



Design as a strategy in software startups

A roadmap to extract value from Design

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Abstract

Studies conducted by academics and business professionals suggest that design could be crucial in fostering business strategy, organizational growth, and technology advancement. Many startups, nevertheless, have struggled to integrate design into their framework. It may be because design management is only seen as planning for design assets and design roles are only seen as aesthetic skills, both of which lead to underexploring design values and underestimating its significance.

This research studies on three distinct software startups. Following a thorough examination of their design process, they were deemed to be design-oriented, manifesting the effective and efficient application of design throughout the organization at different levels of design management.

Entrepreneurs should have a comprehensive understanding of design's intangible and tangible qualities in order to effectively use design in practical situations. At the three fundamental levels of design management, design values are broken down into six categories: brand development and organizational culture at the tactical level; business development and performance measurement at the strategic level; and value-added deliverables and operational productivity at the operational level. All of these are associated with the user-centered approach and might be crucial to the expansion of the startup teams.

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I. Introduction

Background

Pandemic has had an unprecedented impact on people's lives, affecting practically every industry. It stressed the significance of digital transformation, accelerating software's metamorphosis into the primary engine of enterprises, boosting demand for software solutions, and acting as a catalyst for software industry and startup growth. Along with customers' growing expectations for digital products and services, software startups have paid attention to the impacts of design and see design as an effective approach in advancing the customer centricity of software products. However, many people have attempted and failed to incorporate design into their systems, and the values of design are not fully explored.

Objective

The study's objective is to explore more thoroughly at how design could be used as a strategy to assist software startups grow and sustain themselves through creative design management, as well as to assess the value of design in encouraging their business development process. The audience will gain an understanding of how startup teams apply design principles and methodologies to the actual environment at strategic, tactical, and operational levels to achieve their goals by studying three design-oriented software companies developing their software products successfully during their startup stages.

The finding of the research may be relevant to various key stakeholders in the startup ecosystem. Founders and senior executives will have a better grasp of the value of design for different departments, which will aid in strategic planning and wiser judgments regarding design investments and resource allocation. When making selections about their careers, design professionals can have clear direction on the roles and duties of designers in software startup settings, working procedures, and prospects for extending their options. Cross-functional teams could collaborate closely with design teams to acquire the design skills necessary for a project's success. While design consultancies and other service providers from the outside sector might pick up on design requirements and skills from the software industry and start-up ecosystem, opening doors for new services and improved collaborations.

Structure

A total of four sections makes up the research. The study's origins and goals are described in section one. The necessary ideas and concepts are covered in section two. It comprises core design ideas and the nature of software startups. Within the context of a software startup, the third section examines instances to assess the impacts and values of design. The last section summarizes the study results and provides recommendations.



II. Literature study

Software startups

The term "startup" is becoming more widespread. According to Steve Blank (2013), a startup is a temporary organization in search of a validated and scalable business model without prior working experience. Eric Ries (2011, p. 27) characterized a startup, rather than a formal corporation, as a human institution created to generate a unique product or service amid tremendous uncertainty.

A startup relies on people, innovative products and services, and unpredictability. Startups, in comparison to established firms, operate in unexplored terrain and require validation. All medium and large firms that have reached a certain level of stability should be excluded (Thiel, P., 2014, p.10). As a result, in the early stages of development, startups must deal with a chaotic and volatile environment; their workflows are characterized by trial and error, from which lessons can only be learned for dealing with business uncertainties such as customer behavior, product-market fit, essential product features, and so on (Graham, P., 2012). Recognizing key startup features such as novelty, scalability, agility, rapid growth and instability aids in determining which core elements impact a company's business strategy, thereby possibly boosting the roles and values of design in an organization.

Despite various success stories, research has revealed that the majority of companies fail. Understanding the most prevalent causes of launch failure allows us to identify areas that need improvement. Startups, being new business ventures, frequently operate in an unstable environment, which increases the likelihood of failure. Furthermore, the major reasons for their high failure rate and inability to scale up are generally linked to businesses running out of funding, a failure of product-market fit, and being outpaced by rivals (CB Insights, 2021), which might be the outcome of having the wrong business strategy.

To define the scope of software startups, it is necessary to identify the role of “software” in their value propositions. According to Steininger's definition (2018) of four ways that software is relevant to startups: software-facilitated, software-mediated, software-bearing, and software ubiquity; software startups might have software products as their primary value proposition or software as an essential piece of their products or services.

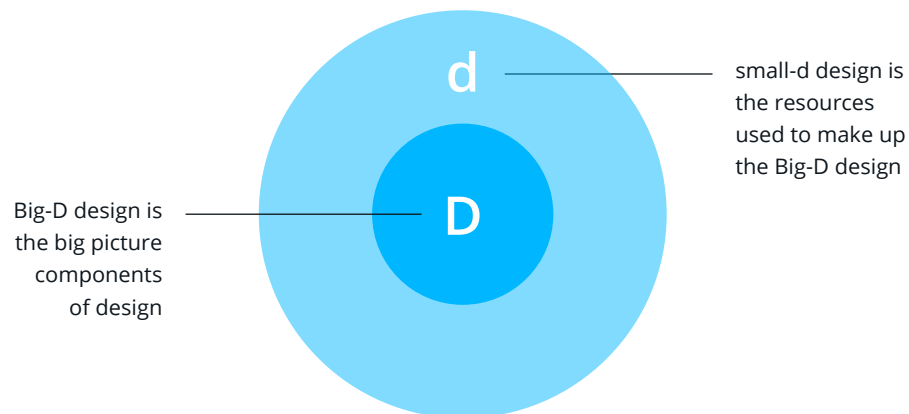
The demand for Software as a Service (SaaS) solutions has been booming by 18% each year, and almost 80% of businesses now employ at least one SaaS application (Shiff, L., & Kidd, C., 2021). SaaS is a software distributed architecture in which programs are managed by third-party vendors and distributed to clients on a subscription basis through the Internet. B2B SaaS clients are mainly enterprises, whereas B2C SaaS customers are application end-users (Elban, C., 2022). Modern software and system development often does not adhere to any strict blueprint and instead adopts various hybrids (Tell et al., 2020, p.105).

Thus, the study will focus on the typical SaaS startups, which have the capacity to become a high-growth, profitable firm by entering a huge market with software as its primary value proposition and service, and is backed by a group of talented and dedicated people who are willing to take an enormous risk in a flexible workplace and strive to innovate autonomously with limited resources.

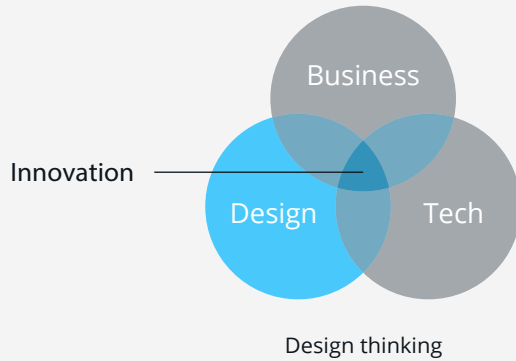


Design

There are a few known definitions of design. Big-D design and Small-d design are two main types of design that are interdependent. Big-D design exemplifies holistic design thinking, which attempts to discover issues that may be improved and to create intangible experiences via design. The quality of such thinking is argued as a key to managing organizational success. Small-d design, on the other hand, illustrates designers' practical design effort to build tangible artifacts in such disciplines as product and communication design (Holland, R., & Lam, B., 2014b, pp.25-27).

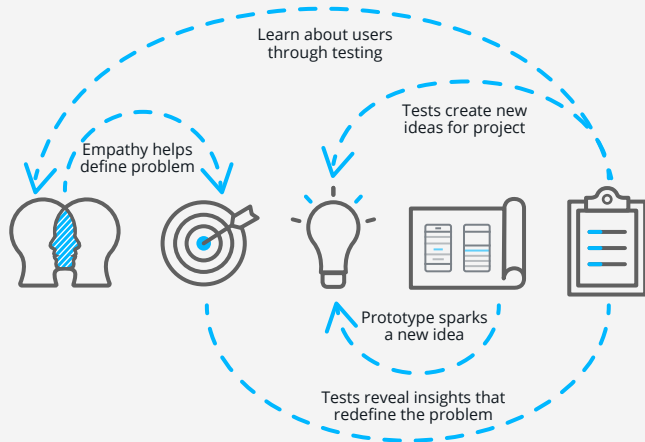


A relationship between Big-D design and small- d design



Strategic and design thinking are both holistic, goal-oriented and creative. Design thinking, according to IDEO's Tim Brown (2008), focuses on human-centred innovation that can be extended to include all businesses by combining people's demands with business viability and technological feasibility, that can transform into consumer value and market opportunities.

It starts with Big-D design to develop a theoretical idea and offer a clear vision, and the output is used by small-d creative practical designers to turn into real tangible solutions in a non-linear, iterative and quick leading process that teams use to research users' needs, outline hypotheses, redefine the core problems, and generate innovative ideas and validate them by prototype and test (What is Design Thinking?, n.d.).



Design thinking process

Strategic thinking is regarded as a thorough plan of action created to reach long-term goals. It is about synthesis, combining creativity and systems thinking to articulate a vision or new ideas. It commences with a systematic strategic planning analysis, breaking down business goals into multiple objectives, then planning how each objective may be attained and developing the process (Mintzberg, H., 1996). So strategic managers are argued to incorporate Big-D design into their thinking for sustainable value creation and distribution.

As an organization matures, design issues expand in breadth and scale, and the application of design gets more complex. People's perceptions of design have also changed significantly. The traditional concept of material artifact has given way to intangible experiences, from single interactions to system transformation. In this analysis, design is regarded as a strategy; it is a tool and method of problem solving used to develop long-term value propositions for the ecosystem of organizations that are scaling and growing.

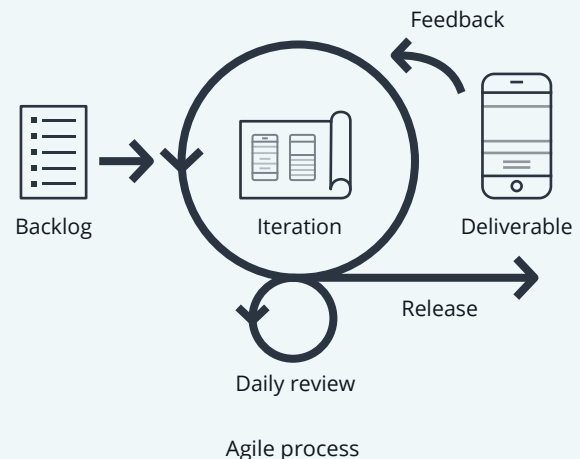


The merging of UX, Lean startups and Agile software development

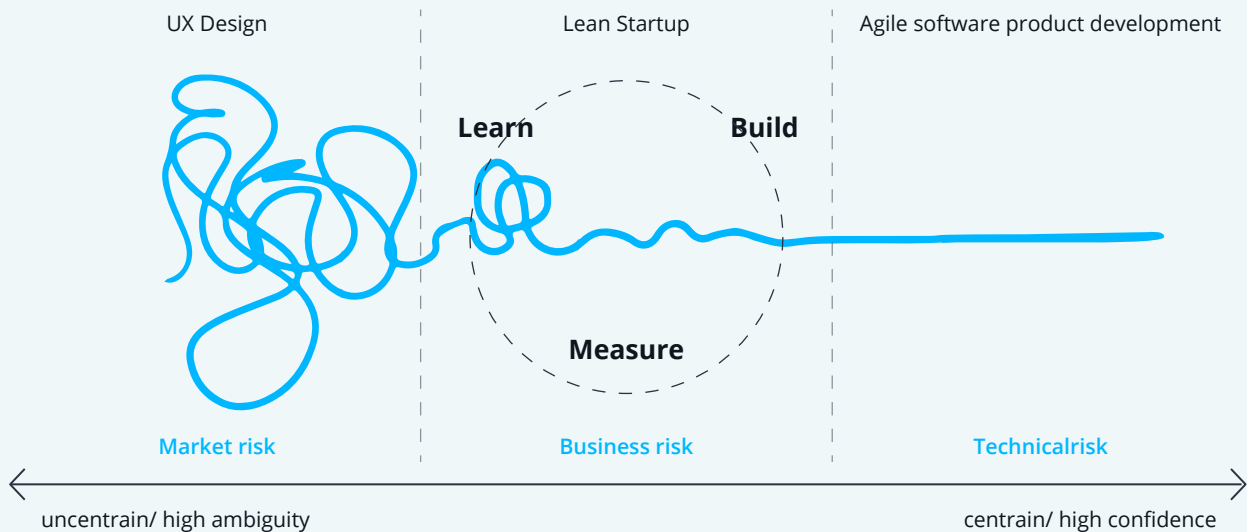
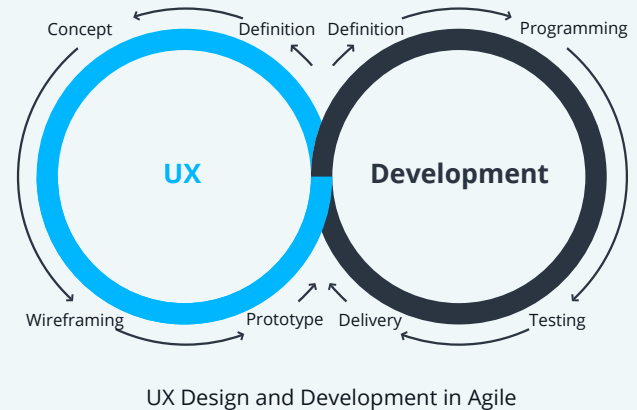
User-Centered Design (UCD) refers to a collection of practices that put the user at the center of product design and development (Babich, N., 2021), whereas User Experience (UX) focuses on a particular user experience after using a product. As more organizations adopt digitalization, user experience is becoming increasingly crucial in various sectors. User needs and desires are prioritized, and every design decision is evaluated in terms of whether it adds value to the user (Hokkanen, L., 2019). Software startups are increasingly focusing on end-user interactions and attempting to portray themselves as consumer-led businesses.

Lean startups strive to minimize product development cycles and quickly determine if a proposed business model is sustainable, with an emphasis on creating hypotheses about businesses and performing experiments to evaluate them. A core notion of the strategy is the Minimum Viable Product (MVP), which is defined as a version of a product with just enough functionality to be usable by early consumers (Gothelf, J., & Seiden, J., 2016, p.9).

When it comes to software development, Agile is an iterative approach to developing software products that concentrates on quickly releasing a MVP and then modifying and adding features and functions in phases depending on user behavior and feedback. Agile practices include requirements discovery and solution improvement by cross-functional teams working collaboratively with their customers, adaptive planning, evolutionary development, early delivery, continuous improvement, and flexible responses to changes in requirements, capacity, and understanding of the problems to be solved (Gothelf, J., & Seiden, J., 2016, p.10).



The merging of UX with Lean startups and Agile methodology would be beneficial in innovation governance, managing the product's design and research efforts. It will also assist in short development cycles, collective judgment calls, higher productivity, quick feedback loops, and iterative development. Through continually divergence and convergence, the team moves from high ambiguity to high certainty, allowing the company to efficiently address changes and minimize risk (Creque, S., 2021).



The innovation process “fuzzy front-end” between UX Design, Lean Startup, and Agile development

Business design

Design in business has gained a new urgency as a result of rapidly changing markets and evolving technical capabilities. Pure design thinking may fall short of developing a long-term business strategy. However, business design may assist lean implementation of business models by embedding strategic thinking within design thinking. It enables business owners and executives to think creatively about and grow their company strategy. The systematic approach allows for the evaluation of the viability of new ideas with limited resources, which will be a critical competence in the future in an expanding market.

Design possesses four roles and values in business (Mozota, B. B., 2010):

- Design is a differentiator, which provides market competitive benefits in terms of corporate branding, customer loyalty, brand identity and price;
- Design is an integrator, which supports the innovation process by enhancing new product development processes, shortening time to market, and achieving consensus in teams using visualization skills;
- Design is a transformer, which assists business owners in generating new business opportunities and increasing the firm's capability to innovate;
- Design is good business because it could boost sales, improve profits, raise brand value, expand the portion of a market, and increase return on investment.

In other words, design values are thoroughly incorporated into the business value model. Through design, businesses can redefine business models and create significant competitive advantages that the market will embrace.

Design management

Design has the potential to provide considerable benefits in the commercial world. In actuality, some organizations may successfully utilize design to outperform their rivals, while others struggle. Design, with its very intangible values and implications, may make it challenging for startups to adapt design to operations in reality. Some of them believe that design is only art skills and that design management focuses solely on the planning of design assets. Founders and senior executives oversee design in the same manner they manage other resources, therefore poor design management results in wasteful design utilization and low design quality.

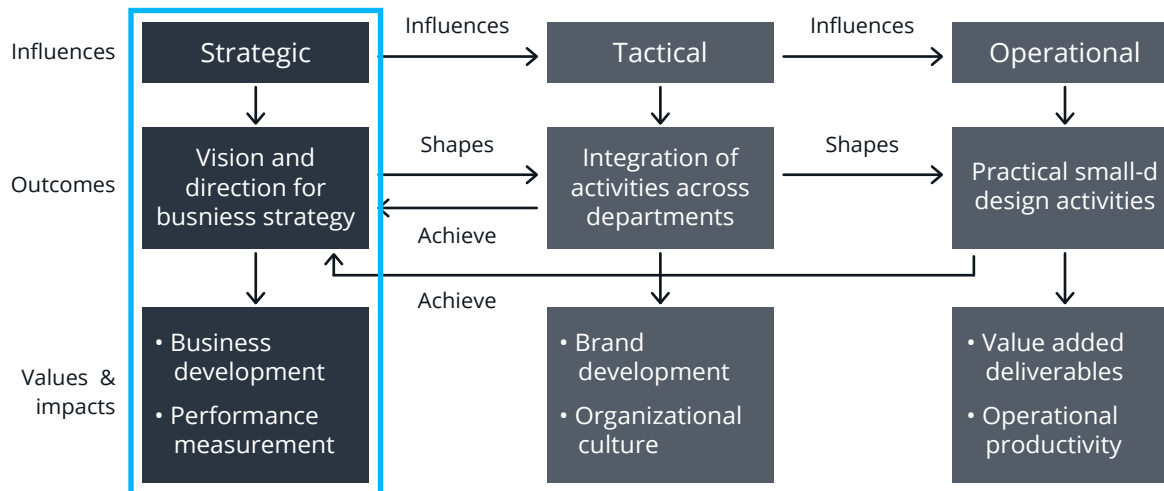
The extent to which design plays a role in the formulation of management strategy is determined by the organization's approach. Design management is the process of establishing agendas for design in an organization, including objectives and purposes, and ensuring that design is an integral part of all levels of management: strategic, tactical, and operational (Cooper, R., & Press, M., 1995). Design management is used to drive and achieve business strategic goals through strategic design. It develops vision and integrates and orchestrates cross-disciplinary cooperation in order to provide real value to all stakeholders through innovative solutions to corporate values (Mozota, B. B., 2003). Good strategic design management should infuse design into the organization to have everyone thinking about and applying design; this also implies that design is no longer the exclusive domain of design professionals.

Startups can successfully extract values from design that benefit their ecosystem by applying design management strategy at the strategic, tactical, and operational levels. In the next section, the study employs a roadmap to illustrate what values and outputs of design are built at each level of design management.

III. Adoption of design in software startups

Design values at strategic level

This is where design operates at the top levels of the organization, with the design strategy focusing on design vision and the organization's impact on its contexts. It has the power to transform the organization's direction, generate new thinking about the organization as a system and what it offers, and evaluate alternative design directions and risks to support strategic management decision making (Holland, R., & Lam, B., 2014b, pp.35-37), all of which are beneficial in reducing the risks that startups may face when dealing with uncertainties.



The roadmap to extract value from Design at the strategic level

Big-D design incorporating strategic thinking provides the vision for successful design usage and planning for design activities, providing management with a more integrated view of the business. Clear directions are applied for small-d design, which results in pragmatic design solutions. Strategic design visions are created by challenging soft system thinking and excellent design research, which includes the analysis of external and internal design trends and data, as well as the debate that precedes decision-making.





Funzi is a Finland-based award-winning mobile learning service. The firm was formed in 2014 as a B2C/B2B2C SaaS startup. It uses mobile technology to provide high-quality courses to consumers in Asia and Africa, making learning available anytime and more accessible to everyone via any mobile device (Funzi: About us, 2022).

Funzi's business model is unique and offers competitive advantages that make it difficult for competitors to replicate. It enables scalable direct access to consumers while also assisting existing education institutions in the digitization of learning. This capability puts it in a unique market position. Funzi builds mobile learning courses from its partners' existing base learning content, such as the United Nations, NGOs, and public organizations, in order to provide affordable paid and free courses with high-quality educational content. These resources are transformed into a user-friendly and entertaining mobile service using a fast and proven approach, as well as gamified mobile pedagogy. Course design and delivery generally take less than a month, with no technological development required to provide excellent learning to millions of people.

Business development

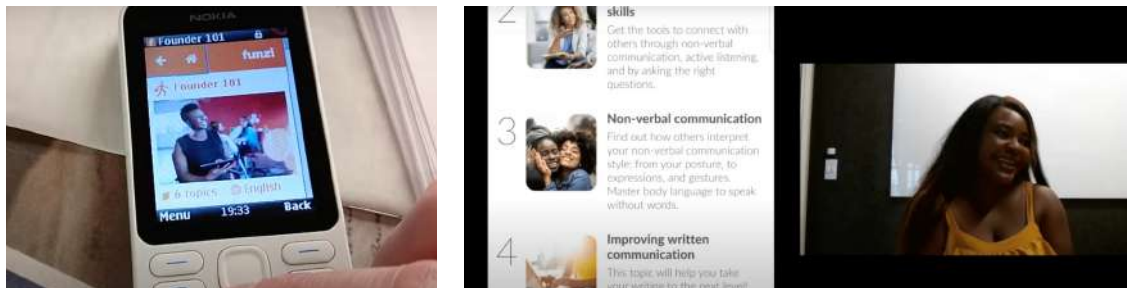
Funzi is an excellent example of an organization that recognizes design as a valuable resource and incorporates it into company growth and performance measurement. All key staff in all departments, from R&D to sales, understand and effectively employ design and research. In the company, design is definitely a way of life.

Funzi's Chief Product Officer and Co-Founder is an experienced strategic designer and thinker with a focus on design leadership. He oversees all aspects of design within the startup, determines the organization's long-term design strategy, and effectively communicates it both internally and externally. The CXO organizes a series of workshop sessions with the design team to go through the analytics on a daily basis and identify potential improvements for the needs of learners in order to create the best learning service. Every day, the team gets closer to the ultimate objective of providing free education to everyone on the planet. The CXO leads the design team, which routinely collaborates with the product, data, content, marketing, and sales teams to create and perform more than twenty experiments a year to optimize internal processes and the customer journey (Vahisalu, T., n.d.). The combination of in-depth education research and the implementation group makes Funzi a success.

Funzi has strategic planning in allocation and quality control of the sharing of the resources and output of production. To guarantee product-market fit, the organization employs a design management approach, research methodology, and strategic thinking. Funzi engages with local expert partners to adjust content to local contexts and requirements in order to provide courses that are relevant to learners. Course content is an essential element of their business strategy; to ensure that the content is appropriate for their target audiences, the company maintains a regular connection with external design consultants to continue learning from real users, and adjusts their business plans based on customer research and A/B testing findings. When the Funzi team has cultural and geographical distances with their consumers, the role of the consulting is vital. The Funzi team may also acquire fresh insights on the latest trends from an external source.

Expanding market share is one of Funzi's primary goals, and design research is a very effective approach for them to validate their idea and hypothesis, uncover potential for development. Funzi, for instance, planned to launch their direct sales offering in South Africa with premium courses. To refine a new solution for the existing market, the startup employed a top local UX design and research consultancy to undertake user research and testing (Experio, 2020).

To have a deeper understanding of South Africans' motivations, attitudes toward learning, and engagement with technology, it is vital to build physical and cultural ties with their user-base. Traditional marketing research methods, such as questionnaires and surveys, may not be effective for assessing real user experiences. In-depth interviews with individuals from Funzi's target learner base were conducted by design researchers and live-streamed to the Funzi team in Helsinki. This helps to validate and expand Funzi's understanding of their target profile for the company when the market dynamics change.



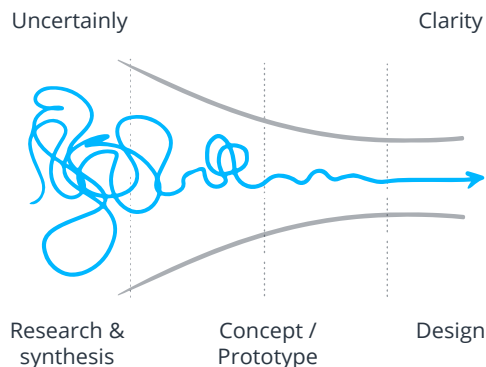
Live streaming of user research and test
(Experio, 2020)

They conducted card sorting exercises to determine what content users felt was the most valuable, and executed concept testing with numerous conceptual prototypes to observe people's reactions to content, which revealed misconceptions, content highlights, and usability difficulties. Finally, diverse user personas were gathered to ensure that the solutions supported different user scenarios. The entire procedure is iterative and based on fast learning in order to discover the unknown.

The data gathered from observations, interviews, user studies, and brainstorming is returned to the Funzi team, providing different key stakeholders from design, product, content, marketing team with new perspectives and insights to facilitate effective communication, analyses and enable them better decision making, resulting in the teams having a common understanding of their specific market. It supports Funzi in making essential modifications and minimizing risk prior to launching a pilot course in order to continue with their marketing promotional strategy, which was a big success.



User research and test
(Experio, 2020)



Such design principles and research methodologies help the teams to make design and business decisions based on facts rather than intuition and preconception, and from the user's perspective rather than the e-learning provider's. That effectively assists Funzi in predicting the future market and demands of users during the fuzzy front-end of product development, and reducing a maximum uncertainty during planning.

Performance measurement

Design, as one factor in determining a company's profitability, can also be used to evaluate corporate performance. Establishing appropriate measurements that represent the business context and goals enables the design team to demonstrate that the design has a beneficial influence on business results (Dalrymple, M., et al., 2021).

Design is widely recognized as intangible and difficult to evaluate and control. In the software sector, some organizations place a greater emphasis on behavioral indicators like conversion rate and retention rate than on attitudes like contentment or perceived ease of use. At Funzi, design is subjected to the same high standards as all other functions. Their design philosophy is data-driven, which promotes customer-centricity by assisting the design team in better understanding the needs and pain points of its clients.

To assess the impact of design, Funzi combines various measurements to get a right balance in measuring attitudinal and behavioral metrics (Funzi: Mobile Learning for Everyone, 2017). They conduct UX audits on a regular basis to detect problematic aspects that make customers abandon their learning journey and leave, and establish relevant metrics that track changes in user sentiment, indicating whether or not their consumers are satisfied with the service.

The startup creates clear procedural guidelines for cross-functional teams with reporting systems, based on the specified key business metrics. Evaluating the performance of a business is more than just how many activities the firm is performing on the sales front; whether consumers actively attend the course and complete it within the expected timeframe are extremely crucial indications of the product KPIs.

The team routinely analyzes and assesses design performances against set objectives by collecting behavioral data, such as user activeness, time spent on courses, the rate of completion, and others, by keeping track of user behaviors when engaging with their products. Satisfaction ratings and usability assessments are also their design metrics. They collect attitudinal data that includes appearance, ease of use, trust and loyalty by asking about users' feelings, and sayings prior to, during and afterward using the product.

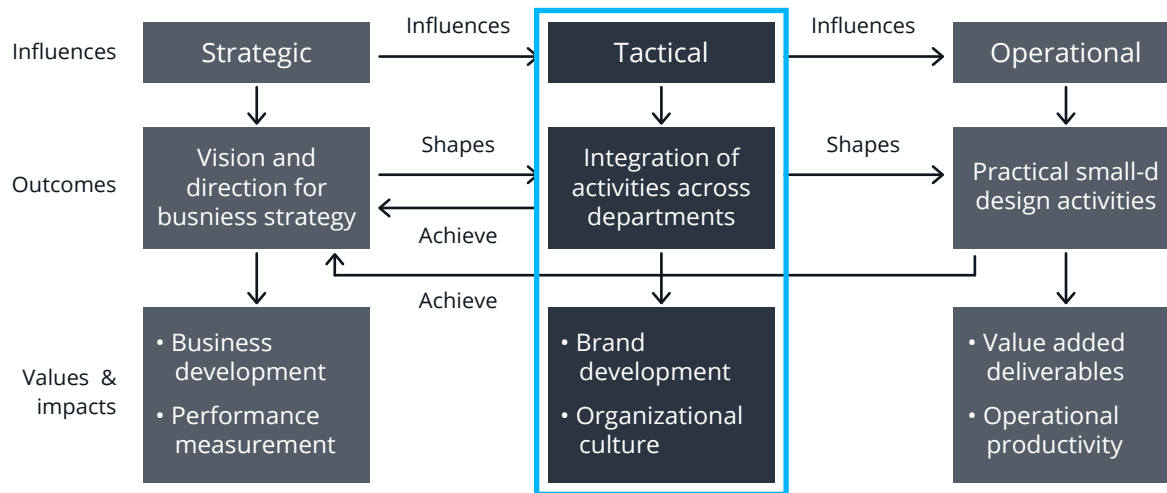
As a result, the design team is forced to rethink and reinvent the customer experience in order to improve desirability and usability, resulting in incremental innovation during the software development and maintenance processes. Funzi's journey to create a digital learning service has been filled with trial and error, successes and failures. The existence of design management offers the startup with a powerful tool for extensively assessing performance and frequently learning from mistakes and adjustments. It also provides insights into the entire performance of their products, which demonstrably propels their business forward and may boost the organization's innovative and competitive capabilities.

At the strategic level, all key stakeholders in a startup formulate plans based on corporate goals to support and complement the organization's long-term strategy. Design strategy is closely related to business and marketing strategy; which facilitates the creation of business opportunities and the expansion of market share, the measurement of business performance and user satisfaction, the improvement of the company's ability to adapt to changes, and thus the enhancement of the enterprise's market competitiveness. As a result, design produces an impact on organizational strategy and has emerged as a critical resource for survival and competitive advantage.

It also demonstrates how effective design strategies are implemented by a design leader who is adept in strategic thinking and design management. In addition, the manager can urge top executives to prioritize design and devote resources to design strategy. Big-D design and design management contribute to the development of the organization's design vision, which serves as a guide for design activities. It influences tactical and operational planning and implementation to guarantee that design values are delivered to the whole startup.

Design values at tactical level

The design strategy at the middle level focuses on supporting the organization's objectives and achieving the design vision. It is an integrated method for the startup to deliver its offerings. Because design is a function that supports effective management by stimulating and integrating activities across departments, it has an impact on all surrounding activities. It is involved with the planning of functions in order to produce design value (Holland, R., & Lam, B., 2014b, pp.37-40).



The roadmap to extract value from Design at the tactical level

To achieve a clear alignment and correlation between design and organizational objectives, a robust bridge from strategic to tactical is required. Design is subjected to a set of standards and expectations to minimize misinterpretation and confusion amongst cross-functional teams.



WORK NICE BALANCE



Holvi is a digital banking solution that combines bookkeeping and money management in a simplified user interface for freelancers and entrepreneurs. Users may tie several accounts to their profile and monitor their funds status (Holvi, 2022). The company offers the Holvi Business Mastercard®, digital invoicing, accounting preparation and the Holvi app to facilitate the management of customers' business finances. The new solution enables customers to handle invoicing as well as run an online store from a single, integrated digital platform.

The firm is a B2B SaaS startup founded in Helsinki, Finland in 2011, and was acquired in 2016 by the Spanish banking corporation BBVA (BBVA acquires digital Banking Startup, 2016).

Brand development

Holvi is a perfect example of how to incorporate design into brand values and corporate culture. Through the use of a design management strategy, the company grew to become one of Europe's most popular digital banks (England, J., 2021).

Holvi design team is led by an experienced lead designer and collaborates with top design agencies to maintain a well-designed experience of their services, culminating in the transformation of their value proposition to production values. The head communicates with top management on a frequent basis to understand and integrate design and strategic business objectives.

The design team makes effective use of both tangible and intangible design to achieve organizational goals. Their major objective is to develop seamless user experiences with a unified approach in online banking and business management on a single digital platform, eliminating the distractions of financial administration and simplifying work life.





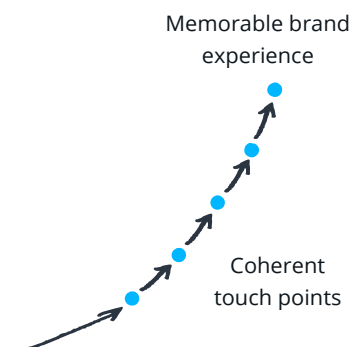
Holvi's products and advertising photos (Holvi, 2022)

From a tangible perspective, the tagline "Work Nice Balance" describes their solution, which unifies the key business processes into a single platform and offers a true work-life balance for their target clients, such as freelancers; The logo is the key visual component of their identity, and its design starts with the vault shape, illustrating the growth of an idea and ultimately a successful business to convey the message "it starts with an idea." A fascinating tale can be visualized as follows: Entrepreneurs that use Holvi's efficient services may concentrate on what matters most while freeing up time for vital tasks.

Intangibly, the brand's design represents their primary offering of "all in one place" by developing intuitive and engaging experiences to deliver a seamless solution of all business account management integrated into one platform. The design concept eliminates all potential customer frustration points and allows consumers to effortlessly connect with Holvi. The design highlights this innovative business banking's unique selling point and brand tonality, which distinguishes it from other banks that are difficult and time consuming for businesses. The core values are precisely reflected in all sensory touch points of the customer experience. To deeply understand their target audience's feelings towards the brand, Holvi measures the success of brand building initiatives using brand tracking (Holvi: Brand Awareness, 2021), and modifies the solutions if there is any gap between the strategic and operational brand strategy.

Brand strategy should provide a memorable brand experience via coherent touch points (Allen, D., 2010). The brand, its experience, and its offerings mirror the corporate DNA's ethos: "simplify your life with Hovli." They build meaningful relationships with customers through tangible elements and physiques such as the logo and strapline, as well as intangible smooth service experiences, and a straightforward, friendly, and professional brand attitude. Memorable brand experiences increase credibility and long-term consumer recognition over time, increasing the likelihood of winning clients, earning considerable competitiveness, and standing out in the saturated banking sector. Big-D design defines brand values to ensure a clear vision for small-d design, which develops tactics to offer real benefits in a balanced manner.

The importance of brand building in software businesses is often neglected, yet a polished brand obviously provides entrepreneurs a significant edge. It may build brand awareness, attract possible investors, and customers to obtain a concept of the product, service, and organization in the early stages of startup development. It also assists startups in projecting a higher level of company maturity, leveraging their market position, increasing credibility in order to obtain confidence from investors and consumers, and benefiting from talent recruiting. When the startup has expanded significantly, design is employed to improve brand consistency for enhancing brand loyalty and values on future performance.



Organizational culture

Holvi uses design to build company culture. Rooting design in corporate culture comes before business outcomes; it leads them culture-first to accomplish numerous achievements, enhance productivity, agility, employee engagement, and creativity. Organizational culture is commonly referred to as "the way we do things around here," as described by Charles Handy (2005). It encompasses visions, ideals, shared behaviors, and systems. Culture governs the actions of all members of an organization, whereas culture is made up of the causes and conditions that allow innovation to function. As a result, it promotes innovation development and management within the ecosystem.

Holvi focuses on using design to create a human-centered, balanced, and open culture in the organization that aligns with its mission of "Work Nice Balance." To achieve the corporate primary goals of flexibility and growth, the company fosters an inclusive and open atmosphere that allows for varied opinions and working styles (Holvi: Do the work that matters to you, 2022), allowing for creativity at all levels. Every employee is encouraged to communicate openly, to experiment with new ideas, and to freely share them.

Design also instills empathy in the organization and fosters a culture in which employees make business decisions from the perspective of their customers, pay more attention to how rivals delight consumers, and consider users' pain points of money management in the digital environment. The culture promotes a customer-focused design attitude among employees, which reinforces the startup's reputation as a customer-focused organization. Holvi develops trust and credibility with investors and outsiders by providing an image that understands design ideals and demonstrates commitment to solving user issues, which assists in obtaining funding as well as acquiring new clients.

The team often joins innovative activities such as hackathons to inspire new ideas and challenge soft thinking. Designers are welcomed at Holvi as facilitators who use design methods and principles to promote brainstorming and facilitate discussions with cross-functional teams in order to help them get familiar with design thinking. This, in turn, improves various stakeholders' awareness of the roles and status of designers. Once design is understood as a part of the working and software development cycles, it is simpler for designers to participate in decision making early, connecting design directly to business strategy and other critical activities. Involving a design aspect engaged from the beginning of the firm has also made sure that every member on the team naturally has the tendency to be user-centered and pay attention to details while working with products.



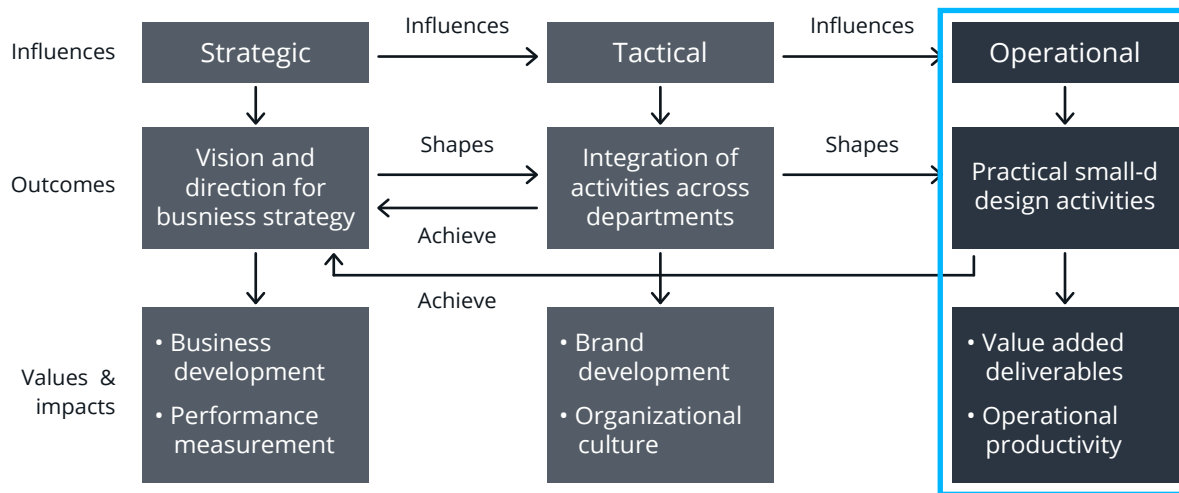
Design Thinking workshop
(Holvi: facebook, 2015)

Establishing a customer-centric culture also necessitates the collection of relevant data to inform the organization about what its consumers are thinking. At Holvi, the head establishes data-driven design processes and design effectiveness reviews for all internal and external designers, allowing them to make quick decisions based on accurate data insights and assisting the company in forecasting the future by using past and current data, reducing the risk of making false assumptions and being swayed by biased opinions. To optimize the work effectiveness of the design team, the head additionally implements a data-driven design routine to boost the agility of designers and allows himself to more efficiently scrutinize internal workflow (Vanamo, J., 2018).

At the tactical level, design is used to support the organization's objectives; good design management aids in the delivery of design values, shaping brand image, and establishing organizational culture that enhances brand identity, employee engagement, and work effectiveness, all of which contribute to the company's success. It also directs businesses to make adjustments or adapt the strategic and operational design strategy.

Design values at operational level

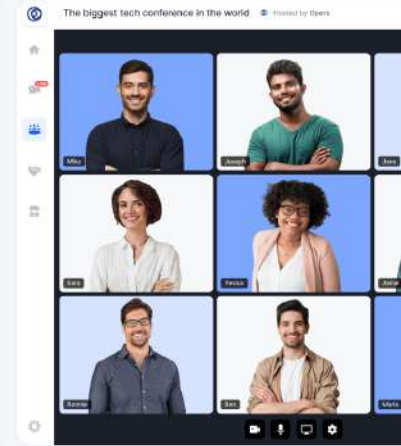
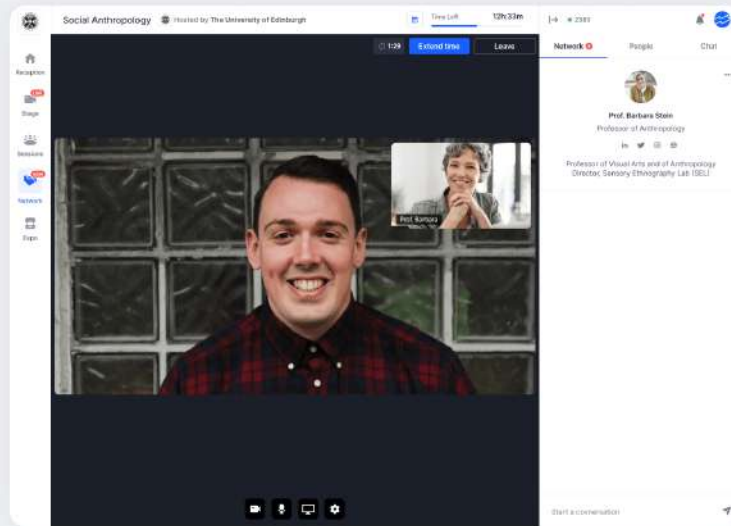
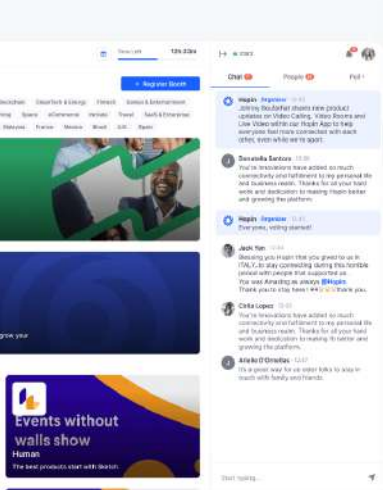
This is where design operates at the bottom of the organization, with the design strategy focusing on practical small-d activity and execution, as well as real designed experience for solution delivery. "Hands-on" designers are employed to build exceptional UX products and services that understand company values and provide user satisfaction (Holland, R., & Lam, B., 2014b, pp.40-41). At this stage, the whole strategy approach is focused on providing every user with a fulfilling, delightful, and memorable experience.



The roadmap to extract value from Design at the operational level

This level is equally crucial to the strategic and tactical levels in the overall strategic approach, since if this stage work fails, the rest of the strategy and procedure are a waste of time. The desired conclusion of this stage is to generate added-value goods and services if creative designers are involved in the full growth of organizational design philosophy and development and are able to strike a balance between financial limits, agreed-upon timescales, and high-quality UX.





Hopin is the first all-in-one online event management software designed to bring people together in a digital world. With live video, chat, and networking capabilities, its web-based virtual arena unites distant groups, businesses, and friends (Hopin: About Us, 2022). The company was established in 2019 in London, England as a B2B and B2C SaaS venture. Hopin's private market valuation in 2021 was \$7.8 billion, and its revenue growth rate was 24900%.

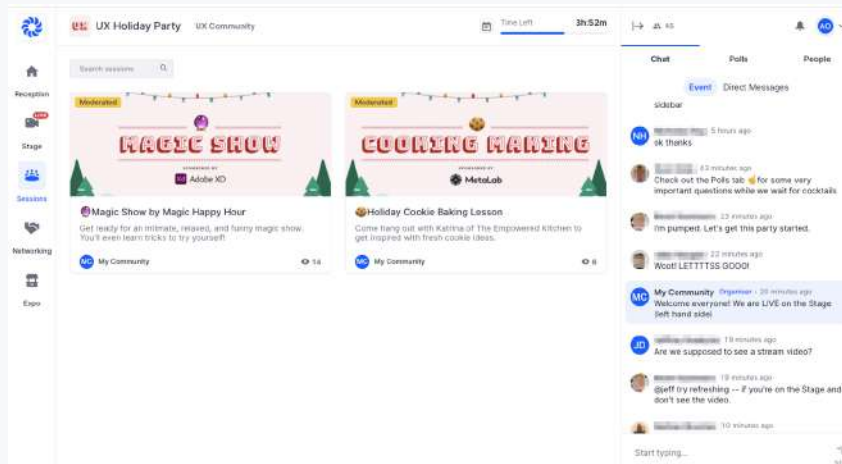
Hopin launched a ground-breaking platform for digital events back in 2019, introducing a new people-first strategy to online meetings. Many businesses have changed their minds about how they approach conferencing solutions as a result of COVID. Hopin moves at the speed of light due to this, among other things. The business maintains the highest standards of quality in its job output even while working under time constraints. The company has developed a quick-paced culture, considering speed to be both a quality and the most economical approach.

Hopin is structured into small teams, with a designer, a product manager, and many developers on each product team. The product team is in charge of defining the functionality and improving the products' appearance through design and technology during an agile iteration. All Hopin ideas must be translated into tangible assets by UI/UX designers. The company operates entirely remotely, with designers truly dispersed all over the world. Each designer works alone on one project, which gives them a lot of autonomy and ownership.

Value added deliverables

Hopin is a good demonstration of employing small-d design to provide value to items beyond their functionality and usability. Their intuitive UX provides users with seamless interaction between online and physical events, thereby differentiating Hopin goods from competitors and convincing customers to continue using their services.

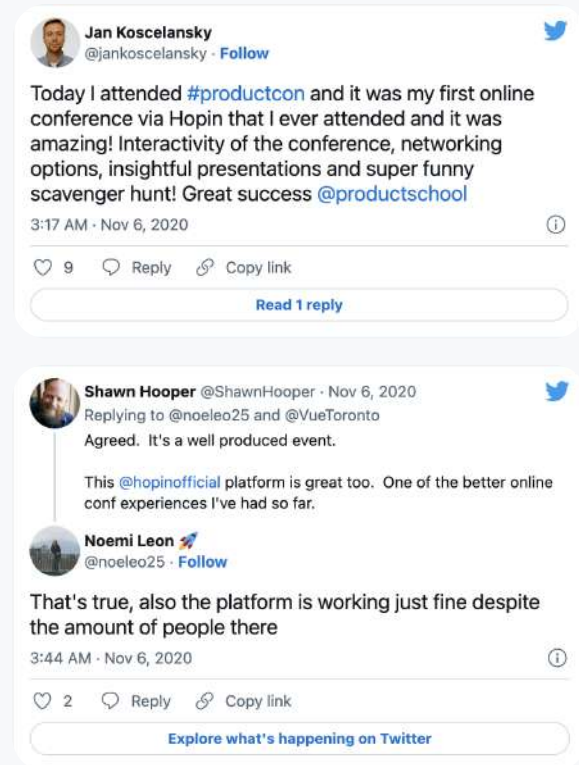
The Hopin experience is straightforward, simple, and easy to use. The simplicity of navigation is obvious from the outset, and the design is simple yet comfortable, which facilitates building new contacts, visiting an exhibition area, or connecting via conference email or chat. It helps customers to avoid dealing with conference platform technical difficulties during the meeting, leaving them extremely delighted with the platform experience.



Hopin's interface screen cap

At the tactical level, small-d design tackled design challenges such as "creating scalable all-in-one platform solutions" and developing "best online events experience to keep attendees, sponsors, and speakers fully engaged." to connect people in a meaningful way. Furthermore, its consistent and user-friendly UI treatment, such as easy-to-understand iconography and readable text, helps users feel good by promoting seamless interactions with the interface, eliminating friction spots, and achieving better user experience.

Hopin designers employ their craftsman skills, along with creative and design thinking, to create high-quality UI/UX design that provides consumers with highly functional, visually attractive, intuitive interfaces, and the greatest possible online event experience. When designers get fresh ideas and insights from users or internal team discussions, they are eager to offer new features that complement the platform's fundamental purpose. When they receive feedback about poor video quality that makes the interface appear ugly, they notify the team and consider adding options that allow users to change video settings, switch to an avatar, or apply a filter.

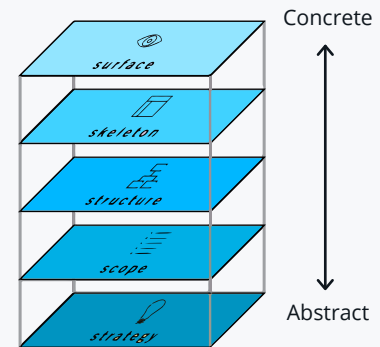


Users' comments about Hopin's products

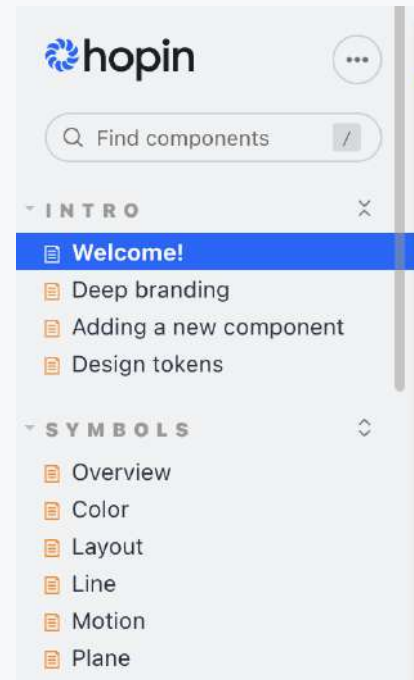
However, as software design progresses, system software gets more complicated, posing difficulties for designers working on application software design and preserving design integrity. According to Jakob Nielsen (2017), users should not have to guess if various terms, contexts, or activities imply the same thing. Consistency is essential in both design and product development.

Hopin designers carefully interpret strategy and plan into practical design needs and adopt a user-centered approach from ideation to design delivery to maintain a consistent level of quality at scale. They go through the processes of defining scope, rethinking structure, reviewing skeleton, and delivering surface in a methodical manner (Tribble, B., 2021). They make certain that their deliverables fulfill the needs of both organizers and attendees.

Designers create high fidelity wireframes and prototypes for functionality before moving on to development. They also ensure that all design asserts, components, and interaction patterns are consistent with their larger design system, for example, the behavior of navigation transitions should be consistent and smooth on every page. They examine color accessibility in all areas to ensure that deliverables are consistent across numerous devices and screens. This helps to keep all of the ambiguity away from consumers who eventually become customers.



Hopin's consideration for UX structure

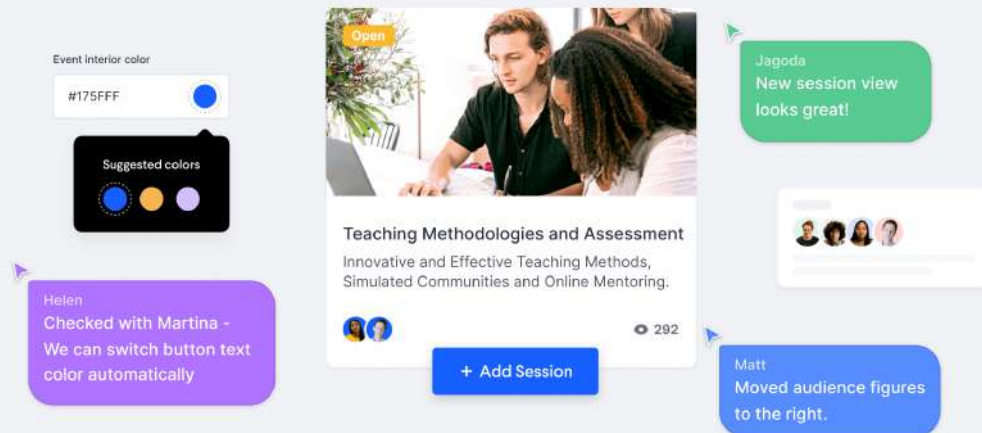


Hopin's large design system (Holvi, 2022)

Hopin designers aspire to approach people through emotional design in order to generate meaningful connections between customers and products. They are not simply satisfied with things that seem fantastic on the surface. Hopin's design is appealing, effective, memorable, and delightful, leading users to feel that Hopin will operate better for them in their lives, completely meeting their needs that other platforms are unable to satisfy. Here, design is utilized to guarantee that the product provides significant value to clients, which would promote customer happiness, boost Hopin's credibility, and differentiate their service in the market.

Operational productivity

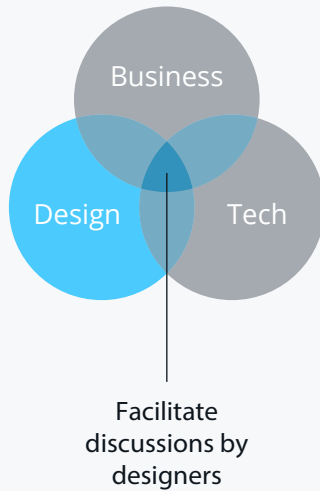
The key driver at Hopin seems to be the development of products that are enhanced through design. It is necessary at every level of the software development cycle and helps lean and agile startups. Every designer operates in a busy, multi-time zone agile environment, necessitating quick turnarounds to keep product managers and developers on track (Murgia, L., 2021).



Team collaboration remotely in Hopin (Murgia, L., 2021)

From product conception to launch, design professionals are in charge of the whole process. To guarantee that their solutions are desirable, feasible and viable, designers facilitate discussion amongst various stakeholders during meetings (Tribble, B., 2021). They work with managers to comprehend the business requirement and user story before coming up with assumptions and hypotheses based on their study into the market. They communicate with developers to see whether their proposed solutions are practical and whether there are any technological limitations before incorporating commercial value into low fidelity wireframes. This enables them to agree before being too pixel-perfect, and the technological implementation has little effect on important design choices made during the development stage. Additionally, designers undertake design research for design language, use reusable components in new platform features, and provide developers with official components as examples. These actions enable developers to concentrate their efforts on crucial components.

Additionally, designers pay special attention to consumers and their needs at all stages of the design process. They actively listen to genuine user input and implement any necessary modifications. The feedback loop accelerates and gets more frequent as the team's output increases. A product's usability, accessibility, and ease of use are all influenced by design. Meanwhile, it minimizes the possibility of improper implementation by ensuring that the core functions of the product are constructed in compliance with the initial requirements. This does not, however, imply that designers are hesitant to make a product available that isn't flawless. They believe that the fastest feasible market entry, early client acquisition with an MVP, and subsequent release of the next version for development after gathering user input and making the required modifications would all lead to success.



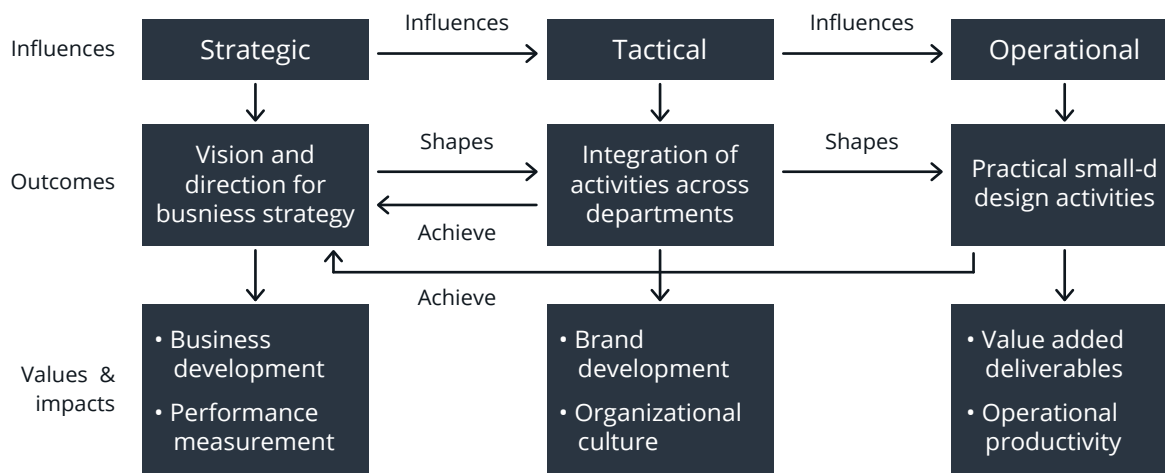
Designers facilitate business and development dialogues by giving ideas a concrete visual representation and by leveraging both the as-is and to-be customer journeys to frame the conversation, since they are obviously not confined by the bounds of their knowledge.

Additionally, designers actively communicate the essential points to guide the group toward a single objective and the right path so that everyone is aware of them and follows them. Because of this, decisions may be made more quickly, the meeting's primary issues might be resolved before the end, and developers and managers might be better able to see the big picture while also exploring and contributing their ideas. Design therefore makes it easier for many important players to work seamlessly and expedites the problem-solving process.

At the operational level, the startup successfully sets itself apart from competitors and differentiates its goods by applying practical design activities to add value to the products' functionality and usage. Design significantly promotes interdisciplinary dialogue and boosts teamwork. Strong cooperation helps to increase the team's productivity, efficiency, cost savings, and speed to market while also ensuring that MVP is enhanced continually for best performing.

Summary of key points

Startups' potential to succeed is significantly impacted by both big-D and small-d design. Subject to the startups' business context, the adoption of design approach and design management can be slightly different. Design drives brand growth at the tactical level to attract investors and consumers, and it creates organizational culture to energize employees and keep them focused on the needs of customers. To generate business possibilities, expand market share, and provide performance measurement to raise business competitiveness, design drives business development at the strategic level. They offer value-added services to strengthen competitive advantages and increase operational productivity to shorten product time to market. All design approaches aim to create user-centered businesses, workplaces, product development processes, and products, as well as efficient design solutions that may help software startups increase funding, achieve product-market fit, and outpace competitors.

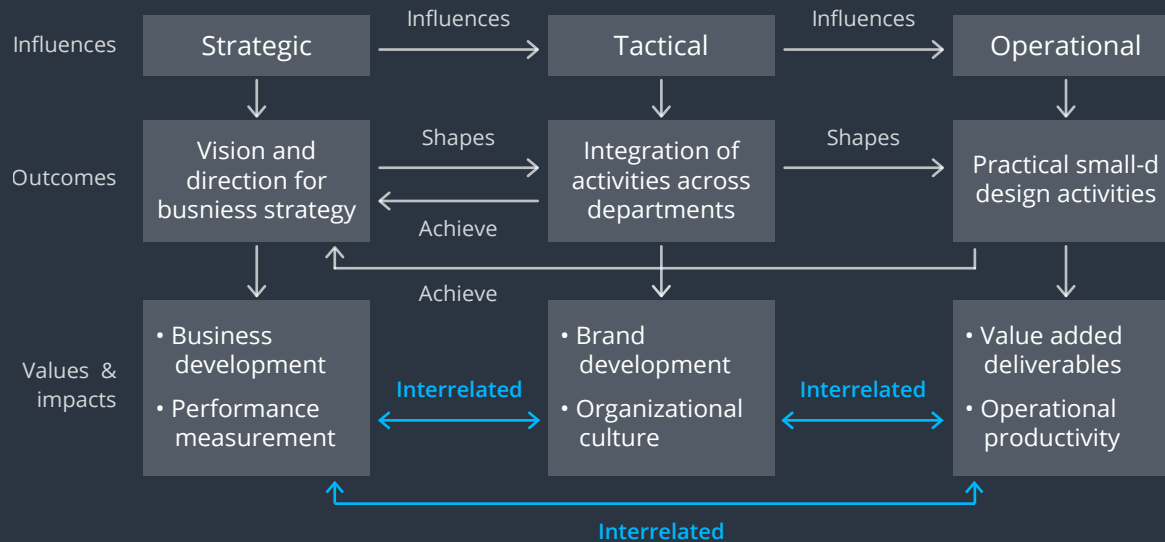


The roadmap to extract value from Design at all levels

IV. Discussion

Findings

1. There are overlaps between design concepts; for instance, a value-added product may boost business performance, or a customer-focused culture may help enhance a company's operational productivity. All levels of design values are interdependent on one another on a basic level. Strategic design requires the aid of operational design to transform ambitious goals like vision into tangible outcomes and deliveries. Tactical and operational design must get clear direction from strategic design at the same time. Startups in the software sector should strike the right balance between each level of design strategy to maximize their efficacy.



2. Big-D design must be appropriately interpreted by small-d designers or its values will be lost. Getting the correct mix of Big-D and small-D design is a key challenge for management and successful innovation. In practice, it is crucial that big-D design managers and small-d designers have mutual respect and trust. It can depend on how effectively design management concepts operate. If good design concepts or practices are not effectively implemented, the advantages they offer may be lost.

3. The impact of design on any startup team depends on how much support senior management gives; this usually has to do with how resources like money, time, and talent are distributed. Due to a lack of design resources, startups may have a limited understanding of the purpose of design because it is seen to fall outside of their core expertise. These myths restrict firms from using design approaches and prevent designers from using their abilities to their full potential.

Recommendations

For startups

Here are some suggestions for startups based on an analysis of several key activities used by successful software startups as design strategies:

Startup teams are advised to use external design consultants that may assist the firm in reexamining its values, target markets, and needs in addition to an internal design team that focuses on the core products in order to apply strategic design efficiently. Using outside design resources is not always less expensive, but businesses that develop new inventions might benefit from their "fresh" perspective and "unbiased" thinking. The founders of startups should set aside sufficient funds to spend on design-related activities, recruit and engage an experienced design manager who is a strategic design thinker and able to interpret the corporate strategy using natural talents and multidisciplinary teamwork, and involve design professionals sooner in teams. Additionally, it is advised for startups to create a conducive atmosphere for design in which the

function of design is defined and design becomes ingrained in the business. Establishing design and design thinking education programs, for instance, or having staff participate in closed and open innovation. The aforementioned ideas, however, assume that senior management views design as a valuable resource.

Along with using closed innovation techniques within their own organizations, startup teams may also employ open innovation techniques to draw on outside knowledge sources for their innovation management strategies. Design activities are offered by several top consulting firms to support business cooperation and innovation. Startups may encourage personnel to enroll in design courses that foster everyone from cross-functional teams to think "like a designer" by giving them free access to IBM's "Enterprise Design Thinking" online training. IBM InnovationJam® enables organizations to tap into the collective wisdom of their workforce to develop and iterate on ideas related to crucial business concerns. Google design sprints are primarily used to test ideas with users and address issues related to digital transformation that have the potential to completely change how businesses operate and interact while teaching them how to fail quickly and learn quickly. These open innovation techniques provide businesses access to external learning resources and channels as they learn to uncover unmet requirements, create new opportunities, and get over current obstacles to their survival and financial success.

For design professionals

In contrast, designers at software startups frequently work in small teams and are exposed to a wide variety of design tasks, such as product design, brand development, and research. Startups would be the ideal setting for designers to explore various design disciplines and grow their conceptual and practical knowledge. Designers may have easier access to commercial decision-makers and interdisciplinary teams, which helps them narrow their areas of expertise. They also take a lot of ownership in and participate

in design decision-making processes that have a big influence on the business, which helps them develop their leadership abilities. Yet, it implies that the jobs of design experts are flexible and dynamic and have the following qualities: design professionals should be proactive and hands-on, and they should work well with other internal and external stakeholders as a team member and communicator. They are further equipped to work on a variety of projects thanks to interdisciplinary methods, and they actively learn languages from domains outside of design, such as fundamental technological knowledge and a business attitude. In the meanwhile, in order to adapt to rapid expansion, design professionals need to be adaptable and autonomous in uncertain working situations.

It is inevitable that many designers will approach software design tasks in their own unique ways. However, a strategy's efficacy might be diminished if it is implemented incorrectly (Tang, A., & Vliet, H., 2012). Some designers use a solution-driven approach while others employ a problem-solution coevolution strategy when confronted with the same design challenge. A competent design management strategy may boost the effectiveness and quality of software design by utilizing a variety of strategic design approaches. Design managers are advised based on the difficulty of a design issue and the designer's capacity for making decisions. For instance, if the design is complex and none of the designers have prior expertise on the subject, managers may use design criteria to organize and prioritize design activities for designers to first research the objective and scope of a design in order to understand general design issues. An apparently simple design may end up being more difficult than initially thought when new information, IoT, and design flaws are uncovered. The design strategy may be affected by recently found design problems. Design leaders are capable of carefully choosing a suitable approach and embracing new strategies when the circumstances change.

Conclusion

As research on the issue progresses, it is believed that many design-related topics have yet not been thoroughly explored in startup contexts. It seems to be difficult to get the support of founders for devoting resources for design activities and to develop cross-functional understanding of design as long as there is no standard for comprehensively measuring design consequences. Due to a lack of resources, businesses struggle to adopt design approaches effectively, which causes employee uncertainty about design. As a consequence, a causal loop is established.

It is expected that the topic of applying design in software startups has huge potentials before long, the study's findings would be complemented from different perspectives. Design will hopefully soon be recognized as one of the essential resources and standard methods used by enterprises to handle problems and grow their businesses.

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