



Human-Centered Software Design: A State of the Marketplace

RESEARCH STUDY





Introduction

Technology is the engine running our digital world, yet too often the experiences we engage in lack the finesse of applications built with humans in mind. Clunky, inaccessible interfaces hamper what should be seamless interactions. Even more so, for people with disabilities.

Enhancing the standards for human-centric software development is not only good business practice, it's the right thing to do. And increasingly, it's becoming law. Regulators are no longer waiting for voluntary corporate action. In September 2022, the US Congress introduced the [Websites and Software Applications Accessibility Act](#) with parallel bills making the rounds in House and Senate committees. The [European Accessibility Act \(EAA\)](#) goes into effect in 2025, placing further requirements on both public and private organizations to provide equal access to digital services for all, regardless of ability. With governments passing legislation, inaction on human-centric design is no longer an option.

What's more, research shows [billions of dollars are lost by inaccessible brands](#) when compared to their accessible counterparts. Yet despite much conversation about human-centric design, little is currently understood about the state of the corporate landscape in adopting these best practices.

The Progress team sought to better understand the challenges, obstacles and opportunities of embracing human-centric software development. How mature are organizations in their practices and is the approach even on their radar?

Methodology

To answer these questions, Progress commissioned a worldwide study from Insight Avenue, a research firm in the United Kingdom specializing in business-to-business technology research. The team conducted 705 interviews with application developers and IT decision makers in organizations with over 250 employees. Respondents from 13 countries participated, hailing from the US, UK, France, Germany, Sweden, Poland, Czechia, Slovakia, Bulgaria, India, Australia, Brazil and Mexico.

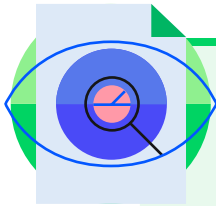
Study Highlights

Nearly every organization participating in the study acknowledged the importance of human-centric design, yet a wide disparity remains between intent and action. While 98% stated human-centric software development is important, only 34% are currently addressing the issue through tools, training and policy. Hope remains, however, as 62% of respondents have at least begun their journey toward human-centric design. Noteworthy barriers mentioned are the speed of development while meeting customer demands (42%), complexity and lack of agility (41%) and lack of in-house skills (29%).



What Is Human-Centered Software Development?

According to the [Harvard Business School](#), “human-centered design is a problem-solving technique that puts real people at the center of the development process... creating products that resonate and are tailored to audience needs.” In terms of software development, human-centered design refers to building applications and websites that are easy and comfortable to navigate across a diverse community of users, including different mental and physical abilities, demographic and personality factors, differing emotional reactions to technology, as well as diverse language and cultural backgrounds. Accessibility features can include using mobile operating systems in dark mode, zooming in or adjusting text size, dictating text and conducting voice searches.



Viewed in aggregate, three overarching findings emerged from this study:

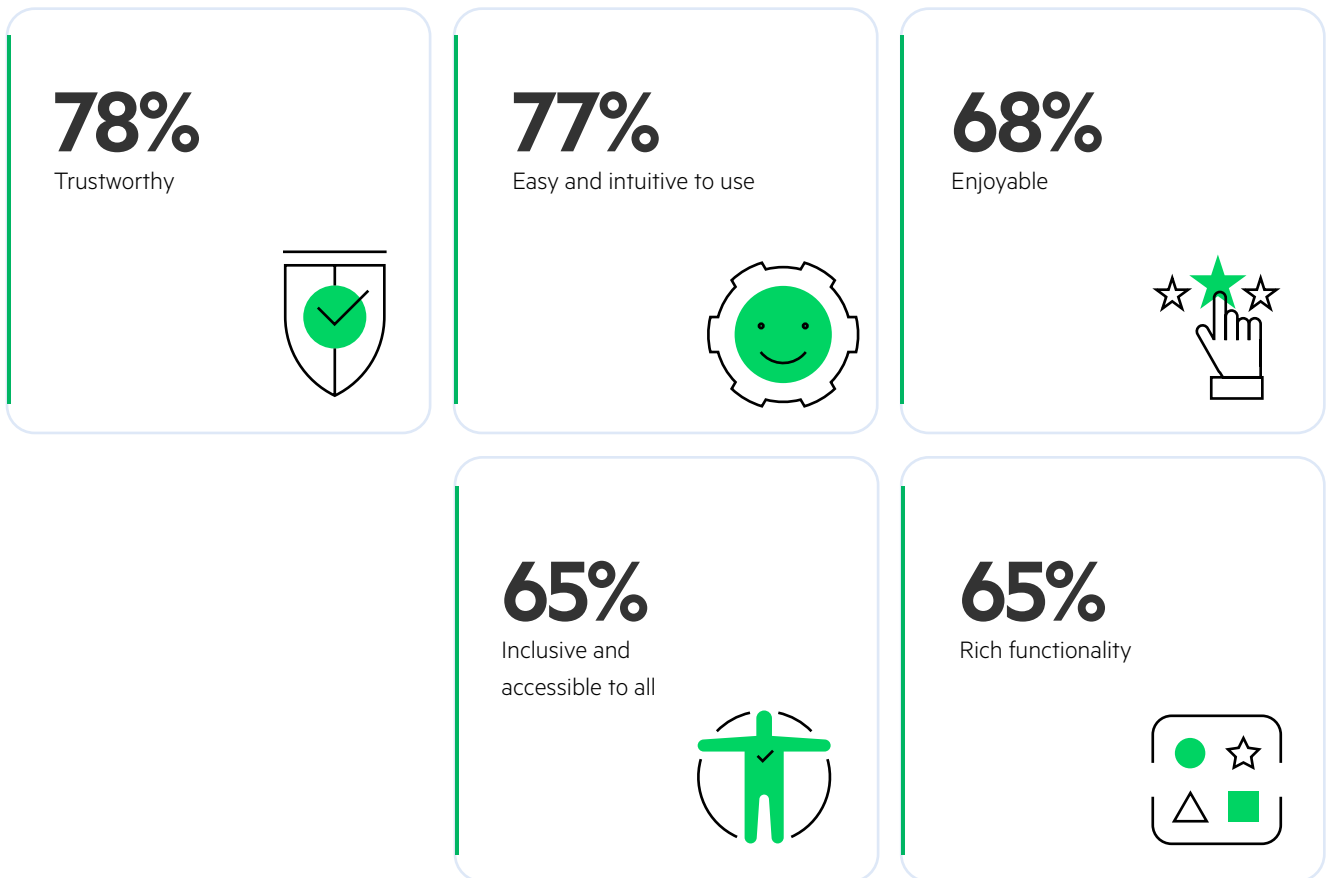
- 1. Organizations see it as important to build human-centric software, with urgency growing versus two years ago. However, organizations are losing ground to competitors because of confusion around the tools and processes needed to proactively engage in human-centric design.*
- 2. Human centricity means rethinking both digital experience and the application development process. Organizational maturity in building human-centric applications varies, with the biggest cohort seeing themselves as “advanced” and very few at the novice or emerging end. Unfortunately, this self-assessed view of their maturity contradicts the reality of their application development efforts and processes.*
- 3. Normalizing human-centric application development requires training, improved collaboration, cost-effective approaches and working with partners and suppliers who prioritize essential protocols and metrics.*

This report will take a closer look at these findings. Then, provide actions forward-thinking organizations can adopt to keep pace with increasing regulations, workforce expectations and consumer demands.

Study Findings

What makes software human-centric?

A compelling, human-centric digital experience depends on five core pillars:



There is an obvious overlap between all of these, as it is unlikely for an enjoyable experience to not be an easy and intuitive one. That said, the list above should be the end goal of product development, lighting the path for those seeking to adopt a human-centric approach.

Time is running out to get it right

Seventy-six percent (76%) of respondents consider building human-centric applications more important than it was two years ago. Driving this increased prioritization are a mix of business considerations and wider cultural shifts. These include ever-changing user needs/ increasing user expectations (56%) and a rapid increase in digital interactions (56%).

Other drivers include:



The increasing influence of Gen Z workers and the need to address diversity and inclusion show that organizations are not just seeing human-centric design from a product point of view. Business metrics such as talent retention and corporate reputation are factors as well. With tech companies in a constant [battle for top talent](#), prioritizing human-centric design is yet another way for companies to stand out in a crowded marketplace.



Maturity levels vary by organization

To gauge maturity, practitioners agree on five basic design principles:

- Defining users' needs and problems
- Ideation
- Empathizing with users
- Testing
- Prototype production

But the extent to which organizations are applying all of these varied considerably. Only 12% apply all five tenets, showing themselves to be mature. Forty-seven percent (47%) address three or four, ranking as average. The final 41% score as immature, only addressing one or two.

Despite the data showing the majority of organizations were immature or average, 57% stated they believe they applied these design thinking principles entirely when creating a framework. In other words, organizations believe their practices to be mature despite not displaying mature practices. This disconnect between reality and perception shows the need for greater self-awareness and rigorous internal benchmarking to accurately reflect an organization's human-centric design maturity.

Retrofitting applications isn't the answer

Respondents surveyed said it was harder to retrofit inclusion and accessibility into existing applications (86%) than factor them into new applications from the start (71%). A full 83% said it was either very or quite challenging to attempt retrofitting.

This presented a barrier for organizations left marketing inaccessible applications or incurring the difficult task of retrofitting applications while simultaneously innovating new software. It is a choice many organizations found too taxing to entertain. This is especially true for those lacking visibility into the state of their current application portfolios. Of respondents, only 49% had fully integrated accessibility testing into their software delivery process. Seven percent (7%) didn't know how many of their applications met accessibility requirements. This made it even more difficult to assess the risks and benefits of retrofitting existing applications.

Most worryingly, an average of only 59% of current applications were estimated to meet accessibility requirements. This statistic conveys the magnitude of the task ahead for organizations seeking to realize a fully human-centric digital approach.

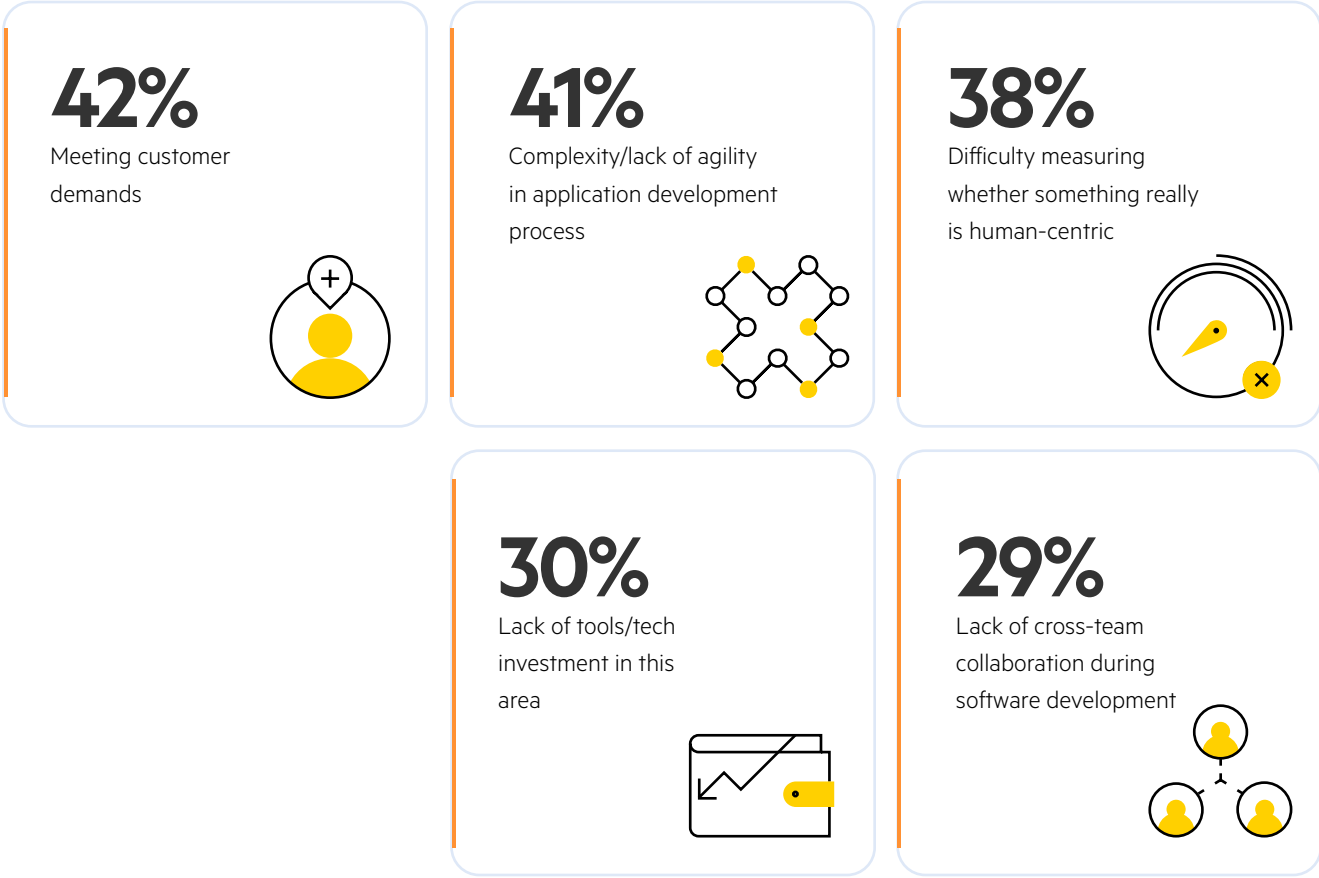
Yet those delaying accessibility work will soon regret that decision. There are over a billion people worldwide who live with a disability. Research has shown that people with disabilities are over [50% more likely to face barriers to accessing digital and online services](#) than those without disabilities. With a wide range of accessible technologies now available, users will no longer tolerate being disenfranchised. They will and are simply seeking competitive solutions elsewhere. Embracing human-centric design, therefore, has become a business imperative.



The Challenges Are Real

Despite the clear and urgent need to embrace human-centric design principles, 97% of those surveyed are experiencing adoption challenges, with 71% calling them very or quite challenging.

Key areas of concern included:



Taken together, only 3% of those surveyed encountered none of the challenges presented.

Tooling can help, but confusion persists

Over half of respondents (51%) have considered technology and tooling investment to help build human-centric and accessible applications. When asked, survey respondents mentioned 33 different tooling solutions, demonstrating a startling lack of consensus about the best path forward.

Examples of tools include:

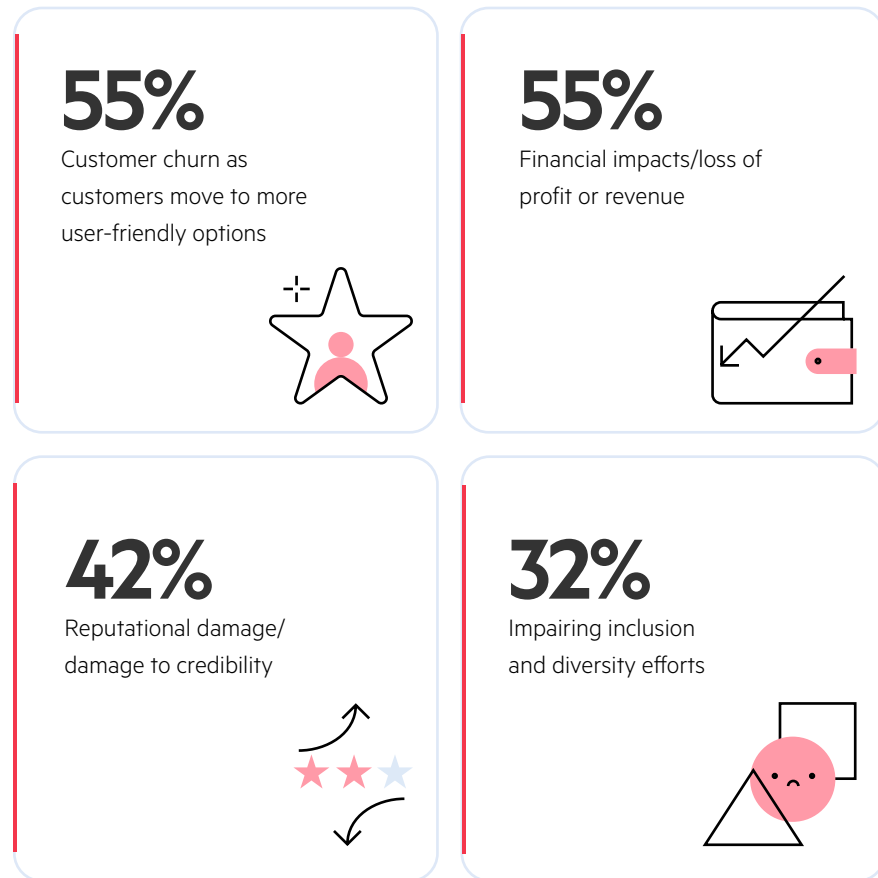
- AI and machine learning
- Chatbots
- Gamification
- AR/VR
- AIOps
- Assistive technology for motor disabilities
- Mobile device simulators
- Color contrast checking
- Voice recognition
- Behavior-driven development

With so many different types of technology, the prospect of decision paralysis is real. Survey findings show the importance of working with trusted partners to help build a cohesive strategy to avoid wasting time and resources.



Getting it wrong has serious consequences

When asked about the implications of not pursuing a human-centric software development strategy, responses ranged from customer churn to reputational damage:

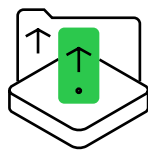


Additionally, compliance problems (31%), security and governance risks (27%) and loss of morale (23%) were raised as active concerns.

Any of these alone would be damaging to an organization's health and reputation. Taken together, they represent significant organizational risk, both in the short and long term. [Pressure is mounting](#) on technology companies to address human-centric design and development and the public is growing weary of inaction.



What are the urgent areas that need addressing?



56%

stated that investing in human-centric applications is a major need in the next 12-18 months

Based on survey responses, the most urgent need is training and skills development around human centricity and accessibility (51%). While organizations recognize their lack of knowledge in this area, most have yet to take steps to identify the right partners to both create and sustain the needed training.

After training, respondents mentioned the need for improved collaboration between teams (46%) and finding cost-effective approaches for designing, developing and operating human-centric applications (45%). Difficulty with collaboration has been a consistent barrier to business progress across our last three reports, including when trying to [address Data Bias](#) and when [establishing DevSecOps practices](#).

Two more areas of concern include working with partners and suppliers who prioritized human centricity (39%) and metrics that showed the value and support for the development of human-centric applications (38%).

Getting human-centric design right has serious benefits

Despite not always grasping the real dangers of falling behind competitors in human-centric design, those surveyed did recognize significant benefits of the approach:



Reputational uplift and competitive differentiation (49%) were also seen as significant benefits, alongside better retention of talent (49%) and greater societal good (46%). Beyond these, research has shown the financial windfall that can await those who embrace accessibility.

Tepid enthusiasm for change

When asked about broader actions that industries should take, 56% of respondents stated that more exploration in what optimal human design and accessibility looks like was the most important. This essentially kicks the can down the road, delaying action on a practice needing time and planning to get right.

To demonstrate that point, 39% of respondents believed higher accessibility standards/ more regulation to be the answer. It's rare that businesses want more government oversight, which spoke to their concern about taking any action at all.

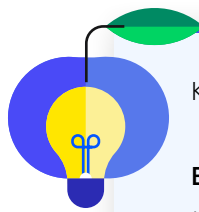
Finally, 38% believed there needs to be more of a focus on diversifying the application developer community.



Conclusion

The crucial march towards building a human-centric digital world

There is no simple fix for the issue of creating accessible applications built for the needs of a wide array of users and abilities. Eighty-three percent (83%) of those surveyed said that societal and commercial considerations must be balanced when it comes to human-centric applications. Yet this desire likely falls well short of marketplace needs and user expectations for applications that create an accessible digital world. With governments acting, and tangible business benefits established, there is a clear need for application creators to proactively pivot to invest in human-centric design.



Key areas to focus on are:

Better training of existing talent and more diversified hires: Upleveling talent within an organization can help clarify the best path forward when pursuing human-centric design. Existing teams can benefit from training programs or career paths centered on human-centric design practices, along with hiring diverse talent to help lead these efforts.

Objective self-assessment: A wide disconnect persists between perceptions of human-centric design maturity and business reality. To achieve the gains organizations want, they must first engage in more rigorous internal testing, cross-team collaboration and goal setting to settle on a clear current state. They can then partner with external vendors to bridge the gap—ever mindful of regulatory requirements.

More cohesive design principles and tooling: Organizations need a more cohesive strategy for human-centric design, and once conceived, measures must be taken to ensure they are routinely followed. With a strategy and goals established, it will be much easier to sift through available tooling and select the ones best suited to each organization's use case.

Time is running out for organizations to create an inclusive and sustainable human-centric digital world. Delaying will only make the path harder. Businesses not willing to properly invest in accessible user experiences will soon find themselves replaced by those who do.






About Progress

Progress (Nasdaq: PRGS) provides software that enables organizations to develop and deploy their mission-critical applications and experiences, as well as effectively manage their data platforms, cloud and IT infrastructure. As an experienced, trusted provider, we make the lives of technology professionals easier. Over 4 million developers and technologists at hundreds of thousands of enterprises depend on Progress. Learn more at www.progress.com.

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