International Journal of Design for Social Change, Sustainable Innovation and Entrepreneurship

https://www.designforsocialchange.org/journal/index.php/DISCERN-J

ISSN 2184-6995

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Published online: November 2023

To cite this article:
Parrilli, D. (2023). Building preferred futures for human privacy through service design. *Discern: International Journal of Design for Social Change, Sustainable Innovation and Entrepreneurship*, 4(2), 1-13.

Building preferred futures for human privacy through service design

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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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