The role of the library in a digital age
Designing for public digital culture

Sofía, Strömqvist
Department of Informatics and Media, Uppsala University, sost@student.uu.se

This master's thesis explores the evolving role of libraries in the digital age as a public democratic institution. Employing ethnographic research methodologies, including semi-structured interviews with librarian professionals and a workshop, it uncovers the multifaceted challenges, innovative strategies, and promising opportunities that libraries encounter while navigating the digital landscape dominated by private tech companies. The study identifies challenges in defining libraries' democratic responsibilities, addressing disparities in digital literacy among librarians, and equipping citizens with the necessary digital proficiency to engage critically in today's digital public sphere. However, it also spotlights the potential for libraries to take a proactive role in digital public innovation and curate digital alternatives to counteract the dominance of commercial platforms. Ultimately, this research underscores libraries' societal role at the intersection of technology and democracy in contemporary digital culture. It emphasizes their capacity to promote inclusivity, enhance democratic discourse online, and cultivate alternative public digital spaces. However, it also acknowledges the complexities and obstacles associated with such a transformative journey.

Additional Keywords and Phrases: Ethnographic HCI research • Third paradigm HCI • The digital public sphere • The democratic role of the library

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1. INTRODUCTION

The rapid advancement of digital technologies has formed a new era of connectivity and convenience. However, the digital landscape is not without its challenges, particularly concerning the power imbalances perpetuated by big tech companies owning the services we use daily. With considerable influence over information flows, user data, and public discourse, concerns about their impact on democratic processes and societal well-being have arisen [3,11,26,49]. Responding to these concerns, numerous scholars and initiatives advocate for a shift towards technological development that prioritizes public values, ethics, and a more equitable digital society [11,38,42,47,49–51]. Institutions that serve as pillars of democracy and public engagement are facing challenges in redefining their role within this evolving digital landscape. Libraries, as traditional central hubs of information, have historically upheld democratic values by providing open access to information and thereby fostering an inclusive and literate public discourse. However, the rapid digitization of society and increased access to information puts libraries to new challenges, calling for a reevaluation of their function and purpose in the digital realm [24,29,39,52,53]. This thesis delves into the digital representation of libraries with a focus on their role as public democratic institutions, exploring their engagement with privately owned platforms within our digital ecosystem. Based on insights gained from exploratory interviews together with professionals in the librarian field, it might also contribute as a catalyst for the imagination of alternative pathways aligning with their democratic mission.

1.1. Aim & research questions

The aim of this thesis is to explore the digital representation of libraries within the context of their role as public democratic institutions. By investigating the challenges they encounter and the solutions they employ in adapting to the existing digital landscape dominated by private tech companies, this research seeks to shed light on the library's evolving role in the ongoing digitalization of society. Through an exploratory lens, this study aims to not only uncover the tensions libraries
face in their digitalization efforts but also carry out theoretical exploration of our contemporary digital culture, and the role
the library might play within it. The aim of the thesis will be guided by the following research questions:

- What are the main problems and tensions that libraries, as public institutions, encounter in their aim toward
digitization within the contemporary digital landscape?
- What strategies and solutions are employed by libraries to navigate the challenges presented by the digital
ecosystem, especially considering their democratic mission?

Through an exploration of challenges, strategies, theoretical concepts, and potential alternatives, this thesis aims to reflect
upon the dynamic interplay between libraries, digital technology, and democracy in the digital culture we live in.

1.2. Approach and limitations

The evolution of Human-Computer Interaction (HCI) has witnessed a shift in research paradigms, from an instrumentalist
and cognitive science paradigm to a third emerging socio-technical paradigm [12]. This third paradigm calls for a broader
perspective and research approach that considers societal impacts and cultural dimensions in the creation and use of
technology. In the context of HCI, the philosophical notion of phenomenology encourages researchers to delve into the
subjective aspects of user’s experiences, acknowledging the importance of individual interpretation and the impact of
context. The “phenomenological matrix” is a concept within this paradigm emphasizing such complex relationship,
stretching the focus from the subjective notion of the individual to larger societal impacts. The third paradigm HCI
underscores a range of potentially valid viewpoints, as well as the situatedness in which interactions takes place [12]. Due
to the complexity of the micro as well as macro perspectives within this paradigm, a range of research approaches and
methods are suggested that together contributes to a more holistic understanding.

Moreover, while the first and second paradigms recognized context as non-technological factors affecting technology
use, the third paradigm shifts the focus to how the design instead accommodates the context. Through a qualitative
exploration with librarian professionals, the thesis contributes to the HCI discourse by examining the relationship between
digitization, democratic values, and the library as a public institution. It aligns with the third paradigm's emphasis on
societal impacts and the importance of designing for context, while exploring the challenges and possibilities arising at the
mentioned intersection. It's important to note that the qualitative nature of this study places a restriction on generalizability,
directing its focus towards the depth of informants' experiences and viewpoints. As previously stated, this study takes an
exploratory approach, resulting in a broad scope. The thesis exploration covers a broad set of impacting factors, though
the depth of investigation into these factors remains somewhat limited. However, the outcome in challenges and
opportunities as seen by the librarians within this study could serve as contributions for future work to further challenge
and build upon.

2. BACKGROUND

The following background section will address the dynamics of the public-private divide shaping our digital culture. It will
also discuss existing initiatives aimed at cultivating a digital environment more closely aligned with public values. Lastly,
it will provide insights into the historical and contemporary role of libraries within this evolving context.

2.1. Public vs private digital innovation

The rapid digitization of our societies has relocated many discussions, debates, and social interactions from physical spaces
to digital platforms. This transformation, led by a handful of influential companies, has shifted the dynamics of the public
sphere. In the light of this, concerns have arisen about the concentration of power and the influence exerted by these
companies, particularly in shaping public discourse and democratic engagement [3,11,37,49].

In this context, the algorithms underpinning these platforms often prioritize profit-driven interests that might not
always align with the public good [42,43]. While personalized digital experiences can have positive aspects, the algorithmic
mechanisms within social media also contribute to democratic challenges on a societal level [4,26]. Research in media and
communication studies has examined the power dynamics resulting from major tech corporations' influence. The research underscores the urgency of addressing the power concentration and emphasizes the need for public sector interventions in digital development. The research advocates digital initiatives guided by public values, including transparency, data protection, and democratic governance[3,33]. There is an emerging call for countering initiatives towards the influence of private interests with technology that prioritizes societal well-being[33]. Such countering is also described as desirable to reduce digital reliance and instead increase society’s information resilience [54].

2.2 Prior research and public initiatives

Due to the platforms influences and changed dynamics of the public sphere, public organizations are reevaluating their relevance and strategies. One study underscores how entities such as public service media are adjusting to an environment influenced by privately driven channels[6]. This parallels the challenges faced by libraries in their traditional role as an educational and democratic institution and center for information. Much like public broadcasters, libraries need to reevaluate their role in the evolving digital context. While the roles of public service media, such as news sharing, serves a clear purpose, the notion of library's digital presence is yet to be explored. What role should the library serve in the digital landscape? This question drives the thesis, as it sets out to explore how libraries are handling their societal role and strategies in this ever-changing digital context.

Emerging research is also investigating alternative digital structures, characterized by their arguably more democratic nature, in contrast to the dominance of the privately owned counterparts. Existing structures can broadly fall into two categories: centralized and decentralized. Centralized structures, exemplified by platforms like Facebook, concentrate control and data ownership within a single entity, in this case Meta. In this model, power dynamics are imbalanced, with user integrity often subordinate to profit-driven interests [13]. In contrast, decentralized structures, like the social network Mastodon, are described to empower users by distributing control across multiple servers, known as instances [23,31,45]. If one instance malfunctions, the network continues functioning, also exemplifying its resilient structure. Promising research highlights the potential of decentralized technologies to address issues of data privacy, freedom of speech, and the concerns of fake news on centralized platforms [10,19]. A comparative study between Mastodon and its centralized counterpart Twitter suggests that Mastodon fosters community autonomy and qualitative engagement, rather than focusing solely on scale and numbers [36]. Carl Heath, senior researcher at the Swedish research institute RISE, also emphasizes the potential of digital alternatives:

“A more reasonable order would be if public organizations like a municipality or government agency had their own digital representation, and just like I can visit them in the physical world or get information from them, or participate in activities, this would be possible to do digitally. Sure, I can visit their website. But it's more like a display window. The actual dialogue, conversation, meetings, they take place elsewhere. We should be able to have these meetings without simultaneously having a relationship with a company that acts as a digital intermediary, and takes the opportunity to make money from me by taking a piece of my attention” [45].

The concept of "Digital Commons," exemplified by the open protocols and logic of Mastodon, offers an appealing alternative to centralized and privately owned digital structures[11]. This notion aligns with the ideals of the open-source movement, which advocates for the adoption of transparency, user integrity and a collaborative development. By doing so, it is envisioned to pave the way for a more robust and sustainable digital ecosystem [11,42,45]. Notably, various public entities are increasingly recognizing the potential of these alternative digital spaces. The European Union has embraced Mastodon by establishing its own server to support private, ad-free, and open-source software [48]. The German data protection authority BfDI operates its own Mastodon instance, underscoring the importance of privacy-conscious platforms [55]. Similarly, initiatives launched in the Netherlands and Amsterdam reflect the growing interest by public actors establishing decentralized digital communication channels [56,57].

While potential benefits are acknowledged, it is important to note that research in this area is still in its early stages, and further observations are needed to understand the phenomena of decentralized social networks more
comprehensively [10,19]. It is also emphasized that the realization of democratic potential within software such as Mastodon relies on conscious steering, thoughtful design choices, and effective moderation by individuals [23]. Nevertheless, the significance of public-friendly designs, particularly in the realm of digital communication tools, remains evident. These designed spaces could potentially reduce reliance on the big tech corporations, thereby enhancing societal resilience [54]. Numerous ongoing initiatives echo these aspirations, contributing to the creation of digital environments and tools inspired by public values [25,58–60], the formulation of policies and political recommendations as guiding principles [26,38,47,49,51], and efforts aimed at improving digital literacy among citizens [61,62].

Notably, the national library of the Netherlands has joined the coalition PublicSpaces [58] a collaborative group focusing on digital technologies and public interests, aiming to promote open, transparent, and democratic online spaces. This decision is grounded in the belief that an alternative ecosystems built on such values, align more closely with their guiding principles [44]. This real-world example serves as a connection among the thesis's three main areas of interests: 1. The role of the library in a digital age, 2. The private-public dynamics within the digital public sphere, and 3. The above-mentioned potential of decentralized software and its described democratic characteristics.

2.3 The democratic role of the library: from analog to digital

In Sweden, the Library Act defines the role of libraries as contributing to the development of a democratic society through the dissemination of knowledge and the promotion of citizens' ability to form informed opinions [27]. Historically, libraries fulfilled this mission by providing access to physical books, journals, and other print materials. However, the past few decades have witnessed a transition from manual to highly automated and digital circulation of literature and media. This shift has brought new expectations from both citizens and librarians in terms of navigating the digital information landscape [63]. As per legal requirements, the role of the local libraries in Sweden are tasked with offering knowledge on information technology and its utilization for knowledge gathering [27]. However, the expanded set of responsibilities stemming from these new digital needs of citizens, has prompted discussions about the extent to which public libraries should accommodate diverse citizen needs. Especially given considerations of mandate, competence, and funding to do so [35,63].

The digital transformation presents democratic challenges, including the different learning curves among citizens and ensuring equitable access to necessary technology for digital participation. The DigiDel campaign, initiated in 2013, aimed to encourage citizens to embrace the learning opportunities and increased participation in society offered by the internet. This effort also sought to address the societal digital divide [64].

However, the pursuit of reducing a digital divide has sparked debates about the role libraries should play in actively shaping digital development [9,29]. Past research underscores the shift from a reactive role of providing access to digital tools to a more proactive stance in addressing the impact of digital developments on democracy and citizens [9,29,39]. One argument suggests that libraries should not only offer access to technology but also foster digital algorithmic literacy to aid citizens in navigating new democratic challenges in the digital realm [65]. The interpretation of the library's role and responsibilities in contributing to the "development of a democratic society," as mandated by law, is an ongoing point of discussion.

Recognizing the significance of digital competence in today's information society, Sweden has taken a proactive approach to enhance digital skills among librarians. Initiatives such as Digiteket, a digital learning platform, have been introduced to support this endeavor. The primary goal of this proactive effort is to equip librarians with the evolving digital expertise necessary to effectively meet the digital needs of citizens [66].

As with most services, continuous development is essential to stay aligned with ongoing societal shifts, especially in the digital sphere. In response, libraries are taking a variety of measures to ensure their continued relevance and effectiveness during this transformative period. Drawing from Design Thinking, organizations like UXlibs emphasize user-centric design for innovation, encouraging new services aligned with user needs [63]. Collaborative workshops led by Arup University involve library stakeholders to explore emerging trends and create user scenarios, guiding their development [64]. Furthermore, the pandemic and a need to move services online, also resulted in a discussion on the spatial digital-physical components of the library, and the value to be harnessed within the different spaces [41,67].
Libraries are also utilizing social media in the pursuit of reaching citizens. In Sweden, most libraries maintain a presence on Facebook and Instagram, aiming to extend their reach to a wider audience [68]. Several compelling reasons support the idea of libraries having a strong online presence. Firstly, it describes establishing libraries as trustworthy and reliable sources of accurate information, carrying potential in counteracting the spread of misinformation. Social media facilitates direct interaction with users, transcending physical limitations and encouraging valuable feedback. It also enhances libraries' credibility as providers of digital services, a critical aspect as they expand their digital offerings. Additionally, social media plays an important role in fostering connections within local communities [41]. Given these community-building attributes, a digital social presence can generate substantial value for both libraries and citizens, contributing to the development of a diverse digital society [15,41]. The question remains on how to establish such benefits bearing the democratic challenges in mind.

3. THEORY

3.1. The pseudo public digital sphere

The theoretical framework of this thesis rests on the concept of the public sphere, as originally formulated by sociologist Jürgen Habermas [69]. The public sphere describes a realm where citizens engage in dialogue, exchange viewpoints, and collectively deliberate on societal matters. Historically, this engagement was described to occur in physical spaces like coffeehouses, enabling interactions that extended social boundaries and shaped collective opinions [18]. Habermas's historical description of the ideals of a flourishing public sphere emphasized the importance of inclusive spaces in a functional democracy.

With the rise of social media, cultural sociologist Vincent Miller addresses a transformation from an industrial top-down hierarchy to a more horizontal power dynamic in our post-industrial information society [22]. Initially, this transformation acknowledged the democratic potential of the social digital platforms, portraying them as arenas for enhanced participatory culture within our digital public sphere [14]. As the platforms grew in popularity, media and digital scholar José van Dijk shed light on the vertical power structure within their commercial frameworks, influencing participation dynamics on the platforms [3,33]. This view underscores how dominant players like Meta dictate elements of design and algorithmic mechanisms, shaping user interactions. As mentioned in the background, numerous scholarly voices are questioning the compatibility of the dominating social media platforms with the envisioned democratic potential they initially were described to embody [3,10,13,26,33,38,42,45,49].

Further building onto the contrast between democratic ideals and the digital places we use to socially engage, Christian Fuchs extends Habermas's framework by addressing the concept of a "pseudo public sphere" [11]. This concept seeks to describe the tension between the appearance of open democratic discourse on platforms like Twitter or Facebook and the underlying controlled and commercialized nature of these spaces. Fuchs's view underscores the need to critically examine design and motives, considering how architecture, algorithms, and incentives influence democratic engagement. A view that highly resonates with a third paradigm perspective in HCI. Fuchs also highlights that digital actors in public service, driven by non-profit motives and a commitment to the public interest, could play a critical role in forming democratic digital spaces better aligned with the values as set by Habermas of a vibrant public sphere [11].

It's essential to highlight that the historical portrayal of the public sphere was not without limitations, receiving criticism due to the undeniable barriers of socio-economic factors for participation [21]. These socio-economic barriers persist in today's digital sphere. With its ideals as well as limitations, the theory of the public sphere remains a central concept for understanding the evolving landscape of digital communication and democratic engagement [30].

3.2. Third paradigm HCI: designing for values and culture

Addressing complexities within the third paradigm of HCI requires a toolkit on its own. This section exemplifies several tools and philosophies in design that could be reflected upon in relation to the library's digitalization efforts.

3.2.1. Transferring scenarios: digitalizing the values of public physical space
Moving scenarios across contexts as an ideation method are described to encourage fresh insights and novel designs. By stepping into new territories, designers can harness diverse perspectives, thereby fostering meaningful innovation. A notable example lies in the design method of transferring scenarios [20,34], where existing narratives are moved into new domains, sparking unconventional thinking and shedding light on unexplored opportunities.

An illustrative case of transferring scenarios can be found in the work of NewPublic, an innovative research and design community exploring the notion of digital public space. NewPublic advocates an extension of "user-friendly design" towards a broader perspective of a "public-friendly design" [59]. While traditional user-friendly design prioritizes efficiently meeting individual goals, public-friendly design broadens this scope to encompass collective objectives spanning diverse publics. Guided by principles of openness, inclusivity, involvement, and cooperation, NewPublic strives to inspire the creation of democratic digital public spaces. Building on the design method of transferring scenarios, NewPublic draws inspiration from the physical world where cities feature public parks, squares, and libraries. Transferring the essence of meaning and activity from physical public spaces to explore what such a digital counterpart could look like. This design philosophy draws inspiration from holistic urban design thinking:

“We invite you to join us in building an evolving design framework to move us beyond the necessary critiques of our current online spaces and start thinking like digital urban planners about the spaces we want to inhabit in the future” [50].

The work and exploration of NewPublic could serve as inspiration for public agencies in the formation of their own digital spaces. However, on the notion of “public-friendly design” and the collective goals set within such design projects, it is essential to critically consider the determination of public goals. An ethical consideration of bias and influence is important in all design work, but especially tricky when carrying out value-driven designs for the purpose of supporting democracy. It becomes imperative to ensure that the process of defining collective objectives is transparent, inclusive, and democratic, avoiding the concentration of influence in the hands of a select few. Building on such a critical reflection, it is worth adopting a cautious and critical approach to initiatives like NewPublic, considering their sources of funding, which may include philanthropic and private corporate interests. Aspects which raise valid questions about the viability and potential biases of their role as designers and providers of public digital spaces. A thorough examination of the motivations and influences behind such initiatives is essential to ensure that the resulting digital spaces genuinely serve the public interest.

Participatory design methods could aid in the countering of these challenges. They emphasize the active involvement of citizens as co-shapers and designers. By inviting citizens to participate in the design process, these methods ensure that the collective objectives are more representative of the diverse public's values and needs. This approach not only promotes inclusivity but also mitigates the potential biases that may arise from a more top-down or centralized design process. In this regard, participatory design aligns with the democratic principles ideal for the creation of digital democratic spaces. It could empower citizens to have a voice in the shaping of the digital environments they inhabit, which is also described to foster a sense of ownership and accountability [1,28].

3.2.2. Paucity & allure of design

HCI researcher Paul Dourish's insights about the "paucity" of design shed light on a crucial aspect of how we experience technology today. Rather than simply using individual apps or devices, we now piece together a range of independently designed parts, apps, web services, and interactive devices, to create a complete user experience. This bigger picture often goes beyond what traditional design methods can account for. While each component may be carefully designed, the way they come together creates an overall user experience that's not fully captured by standard design practices. This challenges the idea that design alone can fully handle the intricacies of how we interact with technology. Dourish suggests that we need a broader perspective on these experiences, recognizing that certain aspects might not have been deliberately designed [8].

On a different note, the "allure" of design has important implications for how we understand design's impact on the world. Design thinking, as described by Dourish, often aligns with Silicon Valley's entrepreneurial spirit. It places a strong
focus on individualism and commercial goals, even when applied to projects aimed at serving the public. This approach prioritizes customers and consumption, fitting in with ideologies that emphasize market forces and individual success. Dourish points out that design thinking can sometimes overlook the larger social and political contexts. For researchers in HCI, recognizing the appeal of certain design approaches helps strike a balance between its attractiveness and the risk of ignoring broader socio-political aspects [8]. Understanding the allure of design could lead to a shift from concentrating solely on individual users to addressing design challenges from a societal perspective, further contributing to a third paradigm HCI understanding.

4. METHODOLOGY

4.1. Research approach: ethnography in HCI
In the field of HCI, various of methodologies are used to investigate our interactions with technology and ways in which these interactions can be improved. Notably, ethnographic research in HCI has been criticized if not resulting in immediate design applications [7,12,32]. Some argue that research lacking direct design implications may be seen as less practical, or desirable within the HCI discipline [7]. However, an alternative perspective advocated by HCI researcher Paul Dourish, challenges this notion. He asserts that not all HCI research needs immediate design outcomes. Dourish highlights that studying social dynamics of technology contributes to understanding human behavior and societal impacts [7], aligning with the broader scope of the third paradigm in HCI [12]. This perspective underscores the value of varied research methods in shaping a holistic understanding of human-technology interactions that brings value towards informed design choices in the future. The chosen methodology for this study embraces such an ethnographic approach. This approach encompasses both semi-structured interviews and a workshop, facilitating the aimed exploration of the research objectives of the thesis. The following section will guide through the rationale behind these selected methods, the insights gained, potential limitations, and alternative approaches considered.

4.2. Data gathering methods
To establish context, the study began with secondary desktop research giving a foundation of the research background, and online observations of various libraries' use of social media platforms in Sweden. This initial phase aimed to gain an understanding of existing practices and citizen engagement within commercial digital spaces.

4.2.1. Semi-structure interviews
With the research aimed to generate an overview of the evolving role of libraries in the digital, secondary research and a series of semi-structured interviews were conducted as a starting point. The exploration began by framing core questions using the PACT framework, which delves into People, Activities, Context, and Technologies [2]. To fine-tune the interview questions and ensure their relevance, the first interview served as a pilot study. The interviewee was invited to evaluate the questions, marking the final step before formal data collection. The feedback from this pilot interview, documented in Transcription 1, indicated that the questions were sound and engaging. However, it was noted that the scope of topics covered a broad range. To enhance the ongoing exploration, the feedback given suggested a narrowed focus on specific aspects of the library's role. Building on insights from the pilot interview, discussions with my supervisor, and further inputs from desktop research and online observations, the continued five interviews followed a more refined trajectory. These interviews were structured around three distinct themes:

- **The democratic mission and digital democratic challenges**: Exploring the interplay between the library's democratic mission and the challenges posed by the digital landscape.
- **Social media presence and mission alignment**: Investigating the relationship between the library's mission and its engagement on various social media platforms.
- **Digital literacy to navigate these questions**: Exploring the notion of the digital literacy and skills required to effectively engage with the multifaceted questions surrounding digital democratic challenges.
The initial protocol, still semi-structured in its format, was then refined to cover the above-mentioned themes as its foundation [For refined protocol, see attached file A]. The semi-structured approach provided the necessary flexibility for participants to share their unique perspectives while maintaining a structured framework for the interviews. This format allowed participants to provide interpretations and insights drawn from their experiences. To further enrich the conversations, follow-up questions were also employed to encourage informants to elaborate on their expertise [16].

4.2.2. The future workshop
A digital workshop was hosted towards librarian stakeholders with the aim to further discuss the challenges and opportunities related to the three themes of interest. The workshops consisted of two major parts: starting with giving critique to a presented affinity diagram and then exploring potential areas of opportunity [17]. Participants discussed and criticized the diagram, which served as a visualization of themes found in their interviews, as well as adding problem areas and perspectives they regarded missing. In the second phase of exploring opportunity, participants chose one or more areas in the diagram and brainstormed future scenarios. This was done in a collaborative process using the method of brainwriting [70]. In a full group, thoughts on potential scenarios were presented and discussed. The Future Workshop format was chosen as it allowed for a creative and collaborative environment to explore alternative pathways to identified problem areas. It also allowed for participants to provide feedback and input throughout the process, which was regarded important as they are experts in their domains and experiences. With given consent, the workshop was recorded to document the conversations and insights gained, which provided continued valuable insights on the thesis research objectives. The workshop was facilitated in Miro [For workshop overview, see appendix 10.1].

4.2.3. Participants
Snowball sampling was used to locate librarians who were interested in participating with their perspectives. This method involved finding relevant people for research purposes and asking them to recommend others. Whilst such a sampling can be regarded as biased due to recruitment being done based on personal connection, the suggested informants' professional roles and prior related work was regarded as of great value to the thesis exploratory objectives. A total of six semi-structured interviews were conducted with individuals spanning various roles within the librarian professions, with four of them participating in the subsequent future workshop.

4.2.4. Rationale for method selection and its limitations
The semi-structured interviews facilitated an exploration of librarian professionals' different perspectives, while the future workshop fostered creative ideation collaboratively. This blend of methods allowed for an understanding of both present challenges and potential future pathways. Whilst the chosen methodology provided rich insights, it inherently limited generalizability due to its qualitative nature and focus on informants' experiences. Alternative quantitative methods could have offered broader trends and statistical validations, but these might not have delved into the nuanced contextual factors and underlying motivations as effectively. A more extended ethnographic study also including the voices of the users of the library, would have provided an even deeper understanding on the library’s evolving role and purpose in a digital age. Additionally, including participants from a wider geographical range and a more diverse array of backgrounds could have potentially enriched the findings and conclusions. Moreover, a longer duration for the workshop could have offered further space in navigating the complexities of the research objectives. However, practical constraints necessitated the given time and overall approach. Despite these potential enhancements, the chosen approach captured the essence of the research objective and generated insights contributing to the ongoing conversation on the topic.

4.3. Analysis method

4.3.1. Thematic analysis
A thematic analysis of the data collected from the semi-structured interviews followed the methodological framework established by Virginia Braun and Victoria Clarke [46]. This approach provided a foundation for systematically uncovering insights from qualitative data. The analysis process unfolded across several distinctive phases:

- Initial data familiarization: The data underwent multiple readings to gain a first understanding of its content, leading to the identification of initial themes.
- Code generation: Codes were generated to encapsulate specific segments of data embodying reoccurring themes.
- Code consistency: The codes were explored across the entire dataset to ensure coherence within the emerging themes.
- Reviewing codes: with the visualization of the affinity diagram, broader categories formed the basis for overarching themes.

Acknowledging my background in Human-Computer Interaction (HCI) and Digital Culture, my perspective naturally influenced the coding process. To mitigate potential bias, the methodological framework [46] underscores the significance of a peer review of the codes. The visualization in the form of an affinity diagram depicting the emerged themes served as a foundation in the workshop [5]. This visualization facilitated the evaluation of themes by the librarians themselves, sparking discussions that led to the refinement of some themes and the questioning of others. This participatory approach not only validated the themes but also enriched their depth and relevance through the insights and perspectives of those directly engaged in the research process [For affinity diagram, see appendix 10.2].

4.4. Ethical considerations

The project's ethical approach involved obtaining clear and informed consent from the participating library professionals involved in the qualitative data collection. This step not only demonstrated ethical integrity but also allowed participants to withdraw their contributions if they wished. Open communication ensured that participants understood how their data would be used, stored and anonymized according to their wishes. Anonymity was maintained during data analysis and reporting, protecting the librarians' identities and enabling open expression.

5. RESULTS

In this section, the results of the thematic analysis will be presented, covering overarching themes and their related subthemes. Additionally, areas of opportunity and concerns that have surfaced from the collaborative workshop will be discussed. The thesis will start by examining various perspectives on the role the library should adopt in response to digital democratic challenges. Following that, the themes related to digital literacy within this context will be presented. Finally, the thesis will delve into the mentioned potential opportunities for the library, on the premise that they should take a bigger responsibility on digital democratic matters. As the interviews were conducted and transcribed in swedish, the quotations supporting the identified themes are translated by the author to the best of my ability, aiming to convey the sentiments of the respondents accurately. Moreover, the respondents are anonymized with a number. For full interview transcriptions, see attached files.

5.1. The interpretation of the library's democratic mission in a digital age

The library's role as an enabler for citizens resonated in all interviews. One librarian captures this with, "The library's role is always to be the enabler in society that people need." (R1). This raises the question of what such a need is today. The library's mission is described to be extensive and multifaceted, encompassing various aspects aimed to be accessible and reachable for all citizens. As expressed in one interview, "The library's mission is very comprehensive. It can be made very comprehensive. Each of the different target groups we encounter wants their share of the library. This creates a lot of conflicts." (R1). The range of the library’s democratic responsibility was described as an opinion divider. For some librarians, the library's democratic mission is clear and embedded in its traditional purpose. However, this clarity is not
universal among those in the library sector. The mission outlined in the library law states that public libraries should contribute to the development of a democratic society by facilitating knowledge dissemination and freedom of expression. The second aspect of the mission stresses the promotion of reading and fostering interest in education, research, and culture in general [27]. In the library act, there is one section addressing the responsibility of providing access to and knowledge about information technology, and that responsibility lies at the local library. A clearly stated role, but with a limitation of resources as a mentioned challenge:

“Then there is a law that applies to the local public libraries, which has a specific mission. They should work to increase awareness about how information technology can be used for acquiring knowledge, learning, and participating in cultural activities. Here, it's very clear that the library must be a place where one can go to use technology necessary for accessing information in our society. And in that aspect, the libraries, as an infrastructure, are undersized. We have around 300 public computers in the city of Stockholm, with a population of nearly 1 million.” (R1).

Despite the clear purpose of the local library, the broad guideline as set by the library act, results in an experienced vagueness that leaves room for interpretation and varying viewpoints (R1). As one participant observes, "I find the library law a bit vague, in the sense that libraries should exist and engage according to law and guidelines, and then you have to ponder what that actually means." (R2). A vagueness also described as following: “This means that when the clause and when the law, the Library Act, don't become more specific than that, then it becomes very open to interpretation. There, libraries sometimes risk taking on a larger mission than perhaps intended.” (R1).

5.1.1. The current pragmatic scenario
Being the enabler in society has in the physical space meant accommodating citizens with access to information such as books, but also printers and computers to access digital information. With the evolving democratic needs in society comes the challenges of balancing the maintenance of the libraries established role and reinterpreting the mission towards evolving needs of citizens. There is also the described balance of their digital presence on social media to reach people with their activities, while staying true to their democratic principles. Such a balance formed a theme of a described current pragmatic approach when navigating the dilemmas of limiting resources, as well as entering the social digital world while remaining true to their democratic purpose.

5.1.1.1. Limited resources: prioritizing fundamental democratic needs
One participant described how the library is currently performing “a digital first aid”, offering essential services to a digitally diverse population (R4). As one of society’s open spaces, libraries are described by the interviewees to embody a trusted institution who facilitates access to information and internet. "The library has become a digital first aid, a place where people can warm up, read newspapers, or use the internet." (R4). This role is described as important regarding reducing the gaps in society, digital as well as social. It was also described to be the only place that offers such a service on a societal level, which further stresses the importance of foremost considering the fundamental needs by acting as a “digital first aid”. So, whilst wanting to climb up the knowledge latter of digital literacy, addressing more complex digital democratic issues, it was stressed that their current responsibility of foremost accommodating the fundamental democratic needs, is a priority. While it was ideal to consider both ends of the latter of digital complexity, the basic needs as well as the more complex issues, a limitation of resources as well as the different interpretation of the library role was described as a barrier for moving up on that latter.

5.1.1.2. Navigating social media: a necessary paradox
On the theme of a pragmatic approach, a described paradox emerges in the library’s engagement on social media. TikTok, a platform known for its information-sharing ties to authorities, was on one hand described to be desirable from the standpoint of reaching a young audience. This resonates with one aspect of the library mission, in promoting reading towards a larger audience. Yet, this enthusiasm collides with the mission to promote media and information literacy while
at the same time safeguarding user data. A tension arises between harnessing the reach of platforms like Facebook and Instagram and the ethical dilemmas inherent in doing so. This tension was described as: "TikTok has been an information source for foreign authorities. As a library you shouldn't be there." (R6), while at the same time it is also described and emphasized that "we need to be where the people are" (R1).

5.1.2. The ideal scenario: a bigger digital democratic responsibility
The theme of a bigger democratic digital responsibility resonates deeply among the interviewees, emphasizing the library's role as an enabler within society. Rooted in the values of access and information equity, all participants agreed on the importance of exploring their role and responsibility in the digital sphere, particularly within the realms of commercial streaming sites and social media. This was described by one informant as “It's not about reading: it's about information and citizens' access to information. It's undoubtedly a mission for libraries." (R2). While the dynamics of the public sphere evolves with the development of digital technologies, the identification of areas of responsibility for the library is not described as the issue. The problems lie in the strategies, as well as the limited resources in addressing these new dynamics: “It's easy to understand what the library's mission "is," somewhat simplified. It's harder to see "how" to proceed. What does it mean when a huge number of citizens subscribe to commercial streaming services? How does it impact the library's mission, and if so, how?" (R2).

5.1.2.1. If not the library, then who?
A common theme in the interviews is the notion that the library is described as a credible public actor and carries potential in addressing the democratic issues within our digital sphere. One librarian states: “digital complex questions are rising quite rapidly. But if libraries don't assume the responsibility, both as advocates for democratic societies and as experts in information, then who will lead these discussions and be responsible for them?" (R3). Another perspective raised is the increased volume of information in today’s public sphere, and the occurrence of disinformation. A phenomenon underscoring the need and purpose of the library's role, and librarian profession as experts in information navigation. The library's unique position as a trusted institution and information expertise is described to give credibility in a taken responsibility to foster a critical digital approach. Another participant emphasizes, “It’s never been generated as much information as now, and people are lost in this. They are seeking help from institutions that can assist them. This is a very clear task. Because if we don't do it, then other interests will. Either it's controlled by algorithms or driven by commercial interests. Then it becomes something different from being a part of the public domain." (R1). The significance of the library's mission in a democratic society is emphasized, with a shared concern on what an absence of such a role means for democracy in a digital sphere highly influenced by other interests.

5.2. Digital literacy among librarians
This theme delves into the significance of digital literacy for library staff. It highlights how our digital society places fresh demands on the knowledge expected from librarians, as well as the conditions and structures for acquiring digital competences.

5.2.1. Low common (digital) understanding
The interviews underscore disparities in knowledge levels among on-site librarians regarding complex concepts such as open data and privacy issues within the digital sphere. One participant mentions, "Yes, it would have been a wish from my side for increased interest and knowledge on open-source technology and issues of user integrity. Unfortunately, the current common knowledge in this area is very low" (R4). This varying awareness among librarians on these issues emphasizes the need for a broader understanding across the organization. Another interviewee reflects, "We also have quite a few employees who are really good at other things. Who were employed to work as a librarian in a time when these questions, were not as prominent. Leaving the feeling of I'm quite uncertain about how digital tools work. I'm happy to leave those questions to someone else." (R2).
5.2.2. Integration of digital competence into job descriptions: general vs special knowledge

The above theme also sparked a conversation on the potential need to integrate digital skills into librarians' formal responsibilities. However, the different conditions for skill enhancement, influenced by factors like the size of the library and its resources, was raised as determining in the realization of such goal. On this topic, interviewees discussed the balance between being a digital generalist and specialist. The role of a librarian as a generalist is acknowledged as important given the growing digital concerns, but challenges arise due to libraries diverse set of tasks and responsibilities. As one interviewee puts it "I also believe that, based on both the number of employees we have and the various tasks we have, it's difficult for everyone to be generalists on all questions." (R2).

Another respondent stated the strengths of the librarian’s educational background in information flows with the following “librarians are experts in the information and media landscape. Their education and work are focused on understanding information flows and the social logic behind them. They also, in relation to other disciplines, have a more humanistic view of these questions. It's a part of their competence. I would say that libraries have a unique position compared to other institutions. Therefore, libraries could definitely work more on informing and discussing these questions. “(R3).

5.2.3. Expectations and support from structures and organization

The lack of clear expectations regarding the digital skills required of librarians was also described to create uncertainty about the necessary level of digital proficiency at the workplace. The importance of supporting structures and organization in providing guidelines and expectations is emphasized. One interviewee remarks, "The municipalities have different approaches. Some allocate time for further education or reading, others organize study circles or provide materials and other forms of professional development. But just like in the world of education, managers and the library director must lead as role models and create conditions for a learning organization."(R4). Challenges were described on the organizational level, including uncertainty arising from inadequate structures and initiatives for librarians' digital learning journeys. This uncertainty affects the perception of librarians' roles in the digital landscape, leading to an expressed need for clearer guidance and purpose.

5.2.4. Individual responsibility for digital skill development

Tightly connected to the above subtheme, was also the frequently mentioned individual responsibility for acquiring digital skills. While learning materials exist, such as for example Digiteket, it largely falls on individuals' curiosity and efforts to explore such materials. The absence of explicit directives on required proficiencies was described to not give enough incentives to learn. Structured approaches to skill development are highlighted as essential. One participant notes "some employees are much better at developing their own skills when they need to learn something than other employees are” (R2).

Collectively, these subthemes underscore the shifting dynamics within modern libraries as they navigate the digital age. Challenges at the organizational level, the integration of digital skills, individual responsibility for learning, and the balance between specialized and generalized knowledge are all aspects describing a transformative time. A transformative time including the evolving expectation on what digital knowledge the librarian should possess.

5.3. Educational efforts towards citizens

The theme of educational efforts towards citizens addresses the challenges of the digital knowledge latter with its many different steps, and which steps the library should be able to address in accommodating citizens.

5.3.1. Current situation: giving access and basic digital knowledge

Access to technology and baseline knowledge were described as crucial factors in the library’s current role in aiding citizens in the digital landscape. As one participant notes, "at the core of this, you are supposed to bridge the digital divide for those who haven't grown up with the internet. We have a digital everyday life today, with banking transactions, etc. These people are excluded from society. In many libraries, simpler forms of technical support or lectures have been utilized.
for this purpose.” (R6) Availability of computers and related resources, alongside understanding essential digital services like bank IDs, is described as a fundamental service regarding library’s digital aid towards citizens.

5.3.2. Accommodating the varied levels of digital needs
All interviews underscore the need to address diverse levels of digital literacy, ranging from basic skills to more advanced knowledge. Whilst targeting the lower steps on the knowledge latter as a metaphor, it was raised as important to climb the stairs and aid citizens on the more complex digital areas as well. As one interviewee reflects, "We have different steps on the staircase, and we must consider where citizens are and where they should be. Must we demand that they know everything? Or are there certain fundamental skills that we should promote?” (R4). Efforts are currently focused on fundamental steps, like utilizing bank IDs and the "Digidel campaign" targeting the core issues of the digital divide. However, a critical question arises within multiple interviews: how can learning be facilitated for the more complex stages of digital proficiency? This theme is highly connected to the theme of an ideal bigger democratic responsibility regarding the more complex digital aspects concerning citizens but lacking the resources and time to do so. These barriers result in a pragmatic approach, trying to balance what is possible given resources, with their mission and democratic principles.

5.3.3. Collaborative efforts to foster digital literacy
Constraints of resources was raised in the interviews as a barrier towards what’s possible. Therefore, the importance of collaborative efforts to enhance citizens' digital literacy, was emphasized. As one interviewee highlights, "we don't have the resources to do it entirely on our own. Instead, we collaborate, for example, with IT trainers we get from the employment agency. We collaborate with civil society on various educational activities. We develop materials that we can distribute to the people we meet (R1)." This cooperative approach emphasizes the need to work together with broader societal stakeholders. The Swedish Media Council (MIK; Statens Medieråd), a government agency in Sweden was also raised to provide a good toolkit of perspectives to consider, in which learning materials to citizens could derive from (R6). On the topic of collaboration with other societal and educational stakeholders, the purpose of the library was again highlighted as an interpretation point given other existing educational instances in society.

5.3.4. Motivational challenge in learning complex digital issues
If the library were to climb up towards addressing the more complex digital issues on the knowledge latter, a motivational challenge was addressed. As one interviewee observes, “In school, students are there out of obligation, and we stand in front of them, conducting lectures. But when it comes to citizens, the situation is different. There, we must attract and persuade them to engage with our knowledge. Most people are not particularly eager to learn new things, as it can be demanding and time-consuming.” (R4). The digital complexities were described as a metaphorically speaking “digital broccoli” (R4), described as being less fun or inspiring to chew. Especially in comparison to the, with the continued metaphor of foods, more sugarcoated dynamics that is steering our attention elsewhere in the social digital landscape (R4).

5.4. Areas of opportunity
On the premise that the library indeed should take a bigger responsibility regarding digital democratic issues of today, several paths of doing so were explored and discussed. The following themes are both the results of ideas arising in the individual interviews, as well as ideas, and their concerns, explored during the workshop.

5.4.1. Opportunity 1: exploring the concept of establishing their own digital presence
The interviews highlight the importance of libraries engaging digitally with users, particularly the younger generation, across various social platforms. However, this engagement raises, once again, the dilemma of the tension between promoting commercial platforms with the concerns of their data collection and surveillance, and the library's commitment to public principles. This tension prompted consideration of constructing independent, self-owned digital spaces that align with democratic values: "We need to be there to reach users, especially children and young people, on various social
platforms. But looking at the current digital landscape, we need to strike a balance. Should we drive traffic to commercial platforms? Or should we have the courage to build our own?” (R5).

In contemplating the creation of their own digital presence, the metaphor of "digital broccoli" resurfaced. To succeed with an independent digital presence, an alternative platform would need to make user integrity and more public-friendly digital spaces online a legitimate and appealing alternative to the centralized platforms described as "candy." A respondent stated, "we must create something so appealing that users are willing to leave familiar platforms for something better, for us." (R3). A sentiment followed up by another respondent with the challenge of "encouraging someone to eat broccoli when they prefer candy." (R4).

Recognizing the potential of establishing an independent digital space for interacting with citizens, respondents acknowledged that defining the purpose and navigating this uncharted territory would require thoughtful consideration and perhaps a redefinition of the library's digital mission. Instead of starting from scratch, the idea of establishing a presence on existing platforms that better align with their values was suggested: "creating alternative channels to existing social media is a challenge, and it's an alternative path to explore. Creating an entirely new platform might be difficult, but maybe we can link to alternative solutions.” (R3).

5.4.2. Opportunity 2: offering a decentralized alternative
As potential alternatives to suggest, decentralized social networks came to be one point of discussion. As traditional social media face increased criticism, the decentralization of digital spaces gains traction: "we're already seeing a shift, especially with problematic institutions like Facebook and Twitter. It might be a sort of paradigm shift." (R6). A notion that decentralized platforms carries democratic potential was underscored. However, they were also raised to come with a multitude of challenges. Being on several platforms would result in a duplicate of work. The undefined purpose of such presence was another issue needing more consideration. Moderation challenges being a third concern. Offering a decentralized alternative was regarded as an opportunity as well as challenges that connects back to the core question of what role and purpose the library should have in today’s digital time, and space.

Showcasing a presence on a decentralized platform like Mastodon, alongside mainstream options, was described to also aid citizens' digital learning journeys and inspire exploration of diverse alternatives: "when someone comes to learn about social media, we can say, for example: 'there are well-known social media platforms, but there are also these lesser known but well-functioning and often safer alternatives." (R5). Moreover, a presence on Mastodon, was also described to aid in the normalization of such alternatives (R3). Establishing a presence on a decentralized platform could thereby be motivated by the purpose of showcasing the diverse set of alternatives regarding social digital spaces, contributing to the notion of a pluralistic media landscape. This was something that resonated amongst the participants during the workshop, as it aligns with the library’s democratic mission.

5.4.3. Opportunity 3: a learning-circle
Another idea from the workshop was the exploration of digital phenomena through learning circles facilitated by the library for citizens. This concept, like modern book clubs, proposes an experience where participants explore and discuss digital platforms. Within this concept, the exploration of a diverse set of platforms and their dynamics was proposed to be explored and reflected upon within the circle. Participants would venture into platforms like Twitter and TikTok on designated days and later gather to collectively reflect on their experiences, sharing insights on the structures of the platforms. Central to this idea is the librarian as a digital guide, facilitating access to information on perspectives to bear in mind while navigating the digital landscape. In this scenario, the librarian was described to embody a democratic algorithm, aiding critical thinking and diverse exploration. However, the concept also came with concerns. Similar educational initiatives by other organizations already exist, again leading to the questions of which role and the library should have regarding evolving digital challenges. The motivational learning barrier (as addressed in the theme of digital literacy for citizens) was also addressed: “why would people show up?”, as well as resource allocation and which level of digital complexity that should be set within the concept.
5.4.4. Opportunity 4: illustrate digital interactions in physical space: an educational experience

The workshop also yielded an artistic as well as educational idea: to visually represent digital interactions in the library’s physical space. An installation that would offer insights into online dynamics and their differences from physical spaces. The concept involves mapping online platforms like Facebook and Signal to corresponding library areas. For example, Facebook’s reach was described to be symbolized by a speakerphone at the entrance, while Signal’s privacy might be depicted by sitting with headsets in a private corner. An intriguing twist was the demonstration of transforming online discussions into live performances. These performances would bring digital discourse to life, showcasing the current invisible design mechanisms online that forms interaction. Although promising, challenges include execution and integration within the library’s setup. Yet, the concept was described to hold potential in bridging understanding of our digital and physical worlds, providing a unique educational journey for library visitors.

6. DISCUSSION

The exploration of the library’s democratic role in a digital age, resulted in a broad range of relevant themes addressing different perspectives, challenges as well as opportunities. The following discussion will first address the fundamental challenges addressed among the respondents. It will be followed by a discussion on mentioned opportunities, standing on a premise that the library should take a bigger democratic responsibility. These opportunities will be reflected upon in relation to the thesis theoretical framework and design philosophies.

6.1. Overarching challenges

6.1.1. Divided view on democratic responsibility

As seen in the many subthemes related to the discussion of the democratic role of the library in a digital age, the library is facing challenges in redefining their role towards emerging democratic challenges. Their multifaceted mission, outlined in the library law, faces interpretation challenges. Interpretation challenges also relating to an expressed limitation of resources. A balance is addressed between traditional duties and new digital demands calling for a bigger responsibility. In their current role, the library is described as “digital first aid”, bridging digital gaps. However, navigating social media presents dilemmas in maintaining and staying true to their ethics and democratic principles. The ideal scenario envisions libraries embracing an expanded digital democratic responsibility, proactively working on societal digital and democratic development. Yet limited resources and unclear strategies pose obstacles. Resolving the uncertainty surrounding libraries’ digital roles can be regarded as a first step for new interventions to be designed upon. By defining their stance regarding digital democratic issues and being given the resources to further accommodate such issues, libraries could act as public hubs for digital opportunities and potentially be a space that fosters public innovation serving citizens.

6.1.2. Digital literacy among librarians

On the theme of digital literacy among librarians, another set of fundamental challenges emerge. Disparities in understanding complex digital concepts underscore the need for reevaluating the expectation of the digital knowledge the librarian should possess. Individual responsibility for skill development, reliant on personal curiosity and motivation, is described to lack incentives due to the absence of explicit directives. An uncertainty relating to the main challenge raised in above section, the uncertainty of responsibility. Which role and competence should the library provide regarding democratic digital challenges? A defined responsibility on which role the library should take, could foster clearer guidelines, expectations and incentives within this category of challenges as well.

6.1.3. Educational efforts for citizens

The challenges related to educating citizens about digital literacy involve a range of factors. Initially, the library served as a societal service in reducing a digital divide, by ensuring access to technology and basic digital knowledge for all citizens. However, in addressing more complex digital matters, a multitude of considerations was described as barriers for such a responsibility. A consideration of various levels of digital skills, tailored approaches to ensure equity for all, as well as the motivational barrier of learning new things. Currently, the library uses collaborative effort to overcome certain barriers.
Libraries collaborate with partners, including IT trainers and community groups, to enhance citizens' digital literacy, drawing insights from sources like the Swedish Media Council. In this context, the metaphor of "digital broccoli" comes into play, representing the challenge of motivating citizens to engage with complex digital topics. Altogether, these challenges create a complex landscape for improving citizens' digital literacy. Finding ways to manage resource constraints, catering to diverse skill levels, fostering collaboration, and overcoming the "digital broccoli" challenge are key aspects of this pursuit. Addressing these challenges again necessitates defining the library's, also in relation to other societal stakeholders, responsibility in this area.

6.2. Opportunities to explore

6.2.1. Transferring scenarios: digital-physical spaces and their dynamics

Within the interviews, the library has been described as a symbol of openness, inclusivity, and democratic ideals within the public sphere. These values resonate deeply with the growing demands for democratic principles within our digital ecosystem [11,33,42,45]. The exploratory path of creating an independent digital public platform for the library was mentioned as an interesting, yet a highly challenging opportunity by the librarians. Whilst such an initiative was motivated by the ideals of offering an alternative to the dominating privately driven platforms, it was described as a difficult task given the unclear purpose for such a digital space. In the physical space the role of the library in relation to its democratic mission gets clear by the physical access to books, technology and library staff aiding in the navigating of the diverse set of information sources. What a digital resemblance of such purpose and function would be remains to be explored. This is a path that could be further examined by using the method of transferring scenarios and activities from a physical space, into a digital format [20,40]. Moreover, given the digital democratic challenges today, one could ask if there’s additional activities or responsibilities the library, as a democratic public institution, could be a relevant candidate for.

The concept of transferring scenarios is not limited to creating digital spaces; it can also be applied in reverse. A compelling idea emerged during the workshop: visually representing digital dynamics in the physical space of the library. This innovative approach was described to offer an educational experience to library visitors by showcasing the often-invisible structures that shape online interactions. By utilizing transferring scenarios as a method and aiming to enhance digital literacy among citizens, a physical demonstration of algorithmic logic could ignite conversations about the underlying structures that, by design, shape our public discourse and interactions in the digital sphere. This approach not only underscores the democratic value of transparency but also highlights the significance of understanding the forces that mold our online interactions.

A vision that in addition to the librarians of the study, also gets supported by prior work underscoring that the library should work with algorithmic literacy towards citizens, as it is part of understanding todays digital information landscape [24,39]. The idea brings attention to the affordances and limitations of digital interactions, which may be more visibly apparent in the physical realm, thus shedding light on restrictions that are less observable in the digital domain. Demonstration of these dynamics in a physical setting could serve as both an educational and inspirational experience. It carries potential in relation to the challenge of the "Digital broccoli", being mentioned as a motivation barrier of learning, potentially making the complexities of the digital world more approachable and engaging for a broader audience.

6.2.2. Navigating complexity: designing for everyone

Accommodating the diverse needs and expectations of citizens within the library, a space open to all, emerges as a recurring concern among the interviewed librarians. This challenge underscores the necessity for a holistic design approach that embraces a wide spectrum of user requirements, emphasizing true inclusivity. The journey toward achieving this goal calls for a nuanced understanding of both the allure and paucity inherent in existing design practices, in alignment with the principles of the third paradigm in Human-Computer Interaction (HCI). The phenomenological matrix addresses this complexity, as it requires designers to constantly zoom in and out between the individual subjective experiences of citizens and the larger cultural implications of their design choices[12].

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Given the complex nature of this design landscape, the concept of creating a universal, independent digital platform is likely to fall short in addressing the varying needs and interests of citizens. Instead, a focus on pluralism was discussed, with the purpose of offering alternatives to traditional social media platforms, thereby showcasing and normalizing a multitude of digital options for citizens. By providing a diverse range of online spaces within the library's digital representation, citizens could become more aware about their options and make more informed decisions about the digital spaces they wish to engage with.

One could ask if the library should work on creating their own independent digital space, or if their role should be more central to educate and inform citizens about the range of digital environments already available to them? Perhaps such goals could function in parallel, with both establishing a presence on alternative digital platforms, such as Mastodon, and alongside providing a guide for how citizens could explore such platforms tailored to their interests. Inspired by participatory design philosophies, libraries could empower citizens with the tools and knowledge needed to explore, create and shape their own public digital spaces. In relation to the ethical complexity of determining public collective goals, these would be formed by citizens themselves. Rather than imposing top-down approaches, libraries could serve as a support system for grassroots movements, enabling citizens to actively shape their own digital objectives, aligning with principles of supporting public participation and inclusivity.

6.2.3. Offering alternatives: countering the pseudo-public sphere

By considering and providing a broader overview of existing digital alternatives, libraries would also be mindful of Dourish concept of the paucity of specific designs and platforms [8]. Offering alternatives carries potential in extending citizens vision of spaces in our digital sphere, nurturing a more diverse digital culture. Libraries, in this context, would function as curators of alternative sources, contributing to a broader overview of the various digital platforms that exists for information exchange and public engagement. This approach was something the librarians agreed on aligning with the values and purpose of the library.

Insights from this thesis exploration suggest that public institutions, such as libraries, possess the potential to infuse our digital culture with democratic ideals. As mentioned, these institutions could introduce alternative digital spaces within their digital representations for citizens. While these spaces may not experience immediate user adoption, they hold the potential to normalize diverse online environments. A raised awareness of digital alternatives carries the potential to spark further exploration by citizens themselves to create, shape, and join a variety of digital spaces. This citizen-led exploration, if it gains momentum, has the potential to challenge the dynamics of the "pseudo public sphere" perpetuated by commercial platforms. An exploration challenging the current status quo as envisioned by Fuchs[11]. By contributing to the normalization of digital alternatives that better align with public values, libraries could play a transformative role in contributing to the rebalancing of power dynamics of the digital public sphere. However, it is essential to acknowledge that while libraries hold potential as agents of change in shaping a more democratic and diverse digital culture, the path towards such vision carries challenges demanding careful considerations.

Adding another layer of complexity, the ideal of a vibrant public sphere must also be viewed through the lens of its historical limitations in physical space, which persist in today's digital context. Socio-economic barriers to participation continue to challenge the realization of democratic ideals in digital spaces. This underscores the importance of a multifaceted design and non-excluding research approach, extending the scope, time and range of the thesis. However, by nurturing alternative spaces, playing an active role in fostering societal digital literacy, and being guided by democratic values, libraries could act as facilitators for a more inclusive and diverse society even within the digital era. This demands a bigger democratic responsibility and effort but carry the potential to enrich our democratic social fabric within society. Moreover, it could also contribute to a more societal robust and resilient digital future with a reduced reliance on privately owned and centralized platforms.
7. CONCLUSION
This study has delved into the complex interplay between libraries, digital technology, and democracy within our contemporary digital culture. The exploration of the libraries role in the digital age has revealed a landscape marked by both challenges and potential opportunities. One of the central challenges revolves around the uncertainty surrounding the role of libraries in the digital era. This uncertainty raises essential questions about how libraries should adapt and redefine their purpose to effectively address the demands and democratic dynamics of this new age. Moreover, the varying levels of digital literacy among librarians underscore the need to address this uncertainty proactively. Educating citizens about digital phenomena, which can be seen as essential knowledge for meaningful democratic participation in the digital sphere, adds another layer of complexity. From the fundamental service of bridging the digital divide by providing access to technology, to an emerging need to address more complex digital democratic issues, raises the question on how the library should accommodate citizens today.

Amidst these fundamental challenges, visions of ideals as well as opportunities emerges, perspectives that envisions libraries as drivers and contributors of a digital culture further influenced by democratic values. By assuming a larger democratic responsibility, libraries could aid citizens through the more complex issues of the digital realm. This envisioned path goes beyond their traditional role and the expressed barrier of limiting resources. It speaks of a future of information equity, a nurturing of critical digital literacy, and an increased role in contributing to a more robust democratic discourse online. Such vision is supported by the ideas of establishing alternative public digital spaces that could act as countering influences in a digital culture dominated by big tech companies. It is supported by a discussion of facilitating digital learning circles, in which the librarian guides citizens in this new landscape of information exchange. It sparks artistic creativity, imagining art installations showcasing digital dynamics in the libraries physical space, further bridging the gap between our physical and digital worlds. It speaks of a proactive approach in exploring a presence in emerging decentralized social networks, offered as an alternative alongside the use of Facebook.

The pursuit of such visions is undoubtedly an investment with major challenges, one that demands time, effort, and a reimagining of the traditional library role. However, as libraries stand at the crossroads of technology and democracy, this investment carries the potential of nurturing a digital culture aligned with public values. It is a call, amongst others [11,38,42,47,49–51] to aid in reshaping and enriching the digital landscape, in transitioning from the pitfalls of the so-called “pseudo public sphere” as described by Christian Fuchs [11]. It speaks of an embracement of the opportunity to craft a more inclusive, democratic as well as resilient online world.

8. FUTURE WORK
Given the exploratory and broad research objectives of the thesis, several areas have emerged for further exploration and design work. Foremost, a similar exploratory objective could be done framing perspectives of citizens, regarding their perception of the role of the library in our digital society. Another path could be to engage in Research Through Design (RTD) methodologies to develop and prototype specific digital scenarios tailored to the needs of both libraries and their diverse set of users. Another direction could be to further address the raised challenges of varying digital literacy among library staff. Future efforts could focus on developing structured programs to enhance digital knowledge and skills among librarians, or further explore the general vs special digital competences needed. A continued focus could also be to further examine the values within the physical-digital spaces of the library, further understanding the values that should be transferred over from the physical to the digital realm, ensuring that the library continues to serve as a pillar of the community in both formats.
9. REFERENCES


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10. APPENDIX

10.1. Overview of workshop structure
10.2. Affinity diagram

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