusses the transition in the mid-1970s from mass mobilization to grassroots organizing. Social entrepreneurship is often critiqued for its reliance on collective action and community organizing methods (Nicholls & Collavo, 2019; Sud, VanSandt & Baugous, 2008), which can be interpreted due to its roots in the post-Fordist economic restructurings of the late 1970s (Sites et al., 2007). The term 'game changer' can be traced to baseball commentary from 1982, before an expanded uptake in economic and political commentary in the 1990s (Safire, 2008). Today, game changers are often discussed with social change and innovation (Avelino et al., 2017), constituting another often-financed approach to social change (Sites et al., 2007; Westley et al., 2016).

The framework of intersectionality was introduced by the Combahee River Collective in 1983 and later expanded upon as intersectional activism by Kimberlé Crenshaw in 1989 (Loopmans et al., 2021). This preceded third-wave feminism, which began in the 1990s (Evans, 2014). The 1990s also saw the introduction of several other strategies. Community of practice (CoP) was introduced by Jean Lave and Etienne Wenger in 1991 as a framework for understanding how knowledge is shared in professional communities (Lave & Wenger, 1991). Furthermore, in 1997 the term 'disruptor' emerged out of the Harvard Business School (Christensen, 1997), and in 1999 the community of inquiry framework was introduced (Garrison et al., 1999).

This shows that there is a range of approaches in this area, which may employ a broad variety of actors. Before determining which concepts or strategies would be most useful for acceleration of pro-sustainable transitions, a literature review was undertaken.

Methodology

The purpose of the review was to explore discussions of communities of practice, game changers, disruptors and similar strategies. Literature was sought based on shared keywords, authors and publications. Communities of practice, game changers and disruptors were identified as three initial strategies to review, with the remainder of the strategies identified throughout the review process. The following series of literature reviews explores the background, functionality, variations and key parameters of the 12 identified strategies. Considerable variation is identified in the status and function of the strategies. They also address whether the strategies can be characterized as top-down, middle-out or bottom-up approaches.

Quantification of the list of identified strategies was conducted by citing data from the Altmetric database, which breaks down 'mentions' of the search term by source type, separating research outputs and publications from other sources of mentions. This quantification was undertaken to ensure that the concepts being reviewed were not too emergent or peripheral to later inform valuable and deployable strategies. The Altmetric database was selected for its broad coverage and variety of analytical metrics for interpreting search results. The results of the physical and digital strategies are listed in Table 1. The prominence of each term in the literature is primarily indicated by the 'research outputs' column, while the

'mentions in policy documents' column indicates how much uptake strategies may have had in political spheres. Unsurprisingly, the more recent digital strategies tended to return fewer results.

Table 1: Mentions of strategies across the literature (Data Source: Altmetric Explorer).

Strategy	Research outputs	Mentions in policy documents	Mentions in peer reviews
Community of Practice	14,162	2,290	156
Social Entrepreneurship	2,551	195	16
Mass Mobilization	2,331	1,518	69
Disruptors	1,699	880	33
Game Changers	867	99	5
Community of Inquiry	722	49	7
Community Capacity Building	470	96	8
Intersectional Activism	207	37	2
Digital Mobilization	1,889	1,608	15
Digital Storytelling	940	26	4
Virtual Community of Practice	225	8	1
Digital Artefacts	210	70	1

Analysis

Two levels of analysis were undertaken: a content analysis and a VOSviewer analysis. The content analysis examined the whole body of literature for critical differences and was used to compile most parts of this review. VOSviewer is a data visualization software, and for that part of analysis, the same 53 texts were used in order to further understand key themes in the body of literature. VOSviewer was used because of the comprehensiveness of the software, which provides immediate digital 2D bibliometric graphs. According to Viswalekshmi et al. (2023) and Elshaboury et al. (2022), VOSviewer is emerging as a widely used network mapping tool. To prepare the data for use in VOSviewer, the bibliographical data for these texts was compiled using the Zotero reference manager application for input into the VOSviewer data visualization software. VOSviewer clusters and maps connections between keywords as indicated by the cluster colour and visualizes their frequency through the size of the nodes.

Results of the literature review

Community of practice (CoP)

A CoP is a group with a shared profession or field of activity, which comes together with a mutual desire to share knowledge, typically regarding a collective concern (Li et al., 2009; Wenger, 1999). These communities are typically informal, ever evolving and bound by mutually valued knowledge production (Wenger et al., 2002), as well as inter-generational participation between newcomers and older members (Lave & Wenger, 1991). The concept originates from education theory (Lave & Wenger, 1991; Wenger, 1998), but has been developed across a range of other disciplines since. If considering architects as middle actors (Janda & Parag, 2011) and acknowledging the proven need for further knowledge sharing to activate the agency of the profession (Simpson et al., 2020), it becomes clear that the CoP is an optimal middle-out strategy for a range of improvements.

In-person workshops, coaching, roundtable discussions and storytelling are tools which support the operation of a CoP (Lave & Wenger, 1991; Wenger, 1999; Wenger et al., 2002). A community coordinator is typically needed to guide the development of a CoP (Wenger et al., 2002). Where members wish to gain knowledge from a range of sources, dividing the workload is often successful, with members then reporting back to the group – documentation and recording of information is also critical (Wenger et al., 2002).

Social entrepreneurship

The field of social entrepreneurship integrates and appropriates a variety of methods from the broader practice of community organization to generate positive and effective outcomes (Nicholls & Collavo, 2019). A social entrepreneur acts as a change agent within society, generating opportunities through transformative action (Maas & Grieco, 2017) and following a similar structure to standard entrepreneurship, but to generate social value over financial capital (Maas & Grieco, 2017). The concept of social entrepreneurship originates from business studies (Nicholls & Collavo, 2019) that note a common critique of social entrepreneurship and the capitalization on collective action. Approaches to social entrepreneurship may be collaborative and even interdisciplinary (de Bruin et al., 2017); however, these still constitute top-down approaches and as such are of less significance to the middle actor.

Mass mobilization

Checkoway (1995) defines mass mobilization as the process of unifying people around a cause through a collective mass activity, such as protests, boycotts or strikes. Mass mobilization is one of the oldest strategies, and its origin cannot be attributed to any discipline. Shultziner and Goldberg (2018) argue that mass mobilization is comprised of three phases: origin, protest and outcomes. Grassroots movements which deploy mass mobilization tactics can be considered bottom-up actors, as the organizing, decision-making and activity come directly from the community, putting pressure on top actors (Finger & Princen, 1994). Finger and Princen (1994) argue that established organizations are functionally no longer grassroots movements but that their inability to dictate downward clearly rules out any top-down intervention. Grassroots movements which deploy mass mobilization tactics may indeed be considered bottom-up actors, as the organizing, decision-making and activity come directly from the community (Finger & Princen, 1994).

Mobilization organized or sponsored by established organizations may not be more effective than grassroots efforts by default, as the use of resources and the effectiveness of leaders are still critical factors (Shultziner & Goldberg, 2018). Social media, digital forums, planning workshops and visual artefacts are tools which support organization-led mass mobilization (Shultziner & Goldberg, 2018).

Disruptors

Disruptors are agents that materially disrupt the status quo of their given industry through entrepreneurial action, acting as a force for change across one or more sectors toward a more equitable society (Burgelman & Grove, 2007; Nicholls & Collavo, 2019). The concept originates from the business sector (Christensen, 1997). Burgelman and Grove (2007) also discuss the cross-boundary disruptor, whose entrepreneurial actions significantly impact the status quo of an adjacent industry. Alpkan and Gemici (2016) caution that disruptors must exercise ambidexterity and be capable of adapting different capabilities to enjoy the most success in driving innovation and change. From a business perspective, newcomers typically take the form

of start-ups (Burgelman & Grove, 2007). This may not be the case for all disciplines, as disruption may also be prompted by shifting discourse or social action (Seglem & Bonner, 2022).

Internal disruptors or cross-boundary disruptors may use a range of discipline-specific tools as available to them (Burgelman & Grove, 2007; Christensen, 1997). Disruptors and their capacity to drive change across one or more sectors (Nicholls & Collavo, 2019) are alluded to by Simpson et al. (2020), who discuss middle actors' potential to act as disruptors across interconnected disciplines. Simpson et al. (2020) discuss middle-out disruption as something which actors may stimulate through their everyday activities.

Game changers
In the context of social change, a game changer can be defined as a macro trend or shift which shapes the trajectory of an industry or practice (Avelino et al., 2017). The concept, as it is discussed, originates from economic and political discourse (Safire, 2008). Innovative ideas or concepts which catalyse social innovation are seminal game changers, while external events which disrupt social innovation are exogenous game changers (Avelino et al., 2017; Westley et al., 2016). The endogamous game changer is the most significant approach for generating change, as it is the only variation to be developed and deployed by the actors themselves (Avelino et al., 2017; Westley et al., 2016). As endogamous and seminal game changers are generated directly and indirectly by the activity of actors in or adjacent to a given field, they can be employed as middle-out approaches.

A seminal game changer is typically driven by new research, policies, theories or concepts, which typically result from a range of efforts (Avelino et al., 2017; Westley et al., 2016). One could also consider conferences, seminars and publications as tools which enable such aggregation. Due to this nature, a seminal game changer cannot be perfectly targeted at a specific audience. Awareness of the phenomenon is still useful, however, as researchers can use their best efforts to predict and contribute to future seminal game changers (Westley et al., 2016).

Community of inquiry
The community of inquiry is an organizing framework for groups within communities who share a mutual interest in a problematic issue and work to investigate, understand and overcome the issue (Shields, 2003). The framework is rooted in educational theory (Garrison et al., 1999) and can be defined as an intersection between cognitive, social and teaching presences; however, the presence of disciplinary experts is not required to facilitate the presence of teaching in a community of inquiry (Garrison et al., 1999; Sharp, 2017). As the community of inquiry forms organically without the presence of a shared domain or profession, the strategy lends itself to the bottom-up approach outlined by Panda (2007), with a focus on learning and participation.

Tools employed by a community of inquiry may include focus groups, storytelling, mapping exercises to gauge opinions and understanding and other accessible research tools (Shields, 2003). As a community of inquiry may have members from broad backgrounds, it may be necessary to test and develop methods during an intervention (Shields, 2003). Tools employed should support participatory democracy so all members can contribute (Shields, 2003). Like the CoP, a 'leader' is typically needed to guide discourse and support the group (Sharp, 2017; Shields, 2003).

Community capacity building

Community capacity building is a practice which has been interpreted in a myriad of ways since its conception in 1992 and may also be referred to as community capacity development or capacity strengthening (Craig, 2007; McGinty, 2003; Sarapura, 2009). The strategy originates from a policy context, specifically environmental policy (Craig, 2007). Nonetheless, the practice principally centres around collaborating with communities to strengthen their capacity to engage with and inform social, political, economic or environmental change – often through policy development and the upskilling of community members (Craig, 2007). Community capacity building is often driven by top-down forces such as government agencies (Varcoe et al., 2011), unlike the more community-driven community of inquiry. In response to this, Varcoe et al. (2011) propose a two-way approach, where the sharing of knowledge and experience is welcomed in both directions. Varcoe et al.'s (2011) two-way approach to community capacity building embodies a middle-out approach, as both upstream and downstream influence is generated (Simpson et al., 2020).

Two-way community capacity building may employ two-way interviews, roundtable discussions, storytelling or visual artefacts as tools (Varcoe et al., 2011; Singh, 2011). Visual artefacts, whether they
be physical or digital, can support this strategy as tools for collaborative research and knowledge sharing (Singh, 2011). The inclusion of incentives may strengthen capacity-building initiatives within professional environments (Sarapura, 2009). With a two-way approach, integrating back-and-forth discussion into the methods employed is critical (Varcoe et al., 2011).

Intersectional activism

Ortiz-Wythe et al. (2022) characterize intersectional activism as activism which consciously considers the intersectional dynamics between social hierarchies such as race, gender, class or sexuality. Intersectional activism does not originate from a given discipline, but instead from black feminist activism (Crenshaw, 1989; Loopmans et al., 2021). From a decolonial perspective, Apostolopoulou et al. (2021) argue the importance of analysing intersectional dynamics to equitably advance climate justice, environmental policy and conservation policy.

As a framework, intersectionality may be meaningfully employed by both top and bottom actors, who naturally would employ different methods (Heaney, 2021). While intersectional activism originates from bottom-up grassroots organizing, the core principles can and should be extrapolated and applied to any method of community organizing (Apostolopoulou, et al., 2021).

Digital mobilization

Digital mobilization refers to collective action catalysed by social interaction on digital forums, often regarding a political issue (Koc-Michalska & Lilleker, 2017). Collective action occurring due to digital mobilization may happen physically rather than digitally – often digital organizing tactics strengthen the coherence and turnout of physical action (Koc-Michalska & Lilleker, 2017; Morgan & Davis III, 2019). Earl and Kimport (2011) characterize digital mobilization as operating similarly to standard mass mobilization, but without the organizational demand of co-presence, due to the flexibility afforded by the internet. Like mass mobilization, digital mobilization may be considered a bottom-up approach if initiated by individuals or groups of individuals (Oyedemi, 2020), or middle-out if initiated by an existing organization
(Finger, 1994).

Social media, digital forums, surveys, videos and digital artefacts are tools which may support organization-led digital mobilization (Shultziner & Goldberg, 2018). If the result is in-person action, a hybrid approach may be appropriate, utilizing traditional mass mobilization methods as well (Koc-Michalska & Lilleker, 2017). Despite the educational and organizational value of digital tools, it has been observed in some contexts that the opportunity for direct digital engagement with political actors may be limited or even non-existent (Koc-Michalska & Lilleker, 2017).

Digital storytelling

Digital storytelling refers to the act of delivering information in the format of a short story through various forms of digital media, such as video audio, and static imagery (Pasupa & Pasupa, 2017; Robin & McNeil, 2019; Rossiter & Garcia, 2010). Pasupa and Pasupa (2017) argue that digital storytelling can play a critical role in influencing behavioural change toward sustainable outcomes, due to the strategy's persuasive capabilities when well-executed. Gubrium and Scott (2010) also explore examples where digital storytelling has been used as a workshop tool, in which participants are empowered to communicate stories from their positionality and worldview. As digital storytelling is typically conducted by actors in any given field (Robin & McNeil, 2019), it can be employed as an effective middle-out approach. Digital storytelling may also be employed as a tool to support broader strategies referred to in this paper.

A virtual CoP

A virtual CoP reflects the traditional community of practice as defined by Lave and Wenger, in that participatory learning among a group with a shared profession is the focus (Lave & Wenger, 1991; Thoma et al., 2018; Wenger & Lave, 1999). Dubé et al. (2005) stress that the structuring characteristics of physical and virtual communities of practice are different, and one looking to deploy these concepts must be aware of the differences. Research before the COVID-19 pandemic indicated that in-person meetings were typically critical to the success of a virtual CoP, as they better facilitate the development of relationships (Hildreth et al., 2000; Dubé et al., 2006). There is still a limited body of literature exploring shifts which have occurred since the COVID-19 pandemic. However, Lehr and Vaughan (2023) found virtual communities of practice to be a critical tool for improving adaptability and resilience in the wake of the COVID-19 pandemic. Fayez et al. (2023) similarly found that a virtual CoP supported teachers to adapt to pressure and uncertainties during the COVID-19 pandemic. Due to the discussed similarities to the traditional CoP, the virtual alternative can also be considered a middle-out approach.

Typical tools which may be employed to support a virtual CoP include video calling, email, digital storytelling and discussion forums or threads (Dubé et al., 2005, 2006). The virtual CoP may often be more fluid than the traditional CoP, due to the nature of digital systems (Li et al., 2009). In-person methods used in a standard CoP may also be employed to supplement digital methods (Dubé et al., 2005). A shared database both for the viewing and recording of information is also critical when operating a virtual CoP (Dubé et al., 2006).

Digital artefacts

Digital artefacts, also commonly referred to as digital objects, have been conceptualized in various and often complex ways throughout the literature (Hron et al., 2022). The clearest definition of a digital artefact is an entity generated by computing practices (Ekbia, 2009), with examples including social media profiles, blogs, webpages and repositories or databases (Ekbia, 2009; Kallinikos et al., 2013). Regarding social change, Mitchell et al. (2017) discuss the value of visual digital artefacts for disseminating knowledge

beyond publications to reach broader communities and support sustained participatory dialogue. As such, visual digital artefacts may facilitate a two-way approach in research scenarios, and examples of such artefacts include digital images, paintings, maps and slideshows (Mitchell et al., 2017; Singh, 2011). A digital artefact can be considered more a tool than a strategy of its own (Ciriello et al., 2019) and therefore may feed into a variety of approaches to stimulate change.

Analysis

Groupings and content analysis

From the literature review, content analysis determined a list of 16 strategies (Table 3). Of these, 10 have been identified which embody middle-out approaches. The positionality of each strategy in terms of top-down, bottom-up and middle-out approaches has been established in the literature review. For the middle-out approaches reviewed, strategies with upstream and downstream influences are differentiated from those with sideways influences (Janda & Parag, 2011; Simpson et al., 2020). It became evident during the literature review that not all the strategies hold the same status, for example digital artefacts are tools (Ciriello et al., 2019) and digital storytelling is a mediatic activity (Gubrium & Scott, 2010), both of which may support broader strategies or practices. Furthermore, intersectional activism is omitted here, as it is more appropriate to apply as a fundamental principle for any method of organizing (Apostolopoulou, et al., 2021).

A CoP is notable for its capacity to influence upstream and downstream, as well as sideways. Some strategies may be characterized as middle-out approaches, dependent on the actors responsible for carrying them out. For example, community capacity building is typically a top-down measure, but a two-way approach empowers middle actors to exert influence from the middle upwards (Varcoe et al., 2011). The game changer may be a middle or top actor, and mass mobilization may manifest as bottom-up action, or middle-out action if driven by an established organization. These variations of strategies offer a greater nuance of middle-out approaches than initially expected, as well as several notable bottom-up and top-down strategies. While different approaches, strategies and tools will naturally suit different actors, causes and contexts, this review provides a base point for future research and the development of more detailed frameworks.

An additional analysis is shown in Table 3, based on Simpson et al. (2020), who categorize the actions of groups based on their function into enabling, mediating or aggregating. Enabling refers to actions which promote the adoption of something, mediating refers to actions which facilitate knowledge sharing, and aggregating refers to the process of knowledge accumulation or development across multiple projects or scenarios (Simpson et al., 2020). Overall, these show limited patterns, as most directions of influence can have the most functions. However, it also shows that aggregating is challenging from the bottom-up approach, just as middle-out approaches are most likely to engage in mediating.

Table 3: Positioning of strategies based on direction of influence.

Direction	Strategy	Enabling/ disabling	Mediating	Aggregating
Bottom-up	Grassroots mass mobilization	•		
	Grassroots digital mobilization	•		
	Community of inquiry		•	
Middle-out: Up/Down	Organization-led mass mobilization	•		
	Organization-led digital mobilization	•		
	Internal disruptors	•		
	Digital storytelling	•	•	
	Community of practice*		•	
	Two-way community capacity building		•	
Middle-out: Sideways	Cross-boundary disruptors	•		
	Community of practice*		•	
	Virtual community of practice		•	
	Seminal game changers			•
Top-down	Endogamous game changers	•		
	One-way community capacity building	•		
	Social entrepreneurship		•	•

Accessibility analysis

Accessibility is still recognised as a considerable issue for digital methods of organizing and mobilization, in that digital activists are more likely to be financially and racially privileged, to speak English and to belong to the middle class or above (Fenton, 2016). When planning entrepreneurial action, it may be more impactful to function as a game changer, but acting successfully as a disruptor may be less complex and more accessible (Alpkan & Gemici, 2016; Westley et al., 2016).

The literature review touched on the rapid development of digital organizing strategies and tools following the COVID-19 pandemic, primarily for virtual communities of practice, which had historically relied on ancillary in-person meetings (Dubé et al., 2006; Hildreth et al., 2000). However, the accessibility of digital community and connectivity practices is likely to continue to shift and improve drastically.

Another aspect of accessibility is physical accessibility, and there is an existing body of evidence of certain groups tending to be more represented in various in-person formats (Bora et al., 2017; Meyer et al., 2021). Such formats might unintentionally privilege able-bodied people in retirement, while lower representation can easily happen for groups with reduced mobility or neuroatypical sensory needs, or those experiencing higher demands on their time, such as parents, and especially single parents. The issues associated with access to digital media should be considered against the historical issues associated with access to events in person. Further innovation is needed in this area to achieve effective and truly inclusive approaches.

VOSviewer analysis

The VOSviewer analysis focused on the frequency and interconnectivity of the keywords in the reviewed articles (Image 1). The most significant cluster is depicted in red and groups key terms relating to the recurring themes of organization, strategy, concept, knowledge, focus on change and mechanisms to

achieve change or even specifically protest as one of the mechanisms, but it also includes innovation as an important aspect. Of the strategies listed amongst this cluster's key terms, the majority can be classified as enabling/disabling strategies, based on the framework presented by Simpson et al. (2020). Moreover, these concepts relate to how to organize and facilitate change. The green cluster focuses on learning, storytelling, philosophy, inquiry and perspective, which explain the importance of shared knowledge and dissemination of that knowledge. The blue cluster contains terms related to the actors of the change such as the organizers, members and social entrepreneurs and their experience and understanding. The yellow and purple clusters are small and appear to deal with a methodology for social change (yellow), impact measurement, social innovation and game changers (purple). Jointly, these clusters describe the key practices which any actors need to engage with in this area.
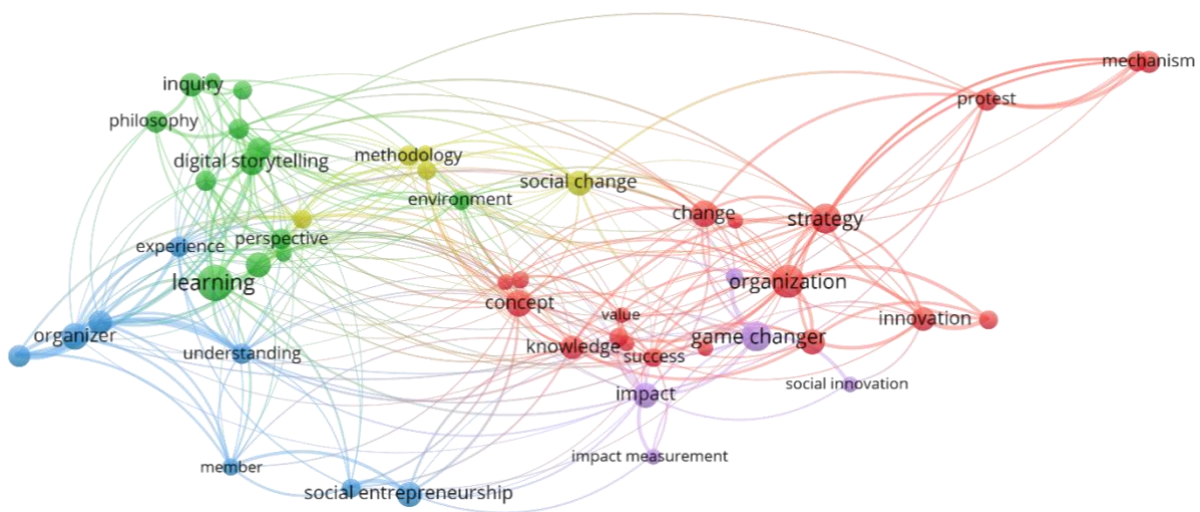
Image 1: VOSviewer keyword clusters and co-occurrence in the reviewed literature.

Discussion

This article situates community organization and connectivity strategies within their historical context from the start of the 20th century. In some ways, efforts to form groups and drive change through those can be seen as an antithesis of Western individualism, which was over the same period starting to exercise global domination (Siedentop, 2014). This collection of the different methods can be useful for scholars in any of the areas interested in fostering and accelerating change but is especially useful within the context of the contemporary understanding of the immediate and urgent need for climate action.

The review considers a range of disciplinary approaches which have helped with localised development, but also indicates a possible lack of connectivity between and across the approaches. There is also similarity in the methods and tools used by diverse groups when pursuing social change. Of these, communities of practice, mass mobilization and, to a lesser extent, communities of inquiry stand out as the most used. Meanwhile, most digital methods can be seen as more recent additions to this body of knowledge.

The content analysis undertaken shows that middle-out approaches might be especially critical for climate action because of the limited capacity for bottom-up approaches to aggregate or even mediate, and because there is a limited capacity to drive all the needed change using top-down approaches. This is where the range of middle-out approaches can be critical for transitions. The example of the introduction of 'transition brokers' in some European countries (Cramer, 2020) signals a recognition of the importance

of supporting middle-level facilitation for change. This shows that even the leading top-down initiatives are starting to recognise the importance of using middle-out strategies to increase the quality of recruitment, engagement and participation of large communities of actors. Such a broad range of participation is necessary for the much-needed acceleration towards climate action.

The VOSviewer analysis summarizes the needed competencies for action to consist of three main dimensions: organizational strategy and mechanisms, shared perspectives and learning and a set of actors with a shared understanding. These key components are complemented by the methodological approaches and impact factors and measurements.

Finally, the accessibility analysis shows mixed trends with the potential for both a decrease and increase in accessibility for organizational activities due to the introduction of digital media. Further research is needed in this area to evaluate these evolving patterns.

Conclusion

The selection of strategies reviewed in this article offers a range of approaches for individuals or groups of individuals wishing to stimulate the acceleration of sustainable transitions within their field of practice. These strategies originate from a range of disciplines. This review has taken an initial step toward establishing a cross-disciplinary repository of community organizing and connectivity strategies for the collective benefit of all disciplines seeking to accelerate sustainable transitional change. The emphasis on middle-out approaches builds upon prior literature, acknowledging the importance of empowering middle actors to influence sustainable transitions through diverse methods instead of relying on the perhaps outdated bottom-up versus top-down dichotomy. Further research in this area may include the application of these principles to specific disciplines, further analyses of the practical requirements of the strategies or the development of detailed deployment frameworks and field guides.

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