Organizational renewal and innovation through design
The products, services, technologies, ecosystems, and networks of today are much more interconnected and complicated than ever before. As a result, private and public organizations alike are turning to design to find new ways to create value, manage uncertainty and innovate in a sustainable manner. Design can play a variety of roles on different levels in organizations, with different effects. The Design+ book offers an overview on how design and design thinking can change our organizations, drawing from academic research and company experiences in different industries. We showcase different perspectives and approaches, and hope to inspire you to explore the opportunities through which design can help to renew your own ways of working.


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Building design-driven organizations

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In recent years, design has become a strategic tool for businesses, helping to translate technological innovation into user value, bringing customers to the focus, and creating compelling experiences that leading firms have, in turn, successfully transformed into business value\(^1\). Design-driven organizations take a customer-focused, agile, and cross-functional approach and use empathy as a key asset. Design thinking is combined with strategic foresight in order to design the desired future\(^2\). It is not surprising then, that many large corporations, such as SAP, Target, Coca-Cola, Starbucks, and Ericsson, have turned their gaze to design.

Design-driven organizations look at things from different angles to challenge existing cultures and rituals, to create and experiment with new ideas, innovations and practices, and to engage multiple internal and external stakeholders. As University of Virginia professor Jeanne Liedtka shows, characteristics borrowed from the field of design - synthetic, adductive, dialectical, hypothesis-driven, opportunistic, inquiring, and value-driven - also describe strategic thinking\(^3\). What distinguishes design from traditional strategic processes is its human emphasis and experimentative process. Rapid prototyping and iterative experiment-and-learn loops make sense in the context of uncertainty, where cause-and-effect relationships can often be defined only in retrospect\(^4\). Design-driven organizations use design to redefine the problem space, facilitate co-creation between different stakeholders and learn through experimentation to develop solutions that meet human needs in a technologically and economically effective manner.

While many organizations find design topical and important, concrete steps in building a design-driven organization are sometimes difficult to define and execute. Liedtka and colleagues argue that the challenge of building an organization-wide capability, where everybody innovates, lies in the lack of training, confidence, time, support, autonomy to
conduct experiments, and even access to the stakeholders design thinkers want to serve. In our own work, we’ve seen siloes, power games and a lack of an overall approach as typical pitfalls. In order to tackle these challenges, we find it important to focus on the talent and capabilities, structures, practices, and culture that can enable design-driven organizing. Here, we offer an overview of key considerations in each of these elements.

DESIGN CAPABILITIES: PEOPLE AND TALENT

Building a design-driven organization requires design capabilities at many levels and for many purposes. In these organizations, the CEO and executive team understand the value of design for holistic customer experience, and top management guarantees the resources, the mandate to make decisions, as well as long-term commitment and support. In the beginning, however, the person responsible for design is frequently not in the c-suite, thus the budget and decision-making power around design are often lacking. Having someone in the top management to lead design efforts is crucial to guarantee sufficient resources, authority, and connection to business decisions, although the title of this person may vary. Second, design competencies do not necessarily pre-exist in the organization, at least not to the extent needed for true transformation. This is often the case in more traditional organizations that have focused heavily on technology and efficiency.

Recruiting designers or buying design services as a non-designer can be tricky. As design has become kind of a business buzzword, there appear to be designers everywhere, many of them lacking the relevant education, experience, and portfolio. Getting the right competence for the company’s purposes is critical for future success. Sometimes even setting goals and drafting new responsibilities and roles can be a significant challenge, especially if there’s no first-hand experience on design projects or approaches. Keeping great designers motivated in a context like this can also be difficult. In our experience, one of the best ways to demotivate designers is to give them a bunch of non-design responsibilities or to limit the use of their skills to a very narrow area. This is unlikely to keep designers committed and inspired.
Our research shows that what designers value most are meaningful projects, the freedom to create, and open, good collaboration with different stakeholders resulting in mutual learning. The better the top management understands design principles and processes, the more evident it becomes that design needs a specific type of leadership. In addition to classic leadership skills, the leader has to understand the design process and to be able to leverage and integrate diverse ways of thinking.

Finally, in addition to design professionals who bring their expertise to organizations, becoming a design-driven organization requires building design thinking capabilities amongst a larger group of employees. While not everybody in an organization needs to become a designer, everyone can learn and utilize design thinking and appreciate the value that the design process can bring to their organization. Design thinking can be utilized all around the organization, not only on the front lines, where customers are met. Indeed, design thinking is taught to non-designers in many organizations. In addition to training, professional designers are needed to provide support and structures for actually incorporating design thinking processes and tools into day-to-day work. For example, Intuit set a target of becoming more design-driven and wanted all of its employees to think about design. The company increased the number of in-house designers by nearly 600% and created a team of “innovation catalysts” to help managers work on initiatives throughout the organization. In addition, Intuit put in place a set of principles, tools, and training programs for employees across the organization to think more creatively and experimentally in order to enhance value for customers.
Pathways to securing internal and external talent

Design competence can be strengthened in many ways: constructing a design organization from scratch, acquisition, or combining the old and new. All of these options have their pros and cons. No matter which path you choose, there are some key questions to consider: How significant of a change are you looking for? Do you see the role of design in your organization as strategic or tactical? What kind of budget do you have in use? Do you want to maintain the status-quo or change it? How much time do you have?

Creating a design organization from scratch allows one to carefully choose resources without baggage from previous recruitments or decisions. However, this approach is time-intensive and requires long-term commitment. Designers are often hired from the outside to bring in the needed know-how, or sometimes they are employees that are trained in design methods, tools, and facilitation. Scaling up can turn out to be a significant challenge, because it takes time and resources. Furthermore, it is important to clarify the goals. Is there a need for “fresh” or more experienced talent? Both have their strengths and weaknesses; it is more about what you are trying to achieve. With a talent who is closer to graduation, building common beliefs and practices may be easier than with more experienced designers, but there is a lack of deep experience. Often a mix of both would be ideal.

Acquiring an existing design agency or unit allows for a quick start. However, it requires a significant investment in the beginning and a well-planned and proper post-merger integration\(^{10}\). In the past few years, this approach has been common in traditional management consulting, with Deloitte acquiring Doblin, Accenture acquiring Fjord, McKinsey acquiring Lunar, and CapGemini acquiring Idean. These acquisitions show that design is no longer considered just something crafty; rather, it has become a core competence at a very strategic level.
Leveraging existing capabilities acknowledges the skill already found in the organization. In many cases, there are already some existing design capabilities. This can be a significant strength: at least some employees of the organization are already familiar with design approaches, have confidence in them, and can act as ambassadors. A key challenge is to align existing resources with new talent in a way that feels beneficial for all parties.

Building your own design organization and buying design services are of course not mutually exclusive: often organizations with strong design capabilities also use external design agencies to bring flexibility, fresh ideas, or specialized expertise. Based on our study, external partners can be helpful in defining the role of design and ramping up the internal design organization. In fact, often a mix of internal and external designers is most promising. Finding good partners from the wide variety of service providers is crucial. You have to know what problems you want to solve, what are your goals and what is your budget. At the same time, agencies - just like any group of designers - need enough freedom to enable surprising solutions and even re-defining of the problem.

STRUCTURING DESIGN CAPABILITIES

Whether design capabilities have been acquired or built from scratch, they need to be organized in a way that supports collaboration, problem-solving, and creativity. There are multiple questions that need to be answered in order to enable a coordinated and efficient way of working. Where do the project briefs come from? Who makes the final decisions? Who will implement what has been designed? These questions are not only about design per se, but about the structures in place.
Design-driven organizations are not built by having lonely designers all over the organization with limited peer support, coordination, or influence. Nor are they built by siloed design units. It is important to ensure collaboration across silos, by building bridges across multiple functions, and to get different perspectives to projects and tasks at hand. While drawing organization charts may appear easy, in practice, organizing design is rarely a simple exercise. At the very least, the structure of the rest of the organization, existing internal relations, and possible bias against change influence the outcomes.

There are many ways to organize design and each of them has their own strengths and pitfalls. The structure should not be chosen based on current roles, power positions, or personal ambitions. It should be chosen based on current and future customer needs, keeping in mind the context. What works for one organization at a certain time does not necessarily work for the same organization a couple of years later, not to mention other organizations in different industries, countries and so on. In any case, people must understand by whom and how decisions are made, even though the design thinking methodology calls for egalitarian, self-organized teams with a lot of autonomy. One of the most important things is to get the right people to the table in each phase. A typical challenge that designers face when working with organizations new to design thinking is being involved too late in the process, whether working in-house or as external service providers.

**Different configurations of design**

One of the fundamental dimensions when considering how to structure design capabilities is the level of centralization. A *centralized design function* allows for a holistic overview and can make shared goals, practices, and culture easier to achieve than in fragmented models. Being part of the same function allows peer support and learning from
other designers. However, it can also carry the risks of an ivory tower, separation from the realities of the business units and insufficient contact with clients and end-users. In a *decentralized model*, in turn, designers are typically spread to business units, which allows closer connection to business needs. However, peer support may become limited and there is also a risk for territory disputes and internal competition between designers. In addition, designers may lack a critical mass for pushing the design agenda forward when individual designers are dispersed in the company.

Many companies have a *project-based approach*, in which cross-functional collaboration is embraced. Design projects can be a great opportunity to give members of different departments a common focus and objective outside of their normal work routines. They bring together multi-disciplinary teams and professionals with diverse backgrounds. While designers are often more focused on the design process, others can bring their specific competencies on the subject matter to the table and represent different functions and units with diverse capabilities. It is important that these teams also include people who are directly affected by the identified problem, whether it is internal stakeholders or external stakeholders, such as customers. In a project-based approach, attention also needs to be paid to how capabilities are cultivated within the organization, how decisions are coordinated and that sufficient levels of holistic understanding are secured for their basis.

In large organizations, it is common to have *design or innovation centers* that can provide internal training, workshop spaces, and support for projects where professional design skills are needed. For example, the health care provider Kaiser Permanente established Innovation Consultancy in 2003 to provide internal consultants to the rest of the organization and to teach design thinking to the company’s
existing staff. This team brings fresh methods to help Kaiser employees to discover, design and implement new ways to improve the care experience of their patients and the work experience of the caregivers. Any Kaiser employee can schedule a quick 15 minute consultation with two members of Kaiser’s Innovation Consultancy team to receive guidance, tips, and ideas to help innovate. Some innovation centers are more focused on new business ideas or early phase product development.

In any of the above structuring options, organizations often use external advisors to inspire and coach their internal designers. Furthermore, in addition to professional designers, there can be an internal community or network of like-minded people, who are interested in design practices and willing to learn more from professional designers and one another. In any design-driven organization, it is useful to build design competence across different departments and units, and this type of internal network can serve as one way to establish common language, processes, tools, and methods, thus creating an excellent base for cultural transformation. The internal community of the organization’s professional designers is also crucial. Learning from one’s designer colleagues has been consistently brought up as one of the best parts of the job by designers in agencies and technology companies alike in our studies, speaking to its importance in business performance and retaining design talent.
PRACTICES FOR BUILDING COHESIVE DESIGN

Shared routines and practices of design doing help in taking full advantage of both current and emerging design capabilities. Even though designers value their freedom highly, there needs to be a level of systematicity of design efforts within the organization. Having an aligned way of working in large organizations calls for choices that guide the work in the same direction, help differentiation from competitors, and most importantly, enable a coherent customer experience. The same challenge is often faced by smaller companies as they grow: adding more people and complexity increases the challenge of creating coherent experiences exponentially. Based on their research, professor Martin Kupp and colleagues suggest that integrating design thinking into existing processes is crucial. In addition, new routines and practices are often needed.

It can be useful to start from defining company-wide design principles. This helps to create a shared understanding of the role of design, set common goals, speak the same language, and enable efficient collaboration. In addition, incentives in business units need to be in place for collaborating in new ways so that innovation is seen as a path to success rather than a career risk. Otherwise, design efforts will continue to be thwarted by internal competition and politics.

Examples of design frameworks, systems and principles

Company-wide design systems can be essential to building better, faster and coherent output in the products and services that are offered. The purpose is not to limit creativity, but to establish a shared understanding, unified tools and ways of working. For example, in order to become one the world’s most design-driven companies by 2020,
Intuit developed its own D4D (design for delight) approach, which articulates Intuit’s approach to design thinking and provides the entire company with a common framework, based on deep customer empathy, idea generation, and experimentation.\textsuperscript{8,9}

Similarly, Cisco has its own design thinking framework that is focused on discovering, defining, and exploring. The company has created a printed book that serves as an inside guide to Cisco’s design thinking framework and to practicing the framework in everyday work. It is meant for anyone in the Cisco ecosystem who is interested in learning more about design thinking and how to apply it. It includes the fundamentals of Cisco design thinking, Cisco Design Thinking principles, and exercises and tools. The tools are divided by the Cisco Design Thinking phase where they are most typically used. Moreover, the book encourages to use Cisco Design Thinking Labs.

A third example comes from Airbnb, founded by designers and well-known for its commitment to great design. The company aims to approach every challenge with a human-centered lens, but one-off solutions were becoming a problem as the company expanded. A small group of designers and engineers was assembled to design and build a design language system in order to have unified platforms that drive greater efficiency through well-defined and reusable components. A few principles guided the work: being unified, universal, iconic, and conversational. Now that the system is in place, it enables a shared understanding of Airbnb’s style as well as fast prototyping and experimenting. In addition, their product reviews have become more on point, focusing on the actual concepts and experiences of design.\textsuperscript{13}

When building a design-driven organization, a common pitfall is to start designing such an extensive amount of rules and tools that it becomes a priority in itself - rather than a scaffold for great design. Building an
overly complex and sophisticated system, which either takes forever or turns out to be difficult to implement, will not enhance the customer experience. Sometimes it is useful to start with something simple and scalable. Especially when teaching design skills to non-designers, everything should be easy to understand, remember, experiment with, repeat, and share. After all, the employees’ main focus should be on the content, experience, and co-creation, not on the design methods or tools themselves. Having well-planned, well-tested guidelines in place will provide a good internal user experience for both designers and design-thinkers. Moreover, there will be clear business benefit in terms of time- to-market, quality, and customer experience.

**CULTURE CHANGES**

Maintaining a dynamic balance between structure and flexibility depends on the culture and context of the organization - past, present and future alike. However, most design research has overlooked the potential benefits of incorporating design as a key component of organizational culture. This is unfortunate, as culture plays a key role in building, maintaining, and strengthening design capabilities. Design thinking and doing change how people work together, and will inevitably have an impact on the organizational culture in which they are used. For example, at Huntington Hospital in California, design thinking was used to improve billing routines and processes, but training staff members to be proficient in the method ended up, somewhat unintentionally, boosting employee morale and their sense of innovation and collaboration.

Taking a more proactive avenue means intentionally designing the organizational culture. Design thinking fosters a culture that embraces curiosity, humility and questioning, inspires frequent reflection
in action, celebrates creativity\textsuperscript{6,14} and navigates tensions between contradictory elements\textsuperscript{18}. All of these are required for innovation, and are well suited to complex and fast-changing operating environments. Design-driven cultures typically focus on customer experience, support cross-functional collaboration, and encourage empathy, creativity, fast experiments, and learning from failures. There can also be more specific elements, such as emphasizing craftsmanship, aesthetics, or storytelling.

Any organizational culture can be studied at three levels - the level of its artifacts, the level of its espoused beliefs and values, and the level of its basic underlying assumptions\textsuperscript{19}. While artifacts may be fairly easy to replace, even in the best case, it takes years to change shared beliefs, assumptions, attitudes, and written and unwritten rules that have developed over time in large corporations. Top management commitment is crucial - experimentation can be seen as “risky” without a clear mandate from the top, and those new to design tend to resist iteration through action rather than prediction. For example, Microsoft’s CEO Satya Nadella has said transforming culture is his number one priority. In addition to empathy, empowerment, and a “learn-it-all” rather than a “know-it-all” mindset, he tirelessly highlights the importance of diversity and inclusivity. The targeted culture should be reflected in design work. To establish inclusivity in all of Microsoft’s design efforts, the company has inclusive design principles, a design toolkit for inclusive sessions, and several case examples of inclusive design in action\textsuperscript{20}.

Before attempting a broad, company-wide cultural change, it is important to make sure that the design team’s culture is constructed to encourage the best work\textsuperscript{21}. Our research clearly shows that culture is one of the key motivational factors for designers. Cultural artifacts, such as physical space, are important sources of inspiration. Moreover, the
freedom to create, learning from others, and opportunities for personal development are often emphasized far beyond career development in terms of titles and positions. Meaningful work and shared core values may be more important than a big paycheck: having a like-minded group of designers appears to be of utmost importance for many designers. The culture of an organization is never completely uniform across different teams or units, nor stable throughout time. This can be leveraged in building local critical masses of design-driven culture in the process of slower transformations to take hold in the organization at large.

“I wanna reiterate how important it is that there’s a culture of skills growth and skill sharing here. I think that’s super important and everybody on the team does a good job of keeping that culture alive, all the way from senior leadership down to our interns.”
- Designer in a design agency

“It is absolutely critical how leadership act as role models. If they don’t live it to the employees, all the effort is worthless. And in fact, it can actually be more painful to the employees because they are feeling like they’re beating their head against the wall.”
- Innovation manager in a software company
EFFORTS TO BECOME DESIGN-DRIVEN IN PRACTICE: THE EXAMPLE OF IBM

While one-size-fits-all types of answers on how to build a design-driven organization are impossible, each successful effort entails addressing the four key elements: design capabilities, structure, practices, and culture. To illustrate how these elements can come together in practice, we conclude with a case example from IBM²². This multinational information technology company has undertaken a groundbreaking effort to apply design thinking in their business²³. When a giant corporation aims to become design-driven, the impact is far-reaching; IBM’s technology plays a crucial role in several industries, such as health care, transportation and energy. Though the value of good design has been recognized in the company for a long time, IBM has invested more than 100 million dollars to building its design organization to continue to meet customer needs and future-proof the company. Internally, it has meant a cultural shift away from the engineering-driven “features-first” mindset towards a more “users first” mentality. The goal has been to modernize enterprise software for the modern user that demands great design everywhere, both at home and at work.
Developing design thinking capabilities

A shift of gears could be seen in the company in 2012, when IBM set out to recruit hundreds of designers and train its entire workforce — some 380,000 employees worldwide — in design thinking and doing. At the time, IBM had one designer for every 72 software developers; today that ratio is one to eight. In addition, training has been organized for non-designers. A one-day session has been tailored for executives and another week-long training to product managers. All senior managers at IBM have been through design training. For teams, the company has created a 10-week design internship program, and all new designers take part in a full three-month program. In all, over 10,000 IBM employees so far have had some in-person training in design thinking and more than 100,000 IBMers have earned their design thinking practitioner badges by completing an online course.

Structuring design capabilities

How to organize design was one of the key questions as IBM set its ambitious goal. One of the challenges was that IBM’s design resources were fragmented with a lack of a holistic overview. The support of top leadership was key in guaranteeing internal credibility and support for the changes needed to build the new IBM design unit. In order to ease communication across stakeholders and create a coherent user experience, IBM built a global platform of 44 Studios. These Studios provide highly collaborative spaces where clients and IBM teams can co-create with their users in new ways. They also take on the most difficult challenges facing
IBM and its clients. The studios promote design in many forms, from workshops to small group collaboration and from client engagements to product design.

In addition to no one organizational model serving all companies, a certain model may work well in one phase of the change, while a different model may be more suitable for another phase. IBM began by establishing a centralized design organization to construct a shared understanding of design goals and approaches. As the foundation had been created and the power of design thinking had become widely accepted, IBM recently decided that it is time to change its design organization towards a more decentralized model in order to allow maximal support for business units and to keep designers close to customers. The company is now in the process of implementing this change. While there are many benefits, it is a significant transition for designers, who may miss the strong professional support of a centralized design organization.

**Creating shared practices**

Customer experience should be aligned throughout the company, and achieving this requires creating shared practices that span across functions, units and sites. At IBM, company designers, employees, clients, and other stakeholders all participated in building the basis for the new design approach. As a result, IBM now offers its employees and stakeholders the company’s own framework of design thinking, a shared vocabulary, and tools for design research.

*IBM Design Thinking* is a framework for teams to understand and deliver great user outcomes. Using IBM Design Thinking begins with
a focus on user outcomes, a multidisciplinary team, and a spirit of restless reinvention. A behavioral model and a set of key practices is provided to scale design thinking to even the most complex projects.

The **IBM Design Language** is a shared vocabulary for design. Visual, interaction and user experience vocabularies offer guidance into creating beautiful and useful work, and IBM best practices for how to think about performance, prototyping and content. The IBM Design Language was first made available to IBMers, after which the language was updated based on contributions from the global IBM community. Now, the IBM Design Language is available to anybody. Its main purpose is to enable designing coherent products, services and experiences, yet with more flexibility than set patterns and templates.

**IBM Design Research** drives actionable user insights in the organization. Teams are encouraged to build continuous knowledge, discovery and empathy through observation, experience and making. They become advocates for the users. Multiple tools are made available for teams encompassing different types of capabilities: “explorers” bring their domain expertise to the forefront and are vital in directing the research needs, while “guides” facilitate research through collection, analysis and producing insights to lead the team towards user outcomes.

While it was a major effort and investment to construct these sets of practices and frameworks, IBM wants to ensure they will continue to evolve to reflect changes in the operating environment and the company as well as deeper understanding and experiences gained along the way to best serve the users.
In order to build a strong design culture, IBM practices include seven core habits emphasized across all of IBM’s design education programs:

1] **Empathy:** the drive to understand what makes others tick, honor their perspectives, and do what you can to inject delight into their experiences.

2] **Vulnerability:** a willingness to contribute your ideas to the world, open yourself up to criticism, test your assumptions, fail early, and learn fast.

3] **Curiosity:** the drive to see what makes something tick. To understand why why why WHY!

4] **Humility:** the ability to suspend your ego, accept that you don’t know everything, and invite others to share their knowledge with you.

5] **Integrity:** to align with your team, adapt, improvise, and be transparent about your failures as well as your successes—in the interest of good work.

6] **Flexibility:** to be open to new ideas, willing to compromise, and able to build a better solution through embracing constraints.

7] **Audacity:** to dive into challenges with enthusiasm and be willing to ask for forgiveness instead of permission.

These core habits ensure that approaches to design thinking are similar and support the IBM way of doing. However, the design approach is applied also to the iteration of core habits as well: as they are tested and reflected on, and understanding of them is refined, changes are made to the programs to incorporate any fresh insights.
Reaping the benefits

A design-driven culture is built on collaboration with stakeholders. Rather than keeping its approach as a secret, in early 2018, IBM made its Enterprise Design Thinking services available online in order to allow the company’s stakeholders to harness the power of IBM’s design thinking framework. The company also took steps to ensure the new approach was working - major investments should always have measurable outcomes. IBM commissioned Forrester to study the total economic impact of the company’s design thinking practices to provide a framework to evaluate both individual projects and the grander organizational transformation. The results from 2018 show that design thinking has paid for itself in the form of IBM having doubled its time-to-market speed, increasing portfolio profitability with a return three times greater than the investment made\textsuperscript{24}. When the value of design investments can be shown in the language of business leaders, future steps become much easier.

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