Design Science

Designing foresights by communities: a new groundbreaker role for strategic design

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Abstract

In order to humanize forecasting, communities have been proposed to activate and enlarge a collective ability of foresight. To better understand how communities relate to collective foresight abilities, this article untangles its critical modes, roles and social media involved. Based on a fine-grained analysis of 10 community practices, we uncovered the abilities of capturing, conceiving and designing foresights enacted in the distinct modes of creative, user and strategic communities. Discoveries included the novel abilities of conceiving foresights, a new groundbreaker role for strategic designers and specific activities of social media listening with regard to future interests. Grounded on the prime findings, we propose a framework with propositions that shape further theory development on community abilities of designing foresights. Further research directions are outlined.

Keywords: Community, Foresight, Strategic design, Role, Social media Ability

1. Introduction

There has been a rise in artificial intelligence systems that enable prediction and forecasting using data. Yet, there is a growing need to consider the sensitivity to people's preferences and embrace the unexpected and unpredictability of humans and society (Chia 2009; Nonaka & Takeuchi 2021). In this article, we consider community foresight as the collective ability of shaping foresights and how community members collectively design and contemplate on future courses of action. Communities co-creating foresights and future world building, such as future labs and platforms for trend watching, have been formed to try and shape foresights. Yet, how such communities activate and enlarge collective foresight abilities is relatively under-researched and lacks a comprehensive framework. This article unpacks these abilities of designing foresights with community practices and a particular role of strategic design. It undertakes a fine-grained analysis of real-world practices and conducts semi-structured interviews with people from 10 communities. We uncover that such communities have not only captured foresights but more importantly also sought how to generate new foresights. This article draws on the literature at the interplay of strategy and design. It builds further on the studies that have conceptualized collective foresight abilities of

organizations (Chia 2009; Tsoukas & Shepherd 2004; Whithead 1967), to which we aim to contribute with a better understanding of the community abilities of designing foresights and its critical modes. Alongside, we aim to advance the line of inquiry on the emerging area of strategic design, the area in which strategic designers influence decisions through design practices of value co-creation, by taking an organizational viewpoint towards meaningful future outcomes (e.g., Manzini & Vezzoli 2003; Ehn, Nilsson, & Topgaard 2014). By unravelling the community practices of designing foresights, characterizing the roles and collective abilities, and thereby establishing a grounded model, this article makes a novel contribution to these lines of inquiry. We developed three new constructs that articulate the creative nature of designing foresights within and across communities: (1) Community-conceived foresight – creative abilities of imagining new signals of the future and proactively generating foresights; (2) Community-enacted role of new groundbreaker in collective strategizing on future directions; and (3) Social media listening on future interests. The induced knowledge contribution shifts the understanding of foresight abilities from mainstream strategy in organization entities towards designing foresights in community entities and extends the emerging line of inquiry on strategic design.

In the next sections, we first elaborate on the theoretical background and the employed method of qualitative inductive research, and then present the results. In the final section of the discussion, we provide a framework with an associated set of propositions, and an outline of research avenues.

2. Theoretical background

For the theoretical foundation of this article, we reviewed the existing literature at the interplay of design and strategy, and categorized three lines of inquiry that we consider important in designing foresights by communities. As we describe next, these lines are as follows: foresight ability, role of strategic design and (online) community practices.

2.1 Collective foresight ability

Foresight is described by Tsoukas and Sheppard (Tsoukas & Shepherd 2004) as "the organization's ability to cope with the future – the institutionalized capacity of unobtrusively responding to an organization's circumstances so that the organization may get around in the world" (p. 138). Chia (2009) emphasized that this ability involves a human sensitivity for detecting and disclosing invisible, inarticulate or unconscious motives and aspirations in society and the shaping of desirable futures. Both papers rely on Whitehead's elementary definition: "Foresight marks the ability to see through the apparent confusion, to spot developments before they become trends, to see patterns before they fully emerge, and to grasp the relevant features of social currents that are likely to shape the direction of future events" (Whithead, 1967; p. 120). Although this definition had been mainly focused on an individual ability both Tsoukas and Sheppard (Tsoukas & Shepherd 2004; p. 138) and Chia (2005; p. 21) extended the foresight ability to the collective entity of an organization and concentrated on the cultivation of it as a socially embedded competence. Against this background we extend this construct one step further, towards the collective entity of a community. We consider community foresight as

the collective ability of shaping foresights and how community members collectively design and contemplate on future courses of action. Distinct from forecasting abilities which rely more strongly on technical intelligence, and concentrate primarily on predictions, probabilistic statements about the future with a relatively high confidence level and accuracy (Martin 2010), community foresight abilities rely more strongly on social intelligence established by the people involved as community members. Foresight abilities are typically concerned with taking an active role in shaping the future and drawing conclusions for the present (Cuhls 2003) next to creating a broad understanding of possible developments likely to shape multiple alternative futures (Martin 2010). Given the recent interest for prediction in relation to artificial intelligence technology, Nonaka & Takeuchi (2021) called attention to such humanized strategy making. They pointed out the importance of dealing with unpredictable situations by people at the centre of strategy. To employ a kind of human intelligence counterpart to practices of machine learning on big data lakes, strategizing by collective structures of human knowledge is becoming increasingly important. 'Humanizing' the strategy is described as using experiential knowledge and drawing on beliefs, ideals and intuition by contemplating a future course of action, empathizing with others and pursuing the common good. In relation to this, we shift the focus from organizational strategy making to community practices, to study the collective ability of shaping foresights and how community members collectively design and contemplate on future courses of action.

2.2 Role of strategic design

In this study we describe strategic design as a role that influences strategic decision-making through design practices that value co-creation, by taking an organizational viewpoint towards meaningful future outcomes (Bouman & Simonse 2023). This description draws first of all on Manzini & Vezzoli (2003) on large-scale projects of designing sustainable strategies. Manzini and Vezzoli identified that value creation is a core element of strategic designing. In addition, their paper identified new organizational configurations of stakeholders, among which we consider that communities could be an example of new collective organizational configurations. Second, the role of design in strategy making extends and builds on the participatory design methodology. Distinct from human-centred design – which is much more person-focused and concentrated on shaping objects by form and interactions for individual use – participatory design takes a collective perspective and organizational viewpoint. The participatory design methodology describes organizations and societies as collectives of humans and non-humans that provide meaning to designed artefacts (Bjögvinsson, Ehn, & Hillgren 2012; Ehn *et al.* 2014). In relation to foresight abilities, the tradition of participatory design has, since its inception, nurtured future thinking with supporting methods to imagine and create desirable futures within reach (Ehn *et al.* 2014). Yet, most participatory studies focused on the methods and techniques of co-creating future artefacts and to a lesser extent studied the strategic role and influence on decision-making.

In considering this, we base the strategic design role on an evolving line of inquiry (Bouman & Simonse 2023). Among the first studies, Hertenstein & Platt (1997) identified the key elements of "bringing design into the realm of strategic

decision-making." Borja Borza de Mozota (1998) described three areas within the overarching domain of strategic design: operational design (1), functional design (2) and anticipative design (3). This article focuses on anticipative design which, according to Mozota, "creates value through anticipation of changes in the firm's environment, whether internal or external" (p. 28). Furthermore, we extend the more recent line of research that consolidates the role of designers in becoming involved in strategic decision-making in organizations (Micheli, Perks, & Beverland 2018; Björklund *et al.* 2020; Gallego, Mejía, & Calderón 2020) and consider strategic design as "a professional field in which designers use their design practices to co-determine strategy formulation and implementation" (Calabretta, Gemser, & Wijnberg 2017, p. 109). Within and beyond organizational settings, the role of strategic design has been related to abilities of co-creating value and envisioning desirable futures (Canales Durón, Simonse, & Kleinsmann 2019). Its design practices of future labs and platforms for trend watching, co-creating foresights and future world building might improve collective foresight abilities of communities. However, this has remained largely under-researched. Therefore, this research concentrates on how the role of strategic design can effectively influence the collective foresight abilities of communities.

2.3 (Online) Community practices

Advanced by the social media evolution of internet technologies, community platforms enable designers and non-designers to connect creatively (Albers *et al.* 2018). Online communities are established by conversation threads, in which members generate posts, blogs, images or videos and spread the content they like or dislike by tagging it (Faraj, Jarvenpaa, & Majchrzak 2011; Leonardi & Vaast 2017). This has not only led to new social media engagements by strategic leaders (Heavey *et al.* 2020) and design leads (Knight, Daymond, & Paroutis 2020), but this also increasingly impacts the strategy making of organizations. Social media serves as a lubricant that can allow people who do not know each other to easily engage in conversation threads and thereby discover new knowledge and integrate it into strategies (Neeley & Leonardi 2018). Online communities open up collective abilities of knowledge creation for strategy making (Dobusch & Kapeller 2018; Plotnikova, Pandza, & Sales-Cavalcante 2020). The origins of such communities can be traced back to free and open-source software communities that invented, through learning by doing, specific platforms of online communication for collective problem solving (Foss, Frederiksen, & Rullani 2016; Dai *et al.* 2020). Their organization model has been characterized by a system-level goal and is not bound by formal authority relationships based on employment contracts. Typically, online community models have a low degree of stratification and function by heterarchical decision-making (Gulati, Puranam, & Tushman 2012). They foster creativity and span beyond organizational boundaries of economic and legal transactions that need to be integratively managed (Jarvenpaa & Lang 2011). Communities are distinct from crowds and activities of crowd sourcing (Afuah & Tucci 2012; Burnap *et al.* 2016). The actors in crowd sourcing are more isolated and dispersed (Dobusch & Kapeller 2018), while communities have interrelated actors who identify themselves as members of the community. This has been exemplified in the Creative Commons community (Dobusch & Kapeller 2018). Collectively, members of communities might help in foresight, to overcome the

blind spot caused by the natural tendency of internal managers to take a narrow focus on their current markets, as Day and Schoemaker (2004) had identified early on. Within organizations, the common practice of strategic foresight involves gathering a small group of executives in a conference room (Leonardi 2011). However, this tends to reinforce the scope of the strategy, as shaped by the current mindsets and blind spots, instead of expanding its view towards monitoring the periphery and anticipating unmet needs (Day and Schoemaker 2004). Designing foresights by online communities might excel in capturing unmet needs and enable organizations to cross their boundaries and reach beyond the internal scope. However, how such communities include social media engagements is relatively unknown.

To some extent, all these prior studies have implicitly hinted towards organizing a collective ability of foresight. However, it has remained largely unclear how design communities are essential in explicitly generating foresight. A more fine-grained understanding, and framing of how designing foresights within and between communities takes place, is needed.

Therefore, this research seeks to advance the understanding of community abilities of foresight by adopting a particular focus on strategic design practices. The main research questions are as follows: (1) How are design communities related to abilities of foresight? (2) Which roles are essential to designing foresight by communities? (3) How is social media involved in online design communities of foresight?

3. Methodology

3.1 Qualitative inductive methodology

Driven by the exploratory nature of these research questions, we employed a qualitative inductive methodology for the purpose of theory-elaboration and the development of an emerging theory (Eisenhardt 1989; Corley & Gioia 2011) on the nature of the community abilities of foresight and the strategic role of designers. The conducted research work is based on rigour, transparency and replication of the qualitative research tradition (Miles & Huberman 1994; Strauss & Corbin 1998; Patton 2002; Gioia 2021). In this section, we give an account of our choices and the main steps. In Supplementary Appendix 1 the detailed activities are reported in order to make an empirical replication possible.

First of all, we chose the qualitative inductive method of the grounded theory approach (Strauss & Corbin 1998; Gioia 2021) as it is the most appropriate ontological perspective for enhancing theoretical understanding of community abilities of foresight and building a theoretical framework with evidenced relevance across strategic design practices (Eisenhardt 1989). Second, for the data collection, we employed the semi-structured interview technique. A pilot interview with a foresight practitioner was carried out upfront to test and sharpen the interview protocol (Patton 2002). Third, we conducted the semi-structured interviews. In addition, we made use of an observation guide and collected design community documents, including web pages for the triangulation with the collected interview data (Patton 2002). Fourth, for reasons of external validity and to be able to achieve theoretical saturation (Bowen 2008), the collection of the data was focused on comparison across case

contexts. Through theoretical sampling we selected 10 design communities (Patton 2002). Fifth, the systematic data analysis was based on transcription and aggregate code analysis (Patton 2002; Gioia 2021). Sixth, the coding tree was generated based on a predefined threshold for inclusion; there had to be more than five coded quotes from two or more respondents. Seventh, grounded on the results, the theoretical framework was built and the propositions were developed (Eisenhardt 1989; Gioia 2021). These outcomes are reported in the discussion section of the article.

3.2 Sample

We employed a careful selection procedure for the sampling of communities engaged in foresight. First, the communities were selected using purposive sampling (Patton 2002). At the top of our list were online community platforms with annual foresight report subscriptions. Then we sampled a diverse range of communities with members from multiple corporate organizations; design studios from labs to platforms. Table 1 shows the sample of 10 communities.

4. Results

This study found three modes of community foresight abilities. (1) The first mode of community-conceived foresight is based on communities for creatives, orchestrated online by means of a social foresight platform and onsite by offering a creative workplace in an urban location. (2) The second mode of community-captured foresight is focused on user communities and the capturing of future signals within these communities; online for instance by social media listening. (3) The third mode of community-designed foresight is most concentrated on strategic communities. Within each mode, a particular foresight role appeared to be relevant: (a) the orchestrating role in creative communities, (b) the trend leadership role in user communities and the most commonly shared role of (c) the new groundbreaker in strategic communities. The coding tree is presented in Figure 1.

The distinctive modes of community foresight abilities are the themes resulting from the inductive coding analysis that unravelled the fine-grained characteristics into codes and categories. The three themes of community abilities of foresight are based on five categories that share role and social media characteristics, as can been seen in Figure 1, the coding tree. The evidence on these categories is explained in more detail in the next three paragraphs and construct-tables.

4.1 Mode 1: community-conceived foresights

The first mode concentrates on establishing a community of creatives and then tapping into this community to conceive foresight. Table 2 defines its ability as a "creative ability of imagining new signals of the future and proactively generating foresights while blending creative work with cultural events within a community." This community ability of conceiving foresights comes in two forms: one enabled by platform technology and another stimulated by rough and underdeveloped urban areas. The platform of community building organizes creatives through

Table 1. Sample of communities

Nr.	Community	Base	Community members	Community activities	Community respondent		
					Function	Background Education	Age
A	World-building lab	NL	Joined by governmental organizations and multiple design studios.	Future casting workshops, Future world-building projects Speculative fiction and design master classes for members.	Futurist	History and architecture	35–45
B	Co-creation community platform	UK	Curated global platform with about 4,000+ creative minds online including multiple corporations with brands in the fashion, automotive, IT, consumer lifestyle and fast-moving industries.	Shared foresight content, i.e., trend updates and reports on lifestyle, culture and retail. Community co-creation projects on strategy. Curated events onsite. Shared working spaces.	Community manager	Arts and English literature	25–35
C	Future lab	UK	Curated global platform with 150 + partner organizations including multiple design studios and corporations in the fashion, automotive, IT, health and fast-moving industries.	Curated events onsite: Future forum events and breakfasts. Shared foresight programs and reports. Daily foresight intelligence updates.	Strategist	Languages	25–35
D	Trend intelligence platform	UK	Curated global trend platform with 3,000+ trend spotters in 50+ countries, including multiple corporations with brands in the fast-moving consumer goods, automotive, finance, charity and IT industries.	Foresight data feeds: quarterly updates of curated trend reports per industry. Trend innovations snapshot per month, industry heat maps and private slack group data. Custom trend reports. API custom system integrations. Online trend academy and curated trend events onsite.	Senior trend analyst	Fashion academy	25–35
E		NL	Institute that unites 350+ organizations from the	Curated events onsite; multiple annual trend books, quarterly		Fashion academy	35–45

Nr.	Community	Base	Community members	Community activities	Community respondent		
					Function	Background Education	Age
	Creative branch institute		national creative industry, including multiple design studios, small and medium enterprises and corporations with brands in the materials, interior design and consumer lifestyle industries.	events. Community co-creation projects on strategy. Organized trend travels across trade fairs and design weeks.	Strategic trend expert		
F	Material futures community	NL	Creative industry community on long-term material futures joined by several corporations with brands in the fashion, consumer lifestyle, automotive and IT industries.	Seasonal sharing of colour and material futures information. Future workshops on innovations, materials and production methods directions.	Creative director	Fashion academy	35–45
G	Future watching community	NL	Cross-industry community on future watching with 350+ organizations including sector institutes and corporations with brands in IT, education, healthcare and finance.	Curated events onsite: inspirational talks and master classes on future transformations in the sector. Future workshops.	Futurist	Philosophy, business administration	55–65
H	Future scenarios academy	NL	Academy on future scenario storytelling joined by multiple corporate organizations in the government, education, charity and engineering industries.	Masterclasses on future scenario method. Community co-creation projects with horizon scanning, future casting and vision development. Future workshops on scenario storytelling.	Future scenario expert	History	55–65
I		NL	Extended corporate community on people-centric trends with	Curated events onsite: large-scale trend foresight workshops,	Trend director	Fashion academy	45–55

Table 1. Continued

Table 1. Continued

| Nr.	Community	Base	Community members	Community activities	Community respondent		
					Function	Background Education	Age
	People-centric trend community		multiple user communities, corporate employees and multiple partner studios and corporations in the health tech industry.	quarterly and monthly updates. Community co-creation projects on strategy.			
J	Future thinking community	NL	Extended design academy community on future thinking with multiple corporations with brands in the automotive, charity, government and finance industries.	Community co-creation projects to imagine sustainable futures. Future workshops and development of scenario stories.	Future scenario expert	Communication, Policy, and Organization	25–35
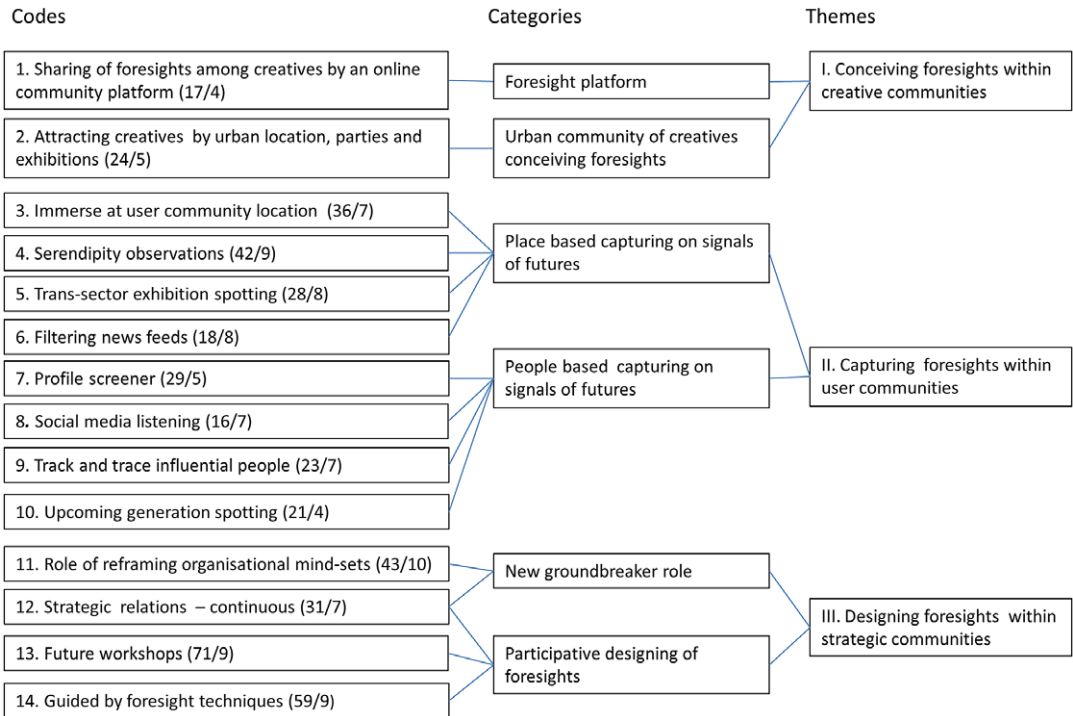
Figure 1. Coding tree of community foresight abilities (In brackets: first number of codes/second number of practices).

enabling them with Web 2.0 technology on dedicated community platforms that generate foresights (17 quotes).

> *"So usually what we have at [Name of foresight platform] is some people twin in within the insight network – that is a [large] group of people spread out across the globe who sort of send us innovations from their local markets. Everyone can sign up – you don't need to have a degree in trends or work in trends … Here is an "introduce-yourself channel" [with posts of:] "my name is this is …I live here"; "Oh wait me too, let's meet up?"… They post questions – "I am looking for this," "Can you help me with that""– Respondent D.*

Tapping into this community platform:

> *"…then also feeds into our understanding of the world gets to experience new things that is the best but the more you see the more you get jaded by it."-Respondent D.*

> *"I find that very interesting myself, how those new imaginations… can also conceive a kind of romantic realistic sustainable future. That's the most interesting thing; it is purely as an aesthetic movement of latest fashion pictures and memes that kind of originate from this digital culture." - Respondent A.*

This appeared to be a common practice among more than one third of the communities. On some creative platforms, "trend spotters" from all over the world contribute their observations on a voluntary basis, while on others the moderators reward the members.

Table 2. Construct of community-conceived foresights

Community ability

Construct	Community-conceived foresights
Definition	Creative ability of imagining new signals of the future and proactively generating foresights while blending creative work with cultural events within a community. Two forms identified: (1) social foresight platforms enabled by social media technology, (2) open creative community workplaces in a rough and underdeveloped urban area.
Evidence quotes Representing 17 quotes, from 4 online creative community modes and 24 quotes of 5 urban communities of creatives.	(1) Sharing of foresights among creatives by an online community platform (17/4) *"So usually what we have at [name of foresight platform] is some people twin in within the insight network – that is a [large] group of people spread out across the globe who sort of send us innovations from their local markets. Everyone can sign up – you don't need to have a degree in trends or work in trends … Here is an "introduce-yourself channel" [with posts of:] "my name is … I live here"; "Oh wait me too, let's meet up?"… They post questions – "I am looking for this," "Can you help me with that" – Respondent D.* Tapping into this community platform: *"… then also feeds into our understanding of the world gets to experience new things that is the best but the more you see the more you get jaded by it."-Respondent D.* *"I find that very interesting myself, how those new imaginations… can also conceive a kind of romantic realistic sustainable future. That's the most interesting thing; it is purely as an aesthetic movement of latest fashion pictures and meme's that kind of originate from this digital culture." – Respondent A.* (2) Attracting creatives by urban location, parties and exhibitions (24/5) *"… Parties have always been a very important part from what I can see … If you want to build relationships there's a way of saying, 'Come down see us; have a good time with us.' And I think it does work, that it is a very clever way to do it if you want to be in front of minds of people that are very connected, like young cool kids, it kind of makes sense to give them a space to play. We often hear the response back, like: 'Oh we know you guys' or 'I have been to an event'…or the [name of foresight community] exhibitions', which just opens up doors." – Respondent C.* *"… at the [foresight community name] we like to think that everybody is entrepreneurial in a point that they are open to discovering new systems, and newness. I think we are everything but passive, we are a group that interrogates challenges and learn. So perhaps the two things for the [foresight community name] are: we are fundamentally curious… we 'dare to know'. It is all about curiosity about wanting to find the new, understand the new, and predict the new."- Respondent C.* *"And in our case, an aesthetic feeling and also a sense of what's new and where things are going." – Respondent F.*

Table 2. Continued

Community ability

Contribution to extant literature	In extension to an organization's ability of coping with the future (Tsoukas & Shepherd 2004, p. 138; Chia, 2005; p. 21; Whithead, 1967) this construct contributes with a novel understanding on (1) the creative nature of foresights that involves imagination and generation of foresights and (2) a community ability of sharing foresights among creatives with cultural engagement relations. Conceiving foresights is distinct from capturing foresights in user communities and designing foresights in strategic communities. In contrast to the former, which involves observing and uncovering community signals from a "spectator's" perspective, members in creative communities have a proactive ability to conceive new signals of the future. The distinction with the latter concerns the cultural engagement relations rather than employment or project relations. The newly identified cultural engagement relations are orchestrated through attractive locations, "cool" events or online enabling of informal meetings.

The counterpart to orchestrating such platform community building with a global reach appeared to be local community building among creatives. For this purpose, open community workplaces are established. The location is chosen in a rough and underdeveloped urban area that also attracts other creatives. Parties, exhibitions and art events are then organized to bring the creative community alive (24 quotes). After this, some of the community members become actively involved in the generating of foresights:

"… Parties have always been a very important part… If you want to build relationships there's a way of saying, 'Come down see us; have a good time with us.' And I think it does work, that it is a very clever way to do it if you want to be in front of minds of people that are very connected, like young cool kids, it kind of makes sense to give them a space to play. We often hear the response back, like: 'Oh we know you guys' or 'I have been to an event'…or the [Name of foresight community] exhibitions," which just opens up doors." – Respondent C.

"… at the [foresight community name] we like to think that everybody is entrepreneurial in a point that they are open to discovering new systems, and newness. I think we are everything but passive, we are a group that interrogates challenges and learn. So perhaps the two things for the [foresight community name] are: we are fundamentally curious… we 'dare to know'. It is all about curiosity about wanting to find the new, understand the new, and predict the new."- Respondent C.

"… and in our case, an aesthetic feeling and also a sense of what's new and where things are going." – Respondent F.

The creative platforms are differentiated from urban workplace communities in terms of foresight orientation – global and local, type of social relations, and

extensive use of web analytics. Common for both in this mode is the role of the orchestrator of the creative community.

4.2 Mode 2: community-captured foresight

Discerned from the user community mode is the collective ability of capturing foresights. User communities appeared to be related to two types: either place-based or people-based capturing of foresights. Both abilities appeared to seamlessly integrate the use of social media. Place-based capturing ranges from local to global observations, involving only basic use of social media such as news feeds and marketing messages about events. People-based capturing of foresights depends on the trend leadership of influential people within a community of interest (also known as lead users), which can be tracked by social media listening and profile analytics.

The place-based activity that the respondents commonly mentioned was one of immersing at a user community location (36 quotes). Next to these planned activities of capturing signals, serendipity observations are part of such capturing (42 quotes):

> *"Because you are working on future and you are looking at the new and innovative, it makes those little flashes of it in … life more obvious." – Respondent C.*

In addition to the capturing of signals at local places of work and living, travelling to global destinations to study places of interest in a particular country or capture signals at trade fairs, fashion and design weeks and branch events are part of trans-sector spotting (28 quotes). This global and local capturing of signals also has its digital equivalent in filtering news feeds (18 quotes).

The other distinctive activity commonly mentioned was people-based capturing of foresights. This involves profiled interests of people based on their reading, listening and viewing activities online. As part of this type of capturing foresight, a "profile screener" was also found to be common practice (29 quotes). Furthermore, we found a commonly shared activity of *social media listening* (16 quotes):

> *"… we would go even deeper, for example with social listening in which there are tools you can use, for example, when a brand just had a new product coming out and then we try to track if that brand was incredibly popular when they did that product release – to listen to the social response, so if lots of people are sharing it or posting, they are incredibly excited about it – we use that tool to measure the online response."- Respondent B.*

Social media platforms such as Instagram, Pinterest, LinkedIn, Twitter, Facebook and Google trends were commonly mentioned as a means of tracking and tracing influential people (23 quotes) and specifically as a way of tracking future interests of upcoming generations, including students, Generation Z and millennials (21 quotes). Grounded on this evidence, Table 3 defines this new construct of social media listening: "people-based capturing of future interests by using social media tools that measure the extent and excitement of social response on a person's post that addresses a future context."

Table 3. Construct of social media listening on future signals

Community-related activity

Construct	Social media listening on future signals.
Definition	People-based capturing of future signals by using social media tools that measure the extent and excitement of social response on a person's post that addresses a future context.
Evidence quote Representing 16 quotes, from 7 communities that are capturing foresights by including online user community modes of social media.	*"… we would go even deeper, for example with social listening in which there are tools you can use, for example, when a brand just had a new product coming out and then we try to track if that brand was incredibly popular when they did that product release – to listen to the social response, so if lots of people are sharing it or posting, they are incredibly excited about it – we use that tool to measure the online response." – Respondent B.* *"And then the sentimental data, mini wholesales for some brands to show this, I do it often, some say "do some social listening" – Respondent C.* *"Twitter I think is a good way of information, yes sometimes I get a bit itchy, but you kind of have the brains of the whole world there…. really as a source of information that you can follow people who you find interesting and see how they think and what of course is true, that is what we are doing, (listening) of how do they think, how do they look, and what do they say." – Respondent F.*
Contribution to extant literature	This construct extends the current understanding of online community models (Jarvenpaa & Lang 2011; Gulati *et al.* 2012; Dobusch & Kapeller 2018). This construct effectively relates the use-related knowledge within social media communities to strategy abilities of designing foresights, beyond the more operational innovation abilities in which user communities are involved (Hienerth *et al.* 2011; Chatterji & Fabrizio 2014). Discerned from the strategic communities, user communities inhibit an abundance of external foresight knowledge. This construct also links to the profile analytics through which lead user roles in online user communities are identified by measuring the dimensions of trend leadership and high expected benefit (Kratzer & Lettl 2009; p. 201), The social media listening on future interests is differentiated through its particular focus on the reactions and conversations of community members. Social media listening on future interests is found to be distinct from place-based capturing of signals of the future through immersing activities, serendipity observations, filtering news feeds, and trans-sector exhibition and upcoming generation spotting.

4.3 Mode 3: community-designed foresight

The coding analysis revealed a distinctive new groundbreaker role in strategic communities. The discovery of this new role was gradually recognized as an important pattern in the coding process. All respondents commonly agreed on this new role of new ground-breaking (43 quotes; see the number 43 in brackets in Figure 1). This role brings in inspiration from multiple communities and challenges the strategic community's mindset;

> *"First you have to prepare the ground well, so that really means 'opening up'. When people have become very responsive and are very well opened up, then you have to bring them, I call this the future horizon, to the whole abstract level of thinking, so when they are open for abstraction, they start thinking in a different way and this is what I do then."- Respondent E.*

takes the strategists out of their comfort zone;

> "My purpose of work is to bring business [teams] out of their comfort zone." – Respondent E

> *"When there are all traditional thinkers in the room, I tell a story to "shake up their beds," with very concrete goals. I think 20 percent is relaxing and entertaining, and 80 percent, because I choose them that way, are call-to-actions." - Respondent G.*

pushes their boundaries;

> *"Even when the people say: 'Oh we only want to see transport innovation because I'm a transport brand' … I am always trying to push the boundaries about how we define transport … 'Moving things from A to B is transport' so we can move people from A to B but [meanwhile] we can move ideas from A to B. – I always try to encourage that…. some are very responsive and quite open to that, and there are others, it can be just because of the jobs in the past or maybe even how long they have worked in the company, they kind of do struggle to see the big picture. It is exciting when there is that aha moment "ooh that's why!" – Respondent D.*

and reframes their mindsets;

> *"In the end, of course, it's about getting people moving for the benefit of themselves and others. And that requires more than just a round of applause.-Respondent F.*

> *"…the gentle art of re-perceiving. The biggest point is that people are re-perceiving – by doing so they change the way they look to the business environment. They are re-perceiving reality." If you know that decision-maker is in this scenario (top left-of a four quadrant grid), this is the dominant thinking, you can transform this thinking by scenarios to another opposite (bottom right) and so you break his/her dominant thinking. – Respondent H.*

and in this way influences the strategic decision-making.

> *"It's about propelling these changes. And then they will think about that again and continue to work on it." - Respondent I.*

> *"People decide that themselves. We ask them to make an impact and uncertainty analysis….and people in the organization decide which the best foresights are." – Respondent H.*

Grounded on this evidence, we defined the construct of the new groundbreaker role – see Table 4 – as "enacting the role of reframing innovation opportunities,

Table 4. Construct of new groundbreaker role

Community-related role

Construct	New groundbreaker
Definition	Enacting the role of reframing innovation opportunities, ideas and organizational mindsets in collective strategizing on future directions by bringing in inspirational foresights and creating meaningful long-term directions within and across strategic communities.
Evidence quotes Representing 43 quotes of 10 communities – the total sample.	*"First you have to prepare the ground well, so that really means 'opening up'. When people have become very responsive and are very well opened up, then you have to bring them, I call this the future horizon, to the whole abstract level of thinking, so when they are open for abstraction, they start thinking in a different way and this is what I do then." – Respondent E* *"My purpose of work is to bring business [teams] out of their comfort zone." – Respondent E* *"When there are all traditional thinkers in the room, I tell a story to 'shake up their beds,' with very concrete goals. I think 20 percent is relaxing and entertaining, and 80 percent, because I choose them that way, are call-to-actions." – Respondent G.* *"I am always trying to push the boundaries about how we define transport … 'Moving things from A to B is transport' so we can move people from A to B but we can [also] move ideas from A to B. – I always try to encourage that. …some are very responsive and quite open to that, and there are others, it can be just because of the jobs in the past or maybe even how long they have worked in the company, they kind of do struggle to see the big picture. It is exciting when there is that aha moment "ooh that's why!"– Respondent D.* *"In the end, of course, it's about getting people moving for the benefit of themselves and others. And that requires more than just a round of applause. – Respondent F.* *"…the gentle art of re-perceiving. The biggest point is that people are re-perceiving – by doing so they change the way they look to the business environment. They are re-perceiving reality." If you know that the decision-maker is in this scenario (top left-of a four quadrant grid), this is the dominant thinking, you can transform his thinking by scenarios to another opposite (bottom right) and so you break his/her dominant thinking. – Respondent H.* *And in this way influence the strategic decision-making:* *"It's about propelling these changes. And then they will think about that again and continue to work on it." Respondent I.* *"People decide that themselves. We ask them to make an impact and uncertainty analysis…and people in the organization decide which foresights are the best." – Respondent H.*
Contribution to extant literature	The new groundbreaker role enacted for designing foresights extends the role of strategic design as a role that influences strategic decision-making through design practices of value co-creation, by taking an organizational viewpoint towards meaningful future outcomes. (e.g., Manzini & Vezzoli 2003; Ehn *et al.* 2014).

Table 4. Continued
Community-related role
This novel role is distinct from the leadership role of a strategic community manager (Plotnikova *et al.* 2020) that is often enacted by an internal organizational manager in that this new groundbreaker role is enacted by a strategic designer within and between a critical set of creative, user and strategic communities.

ideas and organizational mindsets in collective strategizing on future directions by bringing in inspirational foresights and creating meaningful long-term directions within and across strategic communities."

This community mode is further characterized by a participative designing approach dedicated to collective designing foresights. In particular, the codes indicate a common use of a future workshop method (71 quotes) and collective design activities guided with specific foresights techniques (59 quotes).

Overall, the fine-grained analysis untangled that the use of social media differs depending on the mode of community foresight ability. In the first mode, dedicated platforms for generating foresights have been built. In the second mode, social media listening and news feeds are part of the capturing of foresights. The third mode thrives on mainstream use of social media.

Although different, the three modes did not appear to be mutually exclusive in the sense that only one community foresight ability is practised. Next to a sequence of all three modes, also combinations of the third and second modes, the designing and user capturing of foresights, and sequences of the first and third modes, the conceiving and designing of foresights were practised with community workshops on participative design techniques of foresights as an integrating mechanism.

5. Discussion

In order to better understand the humanizing of foresights with community practices and the role of strategic design within these practices, this research untangled the community abilities of designing foresight, its roles, relations and social media involved. It makes several important contributions to the existing lines of inquiry on community practices of strategy and design. First, this study extends the current understanding of foresight abilities from anticipating and coping with the future, to generative abilities of conceiving, capturing and designing foresights. Second, the novel ability of conceiving foresight extends the current understanding of collective foresight abilities. Third, in extension to the role of strategic designers, this study uncovered the novel role of the new groundbreaker. Fourth, beyond orchestrating a single community alone, a critical set of communities, consisting of a creative, user and strategic community appeared to be relevant in designing foresights. Moreover, this article yields insights on user community practices with social media. It uncovers a specific type of social media engagement: social media listening. Finally, by building on these prime findings a theoretical framework
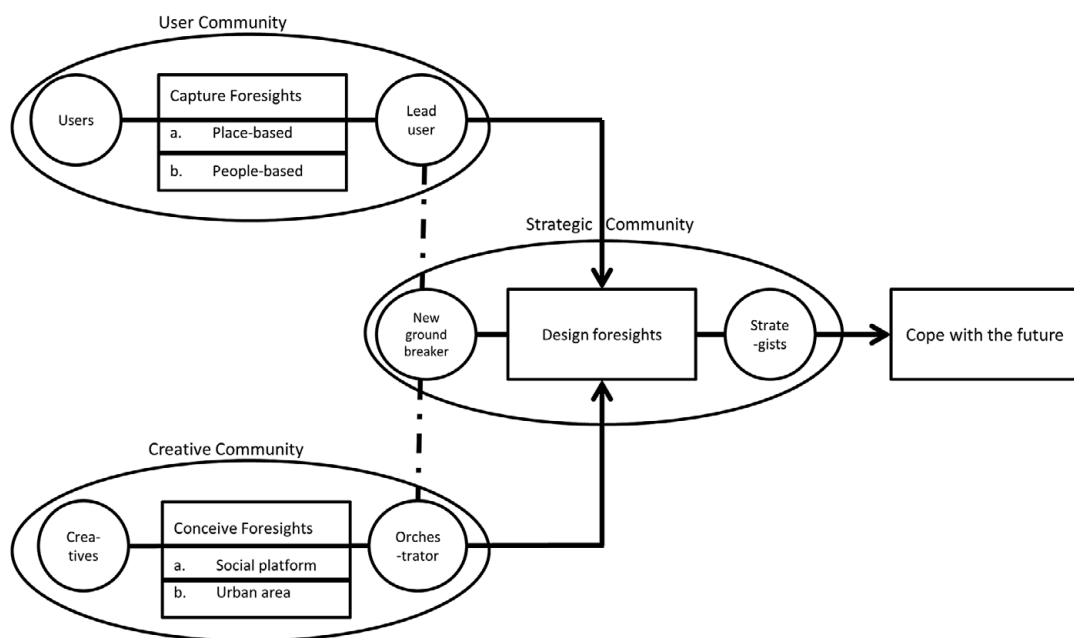
Figure 2. Framework for designing foresights by communities.

of multi-communities could be crafted, as shown in Figure 2. In the next paragraph, the emerging theory related to this framework is provided with propositions to help shape further theory development.

5.1 Framework of designing foresights by communities

Figure 2 shows the distinctive modes of communities for designing foresights, and further highlights the uncovered roles.

In contributing to the role of strategic design, this framework places humans at the centre of community foresights. With humans (not machines) handling unexpected and novel situations and dealing with unpredictability, the framework centres around community member roles, identifying strategists, users and creatives as members of their respective communities. The framework emphasizes the role of strategic designers who enact a new groundbreaker role in communities with strategists as members and span boundaries between communities with users and creatives as members. Besides enlarging an organization's foresight ability with the strategic community ability, the framework implies extending the collective foresight abilities further towards capturing future signals in response to the lead user's actions within user communities and includes the novel mode of conceiving foresights within creative communities. Within creative communities, the role of an orchestrator is to initiate and manage cultural engagement relations through offering attractive urban work locations, organizing "cool" events or enabling informal online meetings between creatives. We conclude by formulating the propositions associated with the framework.

The first and novel mode of conceiving foresights concerns the communities of creatives. This study opened up a new perspective on the relevance of creative

communities for organizational abilities of foresight. It unravelled the community-conceiving ability enacted by creatives who blend creative work with cultural events and actively generate foresights. Distinct from and in contrast to observing and uncovering community signals from a "spectator's" perspective, members of creative communities collectively have the proactive ability to conceive new foresights.

P1: Conceiving foresights with creative communities positively influences the foresight ability.

From the common strategic practices of creative communities that appeared to be relevant in conceiving foresights, we untangled two forms: (1) foresight platforms and (2) urban communities. The orchestration of the first differs by the enabling of social media technology, whereas the second orchestrates a rough and underdeveloped urban area to stimulate the forming of an open workplace for the creative community. This leads to the following two propositions:

P2: Conceiving foresights in orchestrated social platforms is positively related to the foresight ability.

P3: Conceiving foresights in urban community places is positively related to the foresight ability.

As these creative communities are not managed by a role from a single firm or corporate organization, but are orchestrated externally, we identified the orchestrator role of organizing the collective ability of *conceiving* foresights. Thus, based on these findings we propose:

P4: Relating orchestrator roles to the new groundbreaker role positively influences the foresight ability.

The second mode of capturing foresights draws solely from user communities that emerge and centre on a shared interest. It extends the current understanding of community models, including those online (Jarvenpaa & Lang 2011; Gulati et al. 2012; Dobusch & Kapeller 2018) by identifying a different community ability of capturing foresight in user communities. We further relate our research finding to the existing body of knowledge on user communities. User communities have appeared to be crucial with respect to the observations and sensing of tacit need- and use-related knowledge that they acquire in the course of using a certain product or technology (Von Hippel 2007; Kratzer & Lettl 2009; Hienerth, Keinz, & Lettl 2011). Their representatives, the so-called lead users, have become actively involved in design activities with a strong impact on successful innovation performance (Hienerth et al. 2011; Chatterji & Fabrizio 2014). Lead users are defined by a foresight-related dimension of trend leadership: "Lead users face needs that will be general in a marketplace – but face them months or years before the bulk of that marketplace encounters them (trend leadership), and Lead users are positioned to benefit significantly by obtaining a solution to those needs (high expected benefit)." (von Hippel 1986, 2005; Kratzer & Lettl 2009, p. 201). Lead users have a central position within a user community (Kratzer & Lettl 2009, p. 201). In online user communities, lead user roles have been identified through web analytics measurements of the trend leadership and high expected benefit dimensions (Kratzer & Lettl 2009). Other than expected, our study confirms this lead user role and effectively

relates the use-related knowledge within social media communities to strategy activities of designing foresights, beyond the more operational innovation activities in which lead users and user communities are involved. We discerned from the common strategic design practices that user communities inhibit the accumulation of abundant external foresight knowledge. Capturing this knowledge positively relates to foresight abilities, leading to the following propositions:

P5: Capturing future signals within user communities positively influences the foresight ability.

P6: Relating lead user role to the new groundbreaker role positively influences the foresight ability.

The theoretical implication of these propositions suggests a replication of the lead user theory (Von Hippel 2007; Hienerth *et al.* 2011) in a multi-community context involving capturing foresights with lead user roles in user communities related to creative and strategic communities.

Our study further extends the lead user theory with a more fine-grained understanding of the people-based capturing of future signals enabled by social media technology. Besides the confirmation of the praxis of tracking and tracing influential lead users by profile analytics, social media listening enable the capturing of foresights, leading to the following propositions:

P7: Social media listening in user communities positively influences foresight abilities of place-based capturing of future interests.

P8: Profiling analytics in user communities positively influences foresight abilities of people-based capturing of future interests.

The third mode of communities most resembles the communities for open strategizing (Baptista *et al.* 2017; Dobusch & Kapeller 2018; Plotnikova *et al.* 2020). Our study adds to this understanding the relevance of collectively designing foresights and the participatory nature of it (Bjögvinsson *et al.* 2012; Ehn *et al.* 2014). In particular, our findings extend the current understanding of the role of strategic design as a role that influences strategic decision-making through design practices of value co-creation, by taking an organizational viewpoint towards meaningful future outcomes. (e.g., Manzini & Vezzoli 2003; Ehn *et al.* 2014). The role of new groundbreaker is distinct from the leadership role of a strategic community manager, which is commonly recognized as an internal role within strategic communities, most recently characterized by Plotnikova *et al.* (2020). The new groundbreaker role is a newly identified role that challenges the collective mindset of the strategy community, pushing the boundaries of their foresights, reframing innovation opportunities and ideas by bringing in inspirational foresights and creating long-term directions enacted through a strategic design role of the new groundbreaker. This role is enacted by a strategic designer within and between a critical set of creative, user and strategic communities.

P9: Collective foresights abilities based on multi-communities –a strategic, creative and user community – positively influences the foresight ability.

P10: Relating a strategic community manager role to the new groundbreaker role positively influences the foresight ability.

5.2 Limitations and future research

We acknowledge the limitations of a qualitative inductive study design that concentrates on gaining in-depth understanding and unravelling rich details focused on internal and construct validity rather than generating broad external validity across many industries and organizations. Therefore, our theoretical framework may not be generalized until the propositions are validated with additional qualitative and quantitative research studies across industries and organizations. The limitations of this qualitative research concern the use of words as the main data source, as these words (similar to words in survey questions) can be interpreted subjectively and the sample of 10 recruited respondents focused on gaining in-depth understanding until no new knowledge was gained. The means of seeking objectivity and reliability that we used in this study involved the triangulation of sources and researchers (Patton 2002; Fereday & Muir-Cochrane 2006). Our systematic and fine-grained code analysis showed commonalities across community practices of designing foresights, and provided external validity for the grounded evidence across 10 communities' practices based upon which the emerging theory has been formulated (Charmaz 2006; Eisenhardt 1989). To further develop the theory, we suggest setting up a survey that is based on the propositions as a first avenue of future research. A second avenue of research is to continue qualitative research on these specific modes of communities with separate research designs, including one that incorporates social media analytics.

5.3 Managerial implications

For the practice of designers and strategists, the insights and framework of this research propose to offer a few directions in building community foresight abilities by establishing three modes of communities – a strategic, creative and user community – and appointing leadership roles of respectively, a new groundbreaker, an orchestrator and a lead user. The initial tasks for these leaders are to invite community members and grow the community through orchestrating culture events and online meetings of minds within creative communities and social media listening within user communities. Then, in order to collectively design foresights within strategic communities, the new groundbreaker can bring the strategic leaders and additional member representatives together to share future signals in relation to a strategic context.

Ethical considerations

As part of the sampling procedure, vulnerable groups have been excluded. All respondents were contacted through email and informed about the purpose and background of the inquiry and the anonymization of personal details and community identifiers. Prior to the start of the interviews, the respondents were asked for their consent to be recorded and it was made clear that they can give as few or many details as they personally feel comfortable with and can withdraw from the interview at any point. The transcripts were reviewed by the respondent and used purely for data analysis. All transcripts and analyses are stored on a secure research database of the first author.

Acknowledgements

Supplementary Material

To view supplementary material for this article, please visit http://doi.org/10.1017/dsj.2023.16.

Author contribution

The first author designed and directed the research project, drafted the main writing and prepared the manuscript for submission. Both the first and the second author devised the research design. The second author conducted the data collection, audio-recorded each interview and took notes on observations and collected the documentation. She transcribed all interviews and anonymized the data. The transcripts were reviewed by the respondents and the first and the third author. All transcripts and analysis are stored on a secure research database of the first author. The documentation dataset was reviewed by the first two authors and summarized in memo notes. Throughout this process, the first two authors analysed the data in the systematic process of coding, clustering and condensing them into patterns and concepts. The third author provided a sounding board for validating the codes on relevance for foresight practices. All three authors collaborated on the sense-making of the categories and themes – the theorizing part and building logical chains of evidence – through multiple iterations, until all authors agreed fully on the final themes and categories of the codebook. These outcomes on the community foresight abilities were discussed by all three authors in relation to the extant literature.

Financial support

Declarations of interest

None.

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