Democratizing Ideation: A Critical Need for Business Innovation

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Abstract

Businesses constantly need novel ideas to sustain and grow. Ideation techniques often rely on human skills. It is difficult for untrained participants to be creative and arrive at high-quality ideas in quantity. Service design aids businesses to enhance their product and service offerings. Ideation processes in service design and business context need special attention considering the variety of stakeholders involved and their limited familiarity with creative techniques. We aim to make ideation more democratic and accessible to business stakeholders with a focus on quantity as well as quality. Using action research and research-through-design methods, we explored several approaches to enable collaborative ideation. We did this by leveraging creative techniques to enhance participants' abilities to ideate effectively across design workshops. We discuss key takeaways and challenges from our experience, pointing towards looking at ideation as a lifecycle and the need to integrate service design sensitivity to ideation.

Keywords: Ideation, Collaboration, Co-creation, Service Design

Introduction

Idea generation is integral to business organizations to stay relevant and competitive. While organizations invest in training employees for innovative capability, it is a big mindset shift for the workforce. Ideation methods need to be more democratic and accessible to the variety of business stakeholders, besides designers, who may have mixed capabilities or training in creative techniques. The context at business organizations, especially Information Technology (IT) organizations which we focused on, is usually different from creative firms that may have homogeneity in terms of creative capability. In IT organizations, the varied stakeholder backgrounds,

techno-centric practices, and hierarchical culture (Keum & See, 2017) can impede creativity.

Ideation practice needs to suit the needs and constraints of business organizations. There is a tendency to overuse brainstorming techniques rather than leveraging more suitable techniques. Ideas are often not processed further as they may not meet expectations. Ideas in high quantity alone do not suffice the requirements and expectations of organizations. High quality is also necessary but is difficult.

Service design is important for business transformation (Kurtmollaiev et al., 2018; Zomerdijk & Voss, 2010). Service Deisgn considers a holistic, ecosystem and people centric approach, with involvement of multi-disciplinary stakeholders. The development of ideas for services can be looked at from the frame of developing service concepts, service processes and a service system (Edvardsson, 1997). These aspects point to the need for special attention to ideation processes in service design (Foglieni et al., 2018).

The objective of our research was to explore how to make ideation methods in an organization setting more democratic and accessible considering the involvement of diverse stakeholders, including designers, and technology and business stakeholders who may not be trained in designerly (Cross, 1982) ways of thinking. We also aimed at enabling to effectively arrive at high-quality ideas, in high quantity.

The paper is exploratory and touches on several aspects of ideation in an organizational setting through our learnings from practical experience, with several workshops for five projects over two years—both employee and consumer-oriented services. In the background, we highlight the challenges and opportunities in the organization's context. The reflections highlight insights towards planning productive ideation workshops which would be useful for facilitators at organizations. We build a case for focusing on the 'quality AND quantity' of ideas instead of the ongoing debate on 'quality OR quantity'.

Background

A high-quality idea is novel, practical, and has high business potential. Typically, ideation exercises focus on the quantity of ideas rather than quality (Reinig & Briggs, 2013; Kudrowitz & Wallace, 2010). A large quantity of ideas is useful only if it leads to a subset of high-quality ideas. Literature supports that ideation techniques that help generate more ideas should ideally produce more ideas that are good (Han et al., 2018).

There are several quantitative and qualitative constructs available to evaluate ideas (Kudrowitz & Wallace, 2010). Dean et al. (2006) highlight idea quality, novelty, and creativity as evaluation constructs. The quality of new products is multi-dimensional, considering factors such as attractiveness, feasibility, novelty, specificity, and market demand (Girotra et al., 2010).

It is important to note the difference between 'ideation quality' and 'idea quality'. Briggs and Reinig (2013) describe 'ideation quality' as the degree to which a set of collected ideas help stakeholders to meet their intended goals or satisfy desired specifications. Shah et al. (2003) support this focusing on products and engineering design—when designing for services, specifications may not be fully defined. Novelty, variety, quality, and quantity are measures for ideation methods. In contrast, 'idea quality' is the property of a single idea (Briggs & Reinig, 2010), and can be estimated by an idea's projected impact on the business organization and its customers.

The quantity of ideas versus quality-ideas conjecture has always dominated research in ideation. As practitioners, we believe that instead of focusing on quantity "OR" quality, we need to consider quantity "AND" quality. Ideation research needs to focus on ideation techniques that can help generate a large quantity of quality ideas.

Ideation in business organizations

Project teams with diverse stakeholders can contribute richly through their expertise. However, they may not be familiar with creative or ideation techniques. Several considerations about ideation are important for organizations: barriers to ideation (Dam & Siang, 2020), issues in idea management across the lifecycle (Gerlach & Brem, 2017), use of analogous toolkits, games, cards, and technology for ideation (Peters et al., 2019), automated idea generation (Siemon et al., 2016; Han et al., 2018), need for ideation technology in an organizational setting (Maaravi et al., 2020), and the need for screening and evaluating the business impact to bring ideas closer to market readiness (Kelly, 2000). Some key aspects of ideation in organizations are discussed below.

Collaborative ideation exercises limited to brainstorming

It is important to have active collaboration within multidisciplinary teams participating in design activities (Stickdorn & Schneider, 2010) to achieve customer satisfaction through high-quality ideas. Team-based collaborative ideation techniques such as brainstorming are widely used in organizations and increase the average quality of ideas when compared to individual ideation and help to build on ideas. However,

brainstorming may not be the most effective method (Gobble, 2014). It is dependent on the skills of the participants and can lead to a saturation of ideas and creativity. It reduces the variety of ideas since they have been developed over each other's thought processes to build consensus. The average quality of ideas can deteriorate due to conformational biases.

Designers need to help participants to think divergently to arrive at creative ideas, express themselves, and convey ideas to others (Sanders & Stappers, 2014), and enable collaboration and co-creation. Teams should be enabled to adopt a variety of methods without training to have more effective ideation.

Dispersed stakeholders connected through virtual channels

The onset of remote working due to the COVID-19 pandemic and the increasing shift towards e-learning enabled the workforce in organizations to embrace digital workplaces (Ancillo et al., 2021). Ideation workshops were earlier limited to physical spaces depending on the physical availability of geographically dispersed innovators. With access to digital tools for co-working, ideation workshops support stakeholders to participate comfortably from their locations and devices, with little scheduling constraints. Ideation workshops can now be facilitated with a large number of multidisciplinary participants in the service ecosystem quickly and frequently through digital platforms. It is imperative to design new techniques for large-scale idea generation capabilities by leveraging digital transformation and adapting to the behavioural changes of employees toward the new normal.

Training innovators for ideation

Puccio et al. (2006) found that employees in the organization who have received training in divergent thinking are more fluent in idea generation than untrained employees. With technologies enabling collaborative work environments, organizations are focusing on facilitating virtual learning for capability building (McKinsey, 2020). Digital technologies promote the 'quantity' part of ideas and provide opportunities for design thinking facilitators to develop effective training resources for ideation and to help participants focus on 'quality' of ideas as well.

Prioritizing and taking ideas to implementation

When many raw ideas are generated, there is a need to objectively evaluate and prioritize them for detailing and implementation (Licuanan et al., 2007). This is a manual step prone to biases, decision fatigue, and cognitive overload. Also, when handing over specifications for implementation, there is often loss in the translation of idea concepts (Mahamuni et al., 2021) due to involvement of large and fluidly changing teams and operational delays.

Ideation for service design and service design-led innovation

Business organizations are increasingly proliferating a service design-led innovation culture to promote service variety and build customer loyalty (Zomerdijk & Voss, 2010). Service design provides opportunities for organizations to gain competitive advantage through value co-creation and management of service experiences. Service design must find ways to engage with non-design practitioners by making the language and methods of design more accessible (Covino & Bianco, 2018). Ideation in service design projects needs special attention as there are a variety of stakeholders cocreating. There is a more holistic and service ecosystem outlook, focusing on elements such as experience, customer centricity, and business goals. As a precursor to service design-led ideation, it is important to share a common approach of being empathetic to the problem and stakeholders, with a systemic and holistic attitude towards intervention design. Service design needs to help participants ideate with a common mindset without the need for extensive training.

Method

We utilized the Research-through-Design approach (Godin & Zahedi, 2014) where we conducted multiple iterative cycles of ideation workshops with various project teams in the organization. Our focus was to reflect on new knowledge through an action research-based (Avison et al., 1999; Yang & Sung, 2016) approach which can be summarized as: Plan research activities → Act as planned → Observe → Reflect on the observations → Refine and repeat the cycle. With this guideline, we devised ideation approaches that we tried in a workshop, reflected on observations, and refined the approach in subsequent workshops, across projects. This approach is broadly illustrated in Figure 1.

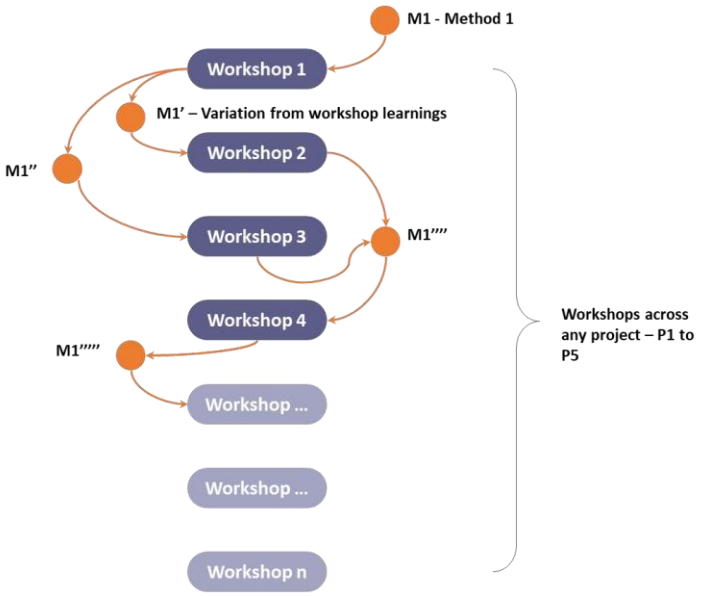

Figure 1. Indicative illustration of how ideation approaches were explored across workshops and projects.

We undertook several service design projects within the organization where we work, over a period of two years. A quasi-participatory approach (Mahamuni et al., 2018) helped divide parts of the design activities. Different stakeholder representatives including the designers worked separately on some activities—journey mapping, user research, or parts of ideation like clustering. The groups met frequently through workshops to synchronize. This helped manage organizational barriers for productive multi-stakeholder collaboration. The workshops were conducted virtually over Microsoft Teams. Projects P2 and P4 were organizational services, while P1, P3, and P5 were consumer-oriented business services, as listed below:

- *P1: Technology platform as a business offering:* New opportunities for a platform-based technology offering.
- *P2: Employee service for holistic well-being:* Bringing together disparate Human Resources (HR) initiatives under one umbrella of well-being.
- *P3: Hybrid-learning Service:* Opportunities in the education domain for the new normal.
- *P4: Building a Collaborative Culture:* Enhancing collaboration between research and business groups.
- *P5: Healthcare service for pain management:* Collaborating with healthcare experts and customer-facing teams to design for hospitals and patients.

In all the approaches, we introduced the participants to the CraftChange Empathy Square construct (Mahamuni et al., 2019) which directed participants to balance the concerns and constraints of end-users, service touchpoints (staff), the service provider organization, and the society/environment. This brought in a holistic service design mindset to facilitate higher-quality ideas.

We also included idea enrichment activities for a richer focus on quality through CraftChange enrichment cards (Mahamuni, 2020) and mapping the generated ideas onto the as-is journey map to identify areas that were saturated or lacked ideas.

Results—Ideation across Design Workshops

The ideation approaches that we followed can be broadly categorised into—Association-based (use of random keywords and images as triggers); Analogybased, and Behavior Change using CraftChange Ignite Cards as triggers (Mahamuni, 2020). Table 1 summarizes the variations in the ideation approaches across the projects.

Project	**Ideation approaches / Triggers**	**Number of generation workshops**	**No of idea raw ideas generated**
P1: Technology platform as a business offering	Association: Random words/images	1	342
P2: Employee service for holistic wellbeing	Analogies: Paired participants/Highlydetailed description and icons/single image/characteristics by participants CraftChange Ignite behavioral change trigger cards + Detailed Personas	4	~173
P3: Hybridlearning service	Association: Random words (Single/Multiple), Random Images (Single/Multiple/Abstract) Problem theme-based group discussion	3	~410

P4: Building a Collaborative Research Culture	Association: Random words (nouns and verbs) Analogies: Minimal details in textual description and images/characteristics pre-identified/characteristics by group discussion CraftChange Ignite behavioral change trigger cards + Problem theme-based group discussion	8	~377
P5: Healthcare service for pain management	Analogies: Group discussion/verbally described/multiple images personas	4 Brief	~480

Table 1. Summary of ideation approaches and variations across projects

1. Association-based ideation approaches

We devised variations of the association technique (Stickdorn et al., 2016) where participants tried to associate random words or objects for new ideas. We used this approach in P1, P3, and P4 projects. In the initial iteration in P1, we divided the participants into ten groups in a random manner. In every round, we provided each group with a contextual keyword or phrase from the problem domain and asked them to think of ideas using two sets of random words or images (Figure 2 and 3). The random words and images were curated such that the first set was closely related to the problem domain, and the second set was loosely related and could elicit out-ofthe-box ideas. Each group had 10 minutes to individually write their ideas in a digitally shared file, without a group discussion, to minimize their influence on each other (Nominal Group Technique approach (Boddy, 2012)). They were free to read each other's ideas to provide a sense of competition, openness, and visibility of activity. After this, the group had an opportunity to discuss their ideas briefly and build on each other. There were several rounds to focus on different aspects of the problem.

After the workshop, following the quasi-participatory approach, the designers in the team made a high-level clustering of the generated ideas and shared it with the project team. In the next workshop, small groups of participants were assigned to each cluster. The groups created more sub-clusters and developed the ideas further, now focusing on the quality of ideas. The groups presented and discussed the ideas in a moderated group discussion to build on each other's ideas.

Variations: We attempted several variations of displaying random keywords and images such as single random words or combining many random words, number of words, number of images at a time, how abstract the images were, combinations of images and words, the randomness of the keywords/images—words closely related to the domain (or less). Initially, the participants struggled in understanding how to generate ideas through this approach, given that the participants were not accustomed to creative approaches common to Design. Providing multiple examples along with handholding was important, after which the participants found the approach useful in thinking in multiple directions.

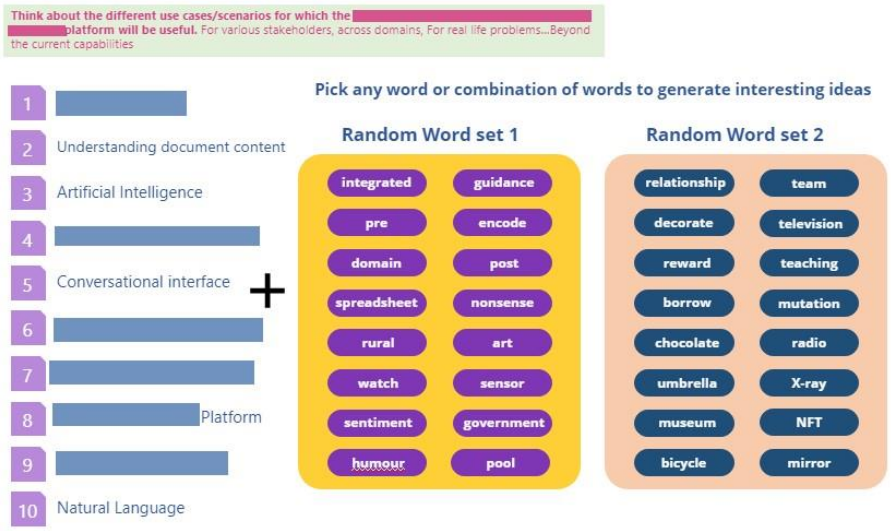

Figure 2. Ideation trigger exercises, combining contextual and random keywords

Figure 3. Ideation trigger exercises, combining contextual keywords and random images

2. Analogy-based ideation

In the well-being project (P2), the 'Amazon Forest' was considered an analogy for well-being, highlighting nature's way of maintaining symbiotic relationships in a large ecosystem. The participants were paired and provided questions to ponder over, along with images and keywords explaining how the analogy related to the problem at hand. They were instructed to individually note characteristics of the analogy as a mind map. The pair then discussed their mind maps and characteristics followed by jotting down their ideas individually in a shared document. This activity helped participants warm up to thinking creatively and expressing their ideas. This was followed by a group discussion to build on each other's ideas.

Variations: We tried different approaches to arrive at the analogy characteristics, such as group discussions (Project P5) where the moderator noted down the emerging characteristics on a shared screen. In another workshop (Project P3), the designers a-priori arrived at seed characteristics and displayed them during the workshop to trigger more characteristics through discussions. Providing some characteristics helped participants gain better clarity about the analogy and avoid tangential discussions as well as helped them think creatively.

Secondly, we supported the analogies with different levels of accompanying information across sessions. We used 'Marriage' as an analogy for 'collaboration issues' in Project P4 across multiple workshops. We added textual descriptions, probing questions, variations in several accompanying icons/images and keywords, and in some cases, no additional information other than verbally explaining the analogy. Adding too many details made the participants fixate only on the displayed details and not expand creatively. A good balance of detail and vagueness in the analogy helped enrich discussions.

Non-designers found it difficult to arrive at ideas using analogies for the first time. A two-step approach first helped in identifying characteristics and then applying these characteristics to arrive at ideas. Once this approach was explained with examples, the participants enjoyed discussing and coming up with new ideas.

3. Behavioural Trigger Cards

We used CraftChange Ignite cards (Figure 4 Figure 5) that describe various behavioural science concepts (Mahamuni, 2020) in projects P2, P4, and other projects where we desired behavior change. The cards had the name of the principle, an illustration, a short actionable description of how to use the principle practically, and several examples. We displayed digitized versions of the cards on a shared screen during group and individual ideation sessions—shuffling and presenting a new ignite card every few minutes.

Variations: We showed the Ignite cards while also prominently displaying the problem theme, brief personas, or detailed personas. In some cases, we used group discussions without trigger cards but supported with personas and problem themes. We found that the Ignite cards were very useful as triggers when the problem had a behaviour change angle, considering that most participants were not aware of behaviour change principles. The cards helped them practically think of ideas that could help in behaviour change. For example, 'Implementation Intentions' advises that providing details of how, when, and where helps in the likelihood of people doing what they set out to do. Such triggers were particularly helpful for participants to ideate for employee wellbeing (P2) in motivating positive behaviour towards wellbeing goals.

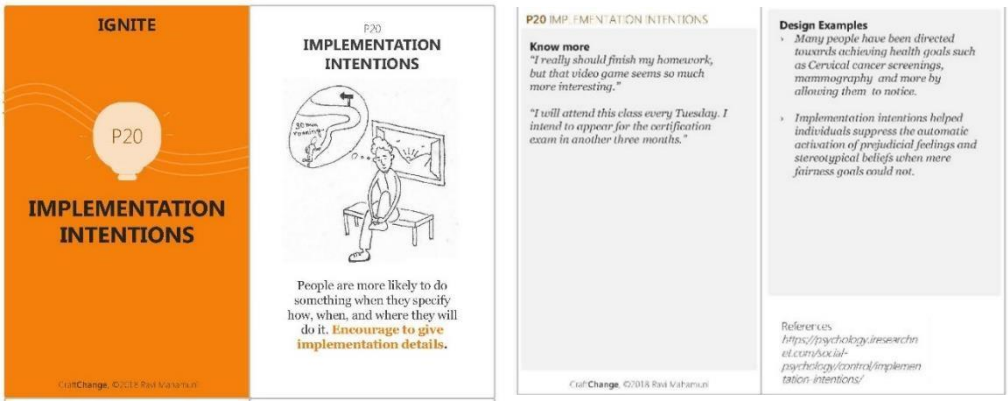

Figure 4. CraftChange Ignite Trigger Card

Preliminary evaluation

Since assessing the quality of ideas was difficult and subjective, we used alternative approaches to study the ideation quality and the quality of ideas. We sought subjective feedback from the participating teams to understand if their purpose was fulfilled and considered the quantity of ideas generated. The different ideation approaches helped inspire participants to contribute many ideas, ranging from 150 to 500 raw ideas across the projects. We used canvases such as creativity versus feasibility matrix, business value indicator canvas (Mahamuni & Ganwani, 2020), and CraftChange idea prioritization canvas (Mahamuni, 2020), which indicated that the teams could generate good quality ideas in high quantity. Subjective feedback from the different organizational teams indicated satisfaction with the novelty of the ideas that emerged and their potential business impact. Enrichment activities helped refine the ideas to create multiple service or product concepts.

Discussion

Treating ideation as a journey rather than a series of workshops

Considering the context of ideation in the enterprise is for complex business problems and not pointed problems, it is important to view ideation as a lifecycle or a journey and not just discrete workshops. The longitudinal nature is also an opportunity for the various stakeholders to engage deeply with the problem. There are many stages (Figure 5), starting with a purpose-driven selection of methods that suits the project team's intent. Ideation can be more effective if a customized combination of methods is made available. After idea generation, useful ideas need to be selected and enriched. The ideas are then transformed into high-level service or product concepts for prototyping and evaluation. The final stage is to create specifications of the ideas for implementation in a way that the essence of the ideas is adequately conveyed. Mahamuni et al. (2021) discuss approaches to specify design ideas for a technical implementation perspective, in more detail.

Figure 5. Ideation lifecycle

Coordinating for ideation across multiple workshops

Considering several factors that can make coordination in organizational setting difficult, the quasi-participatory approach (Mahamuni et al., 2018) helps manage the series of ideation workshops. The facilitating/design team can plan and conduct ideation sessions among themselves first to generate initial ideas and evaluate the ideation approach. Exercises can be given to the project team before ideation, such as familiarization with research findings, stakeholder surveys, and noting ideas individually. The ideation workshop is conducted together, following which the project team can be guided to conduct similar workshops by themselves within their extended teams. Once ideas are compiled, the facilitating team can help in initial clustering, and hand them over to the project team for granular clustering. Ideas can be discussed with several stakeholder teams for refining and evolving solutions. In this way, ideation can be a long-term activity and sub-activities can be appropriately divided between teams for better outcomes.

Another need is to carry the emerging context across the workshops. We devised a conceptual framework based on distributed cognition (Mahamuni et al., 2017) for

multidisciplinary teams to collaborate over a period to externalize cognitive structures and in-process artefacts to transfer knowledge, learnings, and insights across workshops and support each other's thought processes.

Purpose-driven selection of ideation methods

In our explorations, different teams needed varying kinds of ideas—some already had a product available, some desired a complete culture reimagination, and some were thinking futuristically. We needed to adapt ideation workshops case-by-case based on the intent of the team. Careful attention is required to select the appropriate methods to make the ideation highly purpose-driven—for the right intent and context of the team, as customer-facing teams may have different priorities. A focus is also needed to make ideation methods easy to replicate with minimal training.

Considering advances in technology including communication and remote facilitation, it is also important to consider new techniques that leverage these advancements.

Balancing individual and group ideation

We found it necessary to have a balance between individual exercises where participants wrote down their ideas, and group exercises with discussions. Individualwritten approaches helped arrive at a large number and variety of ideas quickly, especially when there were many participants. However, it introduced fatigue and felt pressurizing due to time constraints. Group discussions were prone to issues of group dynamics and swaying focus. Although group discussions led to fewer ideas than written individual exercises, the quality of discussions was usually high, with rich ideas since participants built on each other's contribution—however, this needs to be moderated well. The two approaches need to work in tandem in the workshop in a tailored way, to ensure the quantity and quality of ideas.

We found it suitable to begin with group exercises to warm up participants to ideation with activities such as open-sky brainstorming, before moving to individual and written exercises. The purpose of such brainstorming-based ideation was to exhaust top-of-mind ideas, and then provide several triggers and methods to help think more creatively.

Importance of constructing the right examples

Considering that most participants were unfamiliar with creative approaches common to the design field, it was important to convey examples so that people had clarity on using the approach effectively. For example, using the keywords directly rather than expanding on them creatively. If 'x-ray' was a keyword, there was a tendency on using x-rays directly as part of the suggested solution instead of expanding into possible meanings—such as a view into the internals, diagnostics, and mirroring.

Specific examples also biased participants to think of similar ideas during the session. When we proposed an idea of how 'machine learning' could be used with 'xrays' as an example, then the participants started proposing ideas related to machine learning and x-rays rather than exploring other avenues. It was hence important to elaborate and periodically handhold them on how to use the mechanisms to think of new ideas, rather than just focusing on the example discussed or using the keywords and illustrations as-is.

Importance of idea enrichment sessions to focus on quality

The use of idea enrichment activities helped consider perspectives that might have been missed. For example, we mapped initially-generated ideas on the existing service journey or used CraftChange idea enrichment cards for identifying dimensions such as motivations, timing and reinforcing actions, and using all senses. Frequent short workshops with the designers and a subset of stakeholders on evaluating and refining the service concepts as they evolved through iteration also helped. Such activities helped define the idea concepts better, bringing higher quality to the ideas and making them more realizable.

Bringing in a holistic service design focus for ideation

We strived to introduce a service design mindset for a holistic outlook, beyond the tendency of participants to primarily consider technology aspects, being part of a large IT organization. We used several constructs:

1. **CraftChange Empathy Square and ecosystem maps:** CraftChange Empathy Square (Mahamuni et al., 2019) encourages considering the concerns and constraints of key stakeholders—end-users, staff, service provider organization, and the society/environment. This construct combined with service ecosystem maps directed participants to think more holistically.
2. **Journey perspective—a pre-during-post frame of mind:** Participants were encouraged to think of problems and ideas from the frame of pre, during, and post-encounters. For example, while discussing ideas for employees wellbeing guidance, we encouraged deliberating on the pre, during, and post-stages. The themes selected for ideation also followed this structure. This helped in arriving at complete and detailed ideas. This aligns with the 'sequencing' principle of service design (Zomerdijk & Voss, 2010).
3. **Mapping ideas for enrichment on the journey:** Mapping preliminary ideas on the journey (as-is or to-be state) helped participants visualize the gaps to focus on.

4. **Leveraging the presence of expert stakeholders for nuances of the problem:** Workshop participants often included at least one domain expert (such as a doctor), or someone embedded in the problem (like the HR aware of employee issues). Group discussions meant for idea generation often intertwined with discussing nuances of the problem. These discussions helped form a better picture of the issues on the ground. As moderators, rather than dismissing such discussions to focus on ideation, it is useful to plan extra time to permit such discussions.

Reflections on challenges

While the ideation approaches helped generate ideas in high quality and quantity, we observed several challenges that ideation research can focus on, especially within the organizational context—for idea generation as well as facilitation:

1. **Commitment and prioritization:** Ideation exercises require people from various domains for successful outcomes. Organizational employees are often occupied in their day-to-day operations, and innovation activities are often attributed to extra work. Participants sometimes skip ideation sessions even after agreeing to participate. It is easy to drop out of virtual sessions with other meetings being considered a priority. Ideation workshops need to be engaging and interesting to retain participation.
2. **Preparing participants for ideation:** Many ideation participants are transactional contributors who have not been associated in prior stages of the design journey. Although the moderators share preparatory material before the workshop, participants find it difficult to study the material and to be on a similar level of knowledge as other participants. This impacts their contribution. Time is spent on reiterating the problems to address rather than generating ideas.
3. **Several facilitators for large workshops:** Advances in digital collaborative platforms have enabled ideation workshops with many participants. This requires further tuning of the workshop activities so that quality discussions can take place and participants receive an equal opportunity to contribute. We leveraged smaller break-out rooms digitally and this requires many additional facilitators instead of just one or two.

4. **Articulation of ideas:** participants tend to express written ideas abstractly, making them sound merely like wish lists or general principles without details. Sometimes a good idea is poorly articulated. Dean et al. (2006) consider specificity as one of the attributes of idea quality, with aspects such as explicitness, completeness, and clarity. We observed that the lack of specificity often stemmed from the time constraints in the workshop or participants' limitations in expressing themselves. Rather than considering the idea as poor we felt the need to provide an opportunity to develop the idea. Facilitators can be provided an assessment of the articulation so that they can guide participants to write well-articulated ideas. Multiple iterations to develop the raw ideas would also be useful.

Conclusion and Future Work

In this paper, we highlighted the need for democratizing ideation in an organizational setting for participants who do not have in-depth training in creative capability. We build a case for both 'quality AND quantity' of ideas, with appropriate methods for the participants. We discussed approaches that we attempted in several projects, showing that it is possible to engage many participants in remote ideation workshops effectively to generate high-quality and quantity ideas.

We recommend various strategies from our practitioner experiences across the various workshops, including 1) the need for balancing individual and group ideation activities in a single workshop to focus on both quantity and quality, along with planning and sequencing the activities in the workshop; 2) purpose-driven ideation, selecting the right approach and adapting it to suit the given business intent; 3) a quasi-participatory approach to ensure progress and productivity despite collaboration barriers in the organization; 4) the importance of conducting ideaenrichment sessions to enhance the quality of ideas and service concepts; 5) approaches to bring in the service design mindset during ideation.

We stress that ideation should not be looked at as just a one-off workshop, especially for complex and wicked problems, but as a journey—from selecting ideation methods, ready collection of exercises for ideation approaches, enriching ideas, and approaches to specify ideas technically for implementation.

In future work, we will systematically assess the need to explore specific ideation techniques for service systems considering the complexity of systems and the need for inclusion of designers and non-designers. We will explore the usefulness of

ideation technology and tools, especially considering the emerging landscape of AI—for example, to support the generation of ideas, clustering, and scoring. Another dimension to explore is the hybrid ways of working and collaboration (in-person and remote participation). The reflections in this paper were primarily based on ideation activities in a remote virtual setting within an IT organization. Explorations would be required to further validate the approaches, especially from the aspect of ensuring high-quality ideas, and managing their effectiveness.

References

Ancillo, d. L., Antonio, Núñez, M. T., & Gavrila, S. G. (2021). Workplace change within the COVID-19 context: a grounded theory approach. *Economic Research-Ekonomska Istraživanja, 34.1*, 2297-2316.

Avison, D. E., Lau, F., Myers, M. D., & Nielsen, P. A. (1999). Action research. *Communications of the ACM, 42*(1), 94-97.

Boddy, C. (2012). The Nominal Group Technique: an aid to Brainstorming ideas in research. *Qualitative Market Research, 15*(1), 6-18.

Briggs, R., & Reinig, B. (2010). Bounded ideation theory. *Journal of Management Information Systems, 27*(1), 123-144.

Covino, L., & Bianco, A. P. (2018). Service design in companies. *ServDes 2018* (pp. 227229). Milano: Linköping University Electronic Press.

Cross, N. (1982). Designerly ways of knowing. *Design Studies, 3*(4), 221-227.

Dam, R. F., & Siang, T. Y. (2020). 14 Barriers to Ideation – and How to Overcome Them. *Interaction Design Foundation*.

Dean, D. L., Hender, J. M., Rodgers, T. L., & Santanen, E. L. (2006). Identifying Quality, Novel, and Creative Ideas: Constructs and Scales for Idea Evaluation. *Journal of the Association for Information Systems, 7*(10).

Edvardsson, B. (1997). Quality in new service development: Key concepts and a frame of reference. *International Journal of Production Economics, 52*(1-2), 31-46.

Foglieni, F., Villari, B., & Maffei, S. (2018). How to (Re)Design Services: From Ideation to Evaluation. In *Designing Better Services. SpringerBriefs in Applied Sciences and Technology.* Springer, Cham.

Gerlach, S., & Brem, A. (2017). Idea management revisited: A review of the literature and guide for implementation. *International Journal of Innovation Studies, 1*(2), 144-161.

Girotra, K., Terwiesch, C., & Ulrich, K. (2010). Idea Generation and the Quality of the Best Idea. *Management science, 56.4*, 591-605.

Gobble, M. M. (2014). The Persistence of Brainstorming. *Research-Technology Management , 57*(1), 64-67.

Godin, D., & Zahedi, M. (2014). Aspects of Research through Design: A Literature Review. *Design's Big Debates - DRS International Conference 2014* (pp. 1667-1660). Umeå, Sweden: DRS.

Han, J., Shi, F., Chen, L., & Childs, P. R. (2018). The Combinator – a computer-based tool for creative idea generation based on a simulation approach. *Design Science, 4*(11).

Kelly, D. S. (2000). New service development: initiation strategies. *International Journal of Service Industry Management, 11(1)*, 45-63.

Keum, D. D., & See, K. E. (2017). The Influence of Hierarchy on Idea Generation and Selection in the Innovation Process. *ORGANIZATION SCIENCE, 28*(4), 653-669.

Kudrowitz, B. M., & Wallace, D. R. (2010). Assessing the quality of ideas from prolific, earlystage product ideation. *IDETC and CIE conferences 2010.* Montreal, Quebec Canada: ASME International.

Kurtmollaiev, S., Fjuk, A., Pedersen, P., Clatworthy, S., & Kvale, K. (2018). Organizational transformation through Service Design: The institutional logics perspective. *Journal of Service Research, 21*(1), 59-74.

Licuanan, B. F., Dailey, L. R., & Mumford, M. D. (2007). Idea evaluation: Error in evaluating highly original ideas. *Journal of Creative Behaviour, 41*(1).

Maaravi, Y., Heller, B., Shoham, Y., Moha, S., & Deutsch, B. (2020). Ideation in the digital age: literature review and integrative model for electronic brainstorming. *Review of Managerial Science*.

Mahamuni, R. (2020). *Crafting a Change - PhD Thesis.*

Mahamuni, R., & Ganwani, S. (2020). Congruence of Service Design and Business Value considering Digitally Connected World. *22stDMI: Academic Design Management Conference.* Toronto Canada.

Mahamuni, R., Khambete, P., & Punekar, R. M. (2017). Exploring Distributed Cognition as a Conceptual Framework for Service Design. *International Conference on Research into Design* (pp. 959-972). Springer.

Mahamuni, R., Mantry, S., & Jadhav, M. (2021). Bridging the Gap Between Service Design Specification and Technical Specification. In A. Chakrabarti, R. Poovaiah, P. Bokil, & V. Kant (Ed.), *Design for Tomorrow—Volume 2. 2*, pp. 79-90. Springer.

Mahamuni, R., Meroni, A., Khambete, P., & Punekar, R. M. (2019). Empathy square: an aid for service design for behaviour change to support sustainability. *3rd LeNS World Distributed Conference.*

Mahamuni, R., Sharma, S., Lobo, S., Hirom, U., & Khambete, P. (2018). Quasi-participatory service design in organizational context: A case study. *ServDes 2018.* Milan.

McKinsey. (2020, January). *Workplace learning during coronavirus.* Retrieved 2022, from https://www.mckinsey.com/business-functions/people-and-organizationalperformance/our-insights/adapting-workplace-learning-in-the-time-of-coronavirus

Peters, D., Loke, L., & Ahmadpour, N. (2019). Toolkits, cards and games – a review of analogue tools for collaborative ideation. *International Journal of CoCreation in Design and the Arts*.

Puccio, G. J., Firestien, R. L., Coyle, C., & Masucci, C. (2006). A Review of the Effectiveness of CPS Training: A Focus on Workplace Issues. *Creativity and Innovation Management, 15*(1), 19-33.

Reinig, B. A., & Briggs, R. O. (2013). Putting Quality First in Ideation Research. *Group Decision and Negotiation, 22*, 943-973.

Sanders, E. B.-N., & Stappers, P. J. (2014). Probes, toolkits and prototypes: three approaches to making in codesigning. *CoDesign, 10*(1), 5-14.

Shah, J. J., Smith, S. M., & Vargas-Hernandez, N. (2003). Metrics for measuring ideation effectiveness. *Design Studies, 24*(2), 111-134.

Siemon, D., Rarog, T., & Robra-Bissantz, S. (2016). Semi-Automated Questions as a Cognitive Stimulus in Idea Generation. *Hawaii International Conference on System Sciences (HICSS).* Koloa, HI, USA.

Steen, M., Manschot, M., & Koning, N. D. (2011). Benefits of Co-design in Service Design Projects. *International Journal of Design, 5*(2), 53-60.

Stickdorn, M., & Schneider, J. (2010). *This is service design thinking.* Amsterdam: BIS.

Stickdorn, M., Hormess, M. E., Lawrence, A., & Schneider, J. (2016). Ideation based on analogies and association. In M. Stickdorn, M. E. Hormess, A. Lawrence, & J. Schneider, *This is service design methods - a companion to this is service design doing.*

Yang, C. F., & Sung, T. J. (2016). Service design for social innovation through participatory action research. *International Journal of Design, 10*(1).

Zomerdijk, L. G., & Voss, C. A. (2010). Service design for experience-centric services. *Journal of service research, 13*(1), 67-82.