How CIOs Should Deal With Digital Design as a Business Function

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Initiatives: CIO Leadership of Innovation, Disruptive Trends and Emerging Practices

Digital design is being recognized as a key piece to digital product management initiatives. In response, digital design teams are emerging as distinct business units. This trend will require CIOs to seek innovative approaches to IT-digital design alignment and integration.

Overview

Key Findings

- To create compelling customer experiences, CEOs are increasingly investing in digital design. These investments are being directed toward new business functions, rather than an expanded IT role. CIOs are often left wondering whether this complicates their job or whether it provides new opportunities to succeed.

- Because digital design is a business function that seeks to deliver digital products and services, it shares objectives similar to those of the IT department. As a result, CIOs have to figure out how to go beyond IT-business alignment and into IT-business integration.

Recommendations

To support their organizations’ overall ability to design and deliver digital products, CIOs should:

- Engage chief design or chief digital officers by establishing shared objectives and routes to conflict management.

- Support distinct digital design business units by using design thinking workshops as a way to create an ongoing interface between design teams and the IT organization.
Foster a design-centric identity for the whole enterprise by allowing developers in the IT organization to be deployed to digital design teams.

Introduction

Digital design has been one of the most dramatic transformations that the IT industry has undergone in the way that digital systems are conceived, created and improved (see Note 1). Yet digital design was all but nonexistent for the first half-century of the industry. Why was this?

Those 50 years were largely spent wrestling with the complexities and limitations of digital technology. It resulted in tools and processes that were excellent at creating systems that deliver on clearly defined specifications.

That engineering process was directed at internal business requirements. And it was business managers who were expected to approve clear specifications, which engineers in IT organizations (or enterprise technology providers) would deliver within agreed-on budget and time constraints.

Ultimately, these systems were used by employees. And while it has been common to see these people referred to internally as “customers,” the truth is that they have always been operators. And the way that system operators are supported are through training programs and help desks and with interface design — the last being largely contingent on it reducing the cost of the other two options. Ultimately, shortcomings in employee experience could be ignored, because their jobs mandated the use of these systems.

Around the 2005 to 2010 time frame, there was a dramatic shift in the composition of people who were using digital systems. The explosion in consumer technology forced organizations, in both private and public spheres, to engage and interact with their customers through an array of digital channels.

The growing proliferation of new digital touchpoints, which both supplemented and competed with the organization's website, amplified a growing observation. Unlike employees, consumers can't be obliged to use a digital system. They need an incentive to engage digitally. Therefore, an organization must understand how a digital system creates value for consumers. It must remain vigilant in understanding consumer device and interaction preferences. And, at all times, it must remember that consumers always have a choice to ignore the digital system ... or to go elsewhere to find a solution they like better.
The engineering process that had served organizations so well proved unable to deliver acceptable solutions to an audience that was either unwilling or unable to articulate their requirements. It was a process unable to draw a distinction between the needs of nuanced categories of people, preferring instead to fall back on late-stage interface design to manage the complexity of functionally bloated systems.

Digital design emerged as a means to solve these shortcomings. By wrapping people-centric research, analysis, prototype and analysis around code development (see An Insight Into the Digital Design Process for CIOs), digital design has been a central factor in the success of customer-facing digital systems.

The initial proponents of digital design were design agencies that leveraged their understanding in other design disciplines (chiefly industrial design) to evolve the discipline. The consumer digital revolution resulted in an explosion in the number of agencies (see Note 2). It started with agencies dedicated wholly to digital design and expanded into advertising agencies. It is now an important service provided by most established system integrators (see Note 3).

The go-to-market strategies for all of these providers are to engage directly with business unit managers. These business leaders understand that their own IT departments do not have the digital design capability needed to create the types of customer-facing systems that deliver the results for which they’re held accountable. This is the point where many CIOs get their first experience of digital design. They, or one of their direct reports, are brought in as a participant of a digital design engagement being run by an agency. We have spoken to many CIOs and IT leaders who are surprised by their diminished role in such engagements, while still being expected to integrate these products and services with back-end systems and to maintain them once deployed.
But, as more enterprises figure out how to successfully connect with customers for systems that are voluntary for them but of increasing importance to the business (for example, low-cost channels, new products and services), the bar for all enterprises within an industry rises. It gets to a point where attempting to create customer-facing digital systems without digital design becomes an increasingly risky proposition. As a result, CEOs are taking notice of digital design and seeing it as a necessary capability of a digital business.

It then becomes important for CIOs to understand the trends associated with how CEOs are taking action and to make sure that they are supporting the best outcomes for their organizations.

**Analysis**

**Engage Chief Digital and Chief Design Officers**

**Why Distinct Digital Design Teams Are Necessary**

There will always be software projects and products that can suffice with the occasional effort to reconsider the interface design. As noted above, this is particularly the case for internal systems, whether productized or not. And, where the employee experience isn’t directly the responsibility of a technology provider, as in the case of commercial off-the-shelf software, it is acceptable for CIOs to hire digital designers into application development teams (see How to Build a User Experience Team). These individuals can either work directly on the projects or help empower software developers to do this work through the creation of design languages and supporting design systems.

But for most customer-facing digital products, or some systems used by frontline staff that impacts customer satisfaction, distinct digital teams are required. A digital design team is a group of trained design specialists with clearly defined job descriptions and knowledgeable management that ensures the end-to-end design process occurs (see Figure 1). That process involves:

1. Collecting data on customers, including through observational user experience (UX) research
2. Analyzing the data in a structured way that leads to a design specification
3. Iterating prototypes of the specification to ensure customer relevance
4. Engineering the final prototype
5. Generating new insights of customers through the analysis of how they interact with the delivered product (see Note 4)

**Figure 1: The Differing Worldviews of Engineers and Designers**

The Differing Worldviews of Engineers and Designers

<table>
<thead>
<tr>
<th>Engineering View of Design</th>
<th>Versus</th>
<th>Design View of Engineering</th>
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</thead>
<tbody>
<tr>
<td><strong>Define Solution</strong></td>
<td></td>
<td><strong>Design Solution</strong></td>
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<tr>
<td>• Gather requirements</td>
<td>• Write code to implement requirements</td>
<td>• Improve interface design based on user feedback</td>
</tr>
<tr>
<td>• Agree on final scope, budget and time frame for delivery</td>
<td>• Test code with users</td>
<td>• Apply necessary graphic design to meet brand guidelines</td>
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Invariably, digital design teams have a unique cultural identity. Ensuring these cultures emerge, and are protected, is critical to attracting and retaining digital design talent on which the entire endeavor depends.

As noted, most organizations start off by working with an external digital agency. So, the only responsibility that CIOs carry in these situations is to support the business, if required, on any back-end system integration, supporting infrastructure and assisting with supplier management. CIOs should ensure this can be accomplished through proactive and pragmatic policies.

For an increasing number of organizations, the volume of required digital design work reaches a point where the work needs to be insourced. There are many examples of non-digital-native companies creating significant digital design teams — sometimes even through the acquisition of a digital design agency.

How Digital Design Teams Should Be Established in the Organization
When a distinct digital design team is created within the enterprise, the CEO must consider where it should reside in the organization. Gartner would support CIOs in seeking to take on this responsibility. However, we do so only on the contingency that the head of design and the head of design’s team report directly to the CIO — it is not a function that should be put under an existing direct report to the CIO.

With that said, we've seen very few CIOs express interest in taking on the responsibility for an enterprisewide digital design team. One possible explanation is that CIOs are seeing very few CEOs tasking CIOs in other organizations or other industries with this responsibility. The most common ways in which internal digital design capabilities are being established are through:

1. Existing, non-digital-design teams (for example, automotive design or industrial design teams) having their responsibilities expanded to include digital design (see Note 5).

2. New digital design groups being established and managed by a chief design officer.

3. The establishment of a specific type of chief digital officer — the “customer experience chief digital officer” (see A CIO’s Guide to the Chief Digital Officer). In some cases, this type of chief digital officer functions entirely as a chief design officer. In other cases, a chief design officer, or equivalent function, is created under the chief digital officer.

By looking at these scenarios, we can see CEOs see digital design as a business function, not an IT function. There is certainly an argument to be made for digital design to fall under the CIO on the basis of expanding the job description of the IT department. But because digital design is so tightly tied to customer-facing digital products, the expenditure for these products falls under cost of revenue, as opposed to cost of operations. As a result, CEOs are preferring to establish enterprise-scale digital design teams as a business function that interfaces, like other business functions, with IT.

What's important for CIOs to understand is that the relationship between a digital design team and the IT organization will be unlike the relationship between any other pair of business functions. Because a digital design team is in the business of creating digital products and services, the nature of the relationship with the IT department will be intimate and persistent.

Use Design Thinking Workshops to Integrate Digital Design Teams and IT
What Design Thinking Is

Design thinking has become very popular with CIOs, and other executive leaders, and is being applied across a broad gamut of industries. That popularity can be seen in the 79% increase in inquiries that Gartner received on design thinking between 2019 and 2020.

Driving the popularity of design thinking is a realization that investments in empathetic learning of customers or other stakeholders — the essence of design — expand the solution space. Put another way, the design process’s emphasis on seeing the world through others’ eyes enables an organization to realize solutions to even the most complex problems that were impossible to see beforehand.

So, what is design thinking? Well, this is where things get complicated. Unfortunately, the design community does a poor job at managing the semantics of its own industry. That means we need to do a little work at establishing an understanding of what design thinking actually is, relative to design, and how it’s being experienced in most enterprises.

Long before the term “design thinking” existed, companies, agencies and individuals were creating products and services through the application of design methods. Design thinking, as a distinct concept, emerged as an effort to formally describe those methods into a cohesive process. Once that happened, design thinking was warmly embraced by the design community, because it did two things. First, it gave the design industry a business legitimacy that it had previously lacked. Until being formally described, design had a reputation as being a creative black box. Second, it exposed the business community to the possibility of applying those previously informal design methods to an array of complex problems that were not traditionally seen as design-related.

As a result, “design” and “design thinking” are often used interchangeably within the design community itself. But in actual engagement between the design and business communities, the term used to describe that cohesive, human-centric process is “design,” not “design thinking.” For example, there are no chief design thinking officers. There are chief design officers. There are no design thinking teams. There are design teams. There are no design thinkers. There are designers.

How Design Thinking Can Be Used to Integrate IT and Digital Design Teams
CIOs must operate on the basis that “design” is the formalized empathetic, human-centric process by which an organization finds and solves business problems. CIOs should not fall into the habit of using “design” and “design thinking” interchangeably. Enterprises need to do design, with designers, working in design teams and, possibly, led by a chief design officer.

Design thinking, therefore, should be understood in what is becoming its deeper conceptual meaning and in its practical and common execution.

At the conceptual level, design thinking is an aspiration — that efforts to create an enterprisewide design capability will result in the perspectives and mindsets that underpin the work of designers pervading throughout the organization. In this way, it represents a shift. Staff move away from thinking that design thinking is something designers do when they’re doing design work to something that is core to the identity and competitive differentiation of the organization as a whole.

Before this can be achieved, design thinking must be implemented in a more pragmatic fashion, one that forms a connective tissue between design teams and the rest of the business. The overwhelming manifestation of this is the design thinking workshop. These are, largely, structured engagements whereby a diverse team of staff members collaborates with designers within a defined range of the design process.

CIOs carry some responsibility to ensure that design thinking workshops are conducted in a way to ensure tangible outcomes. To help in meeting that responsibility, CIOs should refer to the following research:

- Getting the Most Out of a Design Thinking Workshop

With this foundation, a template for running a design thinking workshop can be found in this research:

- Ignition Guide to Conducting a Design Thinking Workshop

**Allow IT Developers to Work in Digital Design Teams**

The basis of successful business-IT alignment is effective interaction. However, digital design, as a business function, is quite different. Because digital design teams are ultimately seeking to deliver digital products and services, integration rather than alignment will be the challenge that CIOs need to manage.
It should be highlighted that the integration of digital design and IT isn't always a given, in all circumstances. Internal digital design teams have the ability to engage outside system integrators or other technology providers in areas that might normally be conducted by the IT organization. In certain scenarios, resources normally hired into IT might be brought into a design team (most likely where there are existing R&D teams).

With that said, application development will be the most likely focal point for the integration between digital design teams and IT. A common approach being taken is to find a place for designers within agile teams. By doing so, the belief is that the business alignment of the agile team is expanding and that the allocated designers are the means by which the voice of the customer is being heard (see Applying Agile to the Development Process). This approach to digital design-IT integration is a convenient approach for CIOs because:

- Design headcount falls under the budget and management oversight of design management being matrixed into application development.
- Digital design work ends up adhering to IT governance practices, which can be controlled better through agile teams that ultimately roll up to the CIO.
- It creates the perception that digital design is being applied across a broad portfolio of digital products and services.

However, because an approach is convenient for the CIO doesn't mean it will be in the best interests of the enterprise.

A major flaw in this approach to integration is the order of work. From a design perspective, software development is a late-stage phase in the broader design process. Therefore, a significant amount of other design work needs to occur before software development can commence. This, in turn, means that agile teams should ultimately be guided by designers who collaborate closely with product owners.

Unless an enterprise has already established a strong design culture, embedding designers into agile teams stymies that outcome. Designers end up being individuals, or minorities, within engineering-centric agile teams. The team's impulse is overwhelming to direct design work into a late-stage development phase focused primarily on UI and graphic design. For designers, being deployed into an agile team can be disempowering and career-limiting. This problem is so pernicious that designers refer to this as “being exiled to agile island.”
Ultimately, design work becomes substandard. Compelling experiences aren't created. Designers become disillusioned and leave. CEOs are left wondering why their strategic objective of establishing an enterprise-scale digital design capability is stalling due to persistent staff churn.

CIOs must proactively seek to integrate digital design and IT in a way that helps an organization achieve its broader goals. To do that, CIOs should start by becoming comfortable with the digital design process and how it is distinct from traditional software development models (see An Insight Into the Digital Design Process for CIOs). With this insight, the CIO should engage with other executive leaders and assess how the organization as a whole is progressing toward the aspiration of design centricity implied in the broader view of design thinking.

If the consensus view is that the journey is still being undertaken, CIOs can take specific actions to help the enterprise go down that path. How? CIOs can avoid embedding designers into agile teams within the IT organization. Instead, CIOs should offer development resources to digital design management as a shared resource. In other words, CIOs should reverse the order — that is, they should embed developers into digital design teams.

Doing this allows digital designers to operate within a design team, conducting full-cycle design. It’s through this approach that design capability grows. As design capability grows, a design culture emerges that attracts designers to the organization. A self-sustaining digital design team, delivering compelling digital products and services through full-cycle design, is what ultimately propels an enterprise toward a design-centric perspective that is the aspiration side of design thinking. When that emerges, CIOs are then in a position of integrating designers into agile teams that understand, appreciate and welcome the opportunity to be design-centric themselves.

For more details on how these different organization design models look and operate, CIOs can refer to the following research:

- How to Create a Digital Design Team and Best Apply It Using an Agency Model

**Evidence**

This research is based on analysis of Gartner inquiry data, as well as on the following sources:
Note 1: Digital Design as the Largest Segment of the Design Economy

The “design economy” is defined as the culmination of all categories of design. There has been a 51% increase in digital design employment between 2010 and 2016 — the result of which, 40% of employment in the design economy, the largest segment, is in digital design. This is a significant growth, given that digital design as a category in the design economy is the newest segment. Source: The Design Economy 2018: The State of Design in the UK, Design Council.

Note 2: Digital Marketing Agency Market

Over 70% of the digital marketing agency market is made up of firms earning less than $1.5 million. Source: 2019 Digital Marketing Agency Industry Report, Promethean Research.

Note 3: Mergers and Acquisitions in the Digital Design Market

“The past four years have seen an almost unprecedented wave of mergers and acquisitions in two seemingly unrelated fields. On the one hand, giant advertising firms like WPP, Publicis, and Omnicom have swept up a huge number of digital marketing agencies. On the other hand, IT system integrators and consulting firms like IBM, Accenture, and Deloitte have been busily acquiring design consultancies.” Source: The Convergence of Systems Integrators and Digital Agencies, LinkedIn.

Note 4: Digital Design Process

Figure 2 shows the types of activities commonly seen across the five steps in the digital design process.
Figure 2: Types of Activities Commonly Seen in the Digital Design Process

Types of Activities Commonly Seen in the Digital Design Process

- Ethnographic Surveys
- Big Data Analysis
- Split A/B Testing
- App Intelligence
- Agile Software Development
- Wire Frames
- Composition
- Validation Testing
- Personas
- Journey Maps
- Mood Boards

The Standard Design Process Adapted to Digital Material

Source: Gartner T33400_C

Note 5: Main Accountable Owners of Customer Experience

The survey asked, “If you were to pick the main accountable owner(s) of ‘Customer Experience’ in your organization, which would it be?” Respondents across three role categories (product or business owner, engineering or tech, and design or research) collectively selected “Design” as that role. Source: J. Maeda, 2020 CX Report, Page 36.

Recommended by the Author

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A CIO's Guide to the Chief Digital Officer
How to Build a User Experience Team
Getting the Most Out of a Design Thinking Workshop
Ignition Guide to Conducting a Design Thinking Workshop
Applying Agile to the Development Process
An Insight Into the Digital Design Process for CIOs
How to Create a Digital Design Team and Best Apply It Using an Agency Model