

UX and Digital Accessibility Maturity Diagnosis in the Brazilian Technology Market: A Survey Study with Design and IT Professionals

Laura Tejada Vergara
0009-0000-3474-564X
State University of Londrina
Department of Computer
Science / Department of Design
Londrina, Brazil, 86057-970
Email: laura.tvergara@uel.br

Rodolfo Miranda de Barros
0000-0003-2792-4302
State University of Londrina
Department of Computer Science
Londrina, Brazil, 86057-970
Email: rodolfo@uel.br

Vanessa Tavares de Oliveira Barros
0000-0002-7229-6651
State University of Londrina
Department of Computer Science /
Department of Design
Londrina, Brazil, 86057-970
Email: vanessa@uel.br

Abstract—This study presents a diagnosis of User Experience (UX) and Digital Accessibility maturity within the Brazilian technology market. Through exploratory and descriptive research involving 55 Design and IT professionals, the study identifies a significant gap between theoretical knowledge and practical market application. While 75% of participants recognize the importance of UX, over 54% report that implementation is inconsistent or frequently subjected to budget cuts. The findings reveal that digital accessibility remains a critical weakness, with only 9% of professionals implementing it across all projects, despite 14.4 million Brazilians having some form of disability. The research concludes that the primary barriers to maturity are not a lack of professional interest, but rather an organizational culture that prioritizes rapid delivery and immediate profit over inclusion and user-centered quality. Consequently, the evolution of the field depends on shifting the perception of design from an aesthetic tool to a core business strategy.

Index Terms—UX Maturity, Digital Accessibility, User-Centered Design, Brazilian Technology Market.

I. INTRODUCTION

THE increasing focus on User Experience (UX) and Digital Accessibility in product development stems from various principles and contexts: from the search for competitive advantages in the market to the valuation of products that meet the actual needs of users. Despite the rights defined by the Brazilian Inclusion Law (LBI/2015) since 2015, which guarantees accessibility in digital products and services [1], adherence remains minimal: only 2.9% of Brazilian websites meet minimum accessibility criteria, including e-commerce and government sites (of which 89.96% failed the tests and criteria applied in the research) [2]. Within the Brazilian context alone, 14.4 million people have some form of disability, primarily visual impairments [3]. Conversely, research indicates that 54% of Brazilian companies face difficulties arising from a lack of technical knowledge and structured policies aimed at digital inclusion [4].

In this sense, despite the evolution of theoretical knowledge, methodologies, and research in Human-Computer In-

teraction (HCI), a gap still exists between knowledge development and practical market application. This gap can have several origins—frequently evaluated in recent decades through UX Maturity Models—ranging from a lack of specialized teams to an organizational culture that devalues accessibility and usability factors.

Therefore, the general objective of this work is to map the actual scenario of UX, User-Centered Design (UCD), and Digital Accessibility among Brazilian design and IT professionals to better understand this gap. To create solutions, it is essential to identify whether problems lie in a lack of knowledge, low valuation of professionals, or corporate culture.

The specific objectives include:

- Briefly analyze the concepts of UX, Accessibility, and Maturity.
- Develop and apply a research instrument for Design and IT professionals.
- Analyze the data collected.
- Identify levels of knowledge, valuation, and adherence to UX Design, UCD, and Digital Accessibility among these companies and professionals.

The methodology followed these steps: 1. Bibliographic analysis; 2. Development of the research instrument; 3. Pre-validation with researchers and professionals; 4. Online application of the instrument; 5. Descriptive statistical analysis and thematic analysis; 6. Discussion and conclusion.

II. THEORETICAL FRAMEWORK

A. User Experience (UX) and User-Centered Design (UCD)

The evolution of technology has transformed how users interact with digital products. The web has transitioned from an integrated network of computers to a synchronized network

of people, information, and services. In this scenario, users have moved from passive consumers to protagonists of interactions [5].

Although UX has roots in human factors studies from World War I [6], User Experience Design evolved significantly in the 1990s with authors like Norman and Nielsen, who deepened studies on the psychological and cognitive aspects of humans, contributing greatly to HCI [7].

In summary, UX involves research, design, implementation, and testing of interactions to ensure a positive, efficient, and intuitive experience. For Garrett [8], it is the process of creating products that provide meaningful and relevant experiences, encompassing branding, usability, and function. Norman and Nielsen [9] define UX as the sum of all interaction factors between a user and a company. They differentiate it from usability, which is an interface attribute related to learnability and efficiency, whereas UX is a broader, multidimensional concept. UX transcends aesthetics and concerns "how" products are delivered and how the user feels and behaves [10].

To achieve these solutions, the User-Centered Design (UCD) approach emerges. Its method places the user at the center of all development phases to validate design decisions based on empirical evidence such as interviews, surveys and usability tests. Through observation during testing, the creator's subjective assumptions are eliminated, yielding statistically empirical data on the user experience [10]. It is these methods that enable proper progression, identifying user needs and facilitating a path toward an objective solution.

Despite the simplicity of the concept, its implications are surprisingly complex. Everything the user experiences must be the result of a consciously made decision by the project's developers. The user-centered design process is what ensures that compromises in this experience do not occur by chance. This is achieved by breaking down the user experience into its constituent elements [8].

According to Earthy [11], the proper implementation of the DCU optimizes product creation and development time, contrary to the belief that incorporating UX and accessibility takes up too much development time. Actively listening to users prevents rework, ensures the implementation of truly necessary features identified late in the process, and avoids navigation and usability errors that, in the future, require more time and budget [10]. Earthy [11] further emphasizes that, although the user-centered process offers no guarantee of success, it significantly increases the chances that the system will achieve its objectives with quality. The idea is to understand the user and the context of use to offer an appropriate solution, based on concrete evidence and empirical validation.

B. Digital Accessibility

For Tim Berners-Lee, the creator of the World Wide Web, universal access—regardless of disability—is an essential aspect of its value and power [12].

Web accessibility is defined by Thatcher et al. [13] as the ability of any user, using any device, to understand and interact with the content of a website or application [12], and its

implementation and dissemination are essential to ensure that users with disabilities are not excluded from accessing high-quality products and services.

According to Guerra and Terce [5], accessibility seeks to ensure access to web content for as many people as possible, focusing on its functionality for users, regardless of their social, cultural, and/or physical-motor characteristics. This is achieved through the correct use of existing technologies, standardization in the development environment, and the adoption of best practices. Although there is a focus on the target audience and project expectations, accessibility aims to raise awareness of best practices so that websites and digital products can also be accessed by people with disabilities or those unfamiliar with the digital environment.

In Brazil, accessibility is enshrined in ordinary law, guaranteed by the Brazilian Law on the Inclusion of Persons with Disabilities (LBI/2015), which seeks to ensure equal rights, accessibility, education, health care, and employment for people with disabilities, with the aim of their full inclusion in society [1].

The World Wide Web Consortium (W3C) [14], a global organization focused on digital accessibility, describes web accessibility as the ideal that all websites, tools, and technologies should be designed and developed so that people with disabilities can use them. Users with disabilities should be able to perceive, understand, navigate, interact with, and contribute to the Web. Within this context, one of the organization's principles is "Web for All," serving as a benchmark for accessible development and web design. Through collaborative research, the W3C has developed guidelines for systems that assist in design and development processes, while also raising awareness about the importance of digital accessibility.

In addition to providing quality access to people with disabilities, digital accessibility also benefits people without disabilities, such as older adults, people with "temporary disabilities" (such as a broken arm or not having their glasses), those with situational limitations (such as environments where it is not possible to hear audio or where there is bright light), or those with slow internet connections [14]. Among the W3C's products and research, the "Web Content Accessibility Guidelines" (WCAG) [15] documentation stands out, considered one of the primary references when it comes to building accessible web pages for people with disabilities. These guidelines are widely used in the context of Human-Computer Interaction (HCI) and consist of a set of principles and guidelines aimed at resolving known problems, as well as solutions whose effectiveness has already been recognized.

C. Ux Maturity

Digital maturity is a company's ability to implement technologies to drive improvements in communication, processes, management, innovation, and various other aspects, metrics, and areas. UX maturity, on the other hand, is measured by the importance, involvement, and relevance of the user/customer experience and satisfaction in the development process of a project or product [16]. In other words, it assesses how user-

centered the company is across its various dimensions (strategic, financial, structural, among others).

In a globalized and digitalized world, it is extremely important for a company to develop robust maturity, both to remain competitive in a highly competitive market and to deliver modern, innovative, and effective products to customers. A company that lacks a user-centric focus tends to fail to understand users effectively, hindering the creation of appropriate solutions and potentially compromising customer loyalty.

Despite the significant development of the UX and UI fields, the increase in job openings and demand for professionals with experience and knowledge of User-Centered Design methodologies, as well as the wide availability of information in research groups, universities, and on the internet in general, it is not simple to make a company truly user-centered [17]. Maturity does not depend solely on the isolated efforts of a team [18] the occasional use of UX tools, or the mere intention to put the user first. It is directly related to organizational culture and User-Centered Design as an intrinsic value of the institution.

According to Schaffer and Lahiri [17], cultural change goes beyond the superficial level and delves into fundamental factors and organizational beliefs. For this reason, it should be the first aspect to be considered in the process of UX maturation. The organization needs to incorporate User-Centered Design into its culture. The extent to which the company and its leaders value and recognize the importance and necessity of UX from a business perspective is the most important indicator of the field's success within organization [19].

Software development and creation are activities of constant innovation and creativity, in which design should play an integrative role within development teams. However, in practice, this role has been reduced to the operational level—whether as a goal-setter, a source of added value for the product, or the application of user-centered methodologies—without significant involvement at the tactical and strategic levels [20].

Considering these issues, Bergamin [20] emphasizes the need to define and establish initial objectives and to delineate the scope of the designer's responsibilities. The author also states that this definition requires an understanding of key concepts related to the system to be developed, as the terminology, specializations, and roles within the field of design are diverse, broad, and often confusing.

III. METHODOLOGY

This study aims to analyze the maturity of UX and accessibility in the Brazilian technology market, identifying the knowledge, culture, and appreciation of professionals in the fields of design and IT regarding the topics under investigation. Understanding and analyzing this data is important for the continued development of technology, the identification of cultural gaps, and, above all, fostering organizational cultural appreciation of these topics.

To deepen our understanding of the issue, a questionnaire (Appendix A) was developed for professionals working in

UX, UI, Web Design, Development, and IT, with the aim of obtaining a more realistic and contextual view of the role of UX and DCU in the market. The research is exploratory and descriptive, employing a mixed-methods approach with closed-ended questions for quantitative data and open-ended, subjective questions for qualitative data—both of which are crucial for better understanding these professionals' perspectives on the research topics.

There is often a gap between theoretical research and practical reality, which makes this engagement with the target audience essential to identify their most common pain points and needs.

The data collection tool used is a questionnaire structured into seven sections:

1. Identification: information on field of work, years of experience, company size, age, and region, without personal identification.
2. User-Centered Design and User Experience Design: level of implementation, understanding, and appreciation of UCD and UX.
3. Culture and Multidisciplinary: appreciation of UCD, company/professional culture, and frequency of integration between technology areas.
4. Methodologies and Processes: methodologies, techniques, and tools most used and/or known by professionals, as well as operational processes.
5. UX Maturity: knowledge of "UX Maturity" concepts and maturity models
6. Digital Accessibility: adoption, knowledge, and challenges in implementing accessibility.
7. Open Discussion: an opportunity to discuss the challenges of improving user experience and digital accessibility in Brazilian technology companies.

This framework was designed to address the following key objectives: to identify and analyze the relevance, adherence, and level of knowledge regarding UX, DCU, and Digital Accessibility in the daily work of professionals in the fields of Design, Web, and IT.

The purposive probability sampling is limited to professionals in specific areas of UX, UI, Web Design, development, and IT with the aim of understanding the actual work and knowledge within this market. The survey was distributed via links to the Google Form among design and IT groups and companies, requesting participation from professionals in the field. In total, 55 responses were obtained, including graphic designers, web designers, UX/UI designers, IT managers, developers (front-end, back-end, and full-stack), and IT analysts, ranging from freelancers to employees of large companies and civil servants.

Despite a limited sample size and geographic scope, the data obtained through the survey were rich and important for an initial market assessment, paving the way for an expanded sample in future studies.

IV. RESULTS AND DISCUSSION

A. UX Knowledge and Valuation

The results indicated that most of the participants value and recognize the importance of UX (about 75%) and apply, or attempt to apply, these methodologies in their work projects. In addition, a large proportion reported having moderate (30.9%) or high (nearly 50%) knowledge of the subject.

At the same time, although the level of knowledge regarding User-Centered Design was slightly lower compared to UX—with 27.3% indicating a level 3 on the five-point Likert scale (where 5 represents the highest level of knowledge), 25% a level 4 on the same scale, and 16% the highest level of understanding of the topic, application in work projects drops to 30% of applications across all projects and 34% of attempts to apply it without knowing if the implementation is correct.

B. UX Market Application

Another relevant finding confirms the gap between theoretical understanding and practical application of UX: 54.5% of participants believe that UX is implemented inconsistently, given low priority, or subject to budget cuts, indicating that the myth of excessive time consumption in UX implementation persists in practice despite evidence to the contrary, as Earthy [11] had already pointed out. Furthermore, 38.2% state that, when applied, it is done incorrectly, without processes, methodologies, or testing, which also confirms the lack of DCU implementation.

C. Organizational Culture and Careers

As for culture and multidisciplinary, the picture is mixed.

Regarding organizational culture, when asked about UX roles and efforts to foster their growth, although a significant number of respondents chose the options “There are no formal UX roles” (34.5%) and “UX roles may exist, but there are few UX professionals in the organization” (27.3%), the other alternatives also received significant support, except for “Job profiles and career plans for UX roles are well-defined and tracked throughout the organization,” which was selected by only one respondent. This reinforces the low valuation of UX professionals and their subfields in the business context and in technology projects, previously cited by Fraser and Plewes [19] as one of the most important indicators for the field’s success within the organization.

Multidisciplinary, on the other hand, proved to be present and relevant in the projects. 45.5% of respondents selected “Yes, I ask questions and talk to people from other stages and areas of the project,” 18.2% selected “Yes, I carry out the entire project in collaboration with other areas,” and 18.2% selected “Sometimes, if necessary.”

When comparing the valuation of the areas, it is evident that UX receives greater recognition, with ratings of 3 and 4 on the Likert scale accounting for over 50% of respondents, compared to DCU, whose valuation index was lower, notably with 30% selecting 1 (the lowest level on the Likert scale) for valuation.

D. Methodologies and Processes

When it comes to methodologies, there is a wide variety: 30.9% use them in most projects, 30.9% only in some projects but without a fixed pattern, 23.6% in all projects, and 14.5% do not use any. The most frequently cited tools were briefing (37 mentions), high-fidelity prototype (29), interviews (27), wireframe (24), benchmarking (22), and questionnaires (20).

A large portion of respondents stated that they felt the lack of a predefined and organized methodological process for project execution (27.3% “Sometimes” feel this lack, 16.4% “Frequently,” and 34.5% “Yes, I would like to have organized and predefined stages for projects and teams”) and, for the most part, use a different process for each project they work on, not following a standard (34.5% of responses to the question “When creating/developing a project, do you use a process/step-by-step guide?”).

The lack of process standardization and the high interest in following a structured process, in addition to serving as a possible indicator of adherence to methodologies and frameworks if presented, align with Bergamin’s [20] statement regarding the designer’s role being reduced to an operational one without strategic involvement, resulting in improvised and unstructured processes.

E. UX Maturity

Regarding UX maturity and maturity models, it was found that the topic is not yet widely known. 43.6% have never heard of the concept of UX Maturity, which corroborates Schaffer and Lahiri [17], who argue that making a company truly user-centered goes beyond mere intention, requiring a consolidated organizational culture—something that is difficult to build without knowledge of the very models that guide this process. 23.5% are unfamiliar with it but have heard of it, 20% know a little about it, and only 10.9% know it well.

As for implementation, 78.2% have never attempted to implement a maturity model, and 12.7% have tried but were unsuccessful. 7.3% are currently implementing a maturity model.

F. Digital Accessibility

In the field of digital accessibility, about half of the participants reported to be familiar with basic concepts and guidelines (49.1%). The same percentage (49.1%) recognized the extreme importance of the field, and 32.7% rated it as “very important.” However, 45.5% stated that they do not implement accessibility in their projects, even though they expressed interest, and 32.7% indicated implementation in some projects and products. Only 9% implement digital accessibility in all projects. These results suggest implementation challenges, whether due to a lack of knowledge, cultural barriers, or a lack of institutional priorities, underscoring the importance of organizations like the W3C for raising awareness about Digital Accessibility and the need to develop guidelines such as the WCAG.

61.8% of respondents reported “considerable interest” in implementing accessibility, and 36.4% reported “some interest.”

TABLE I.
MAJOR CHALLENGES FOR IMPLEMENTING UX AND ACCESSIBILITY IN THE BRAZILIAN MARKET

“I believe the biggest challenge lies in the project costs. In some cases, it becomes more difficult to demonstrate the ROI of UX to the company, which leads to a focus solely on delivering results more quickly, causing important stages of the UX/accessibility process to be neglected and, in most cases, omitted from the product development process.” “Most of the time, the priority is delivering features to customers in general; deadlines are usually tight, and companies focus on meeting them without giving the necessary attention to other important related matters. They try to fit only the basic concepts into these deadlines, without going into depth, often with the idea that they will work on improvements in the future—which, in most cases, does not happen, as another feature ends up taking priority over improving previous ones. In short, the focus is on delivering features to customers, generally as quickly as possible, at the expense of better quality in the delivered product.” “Understanding the importance and value of this, and how it is a worthwhile investment because it significantly increases the user base.” “A lack of infrastructure for testing and validating results, as well as a lack of time.” “Democratizing knowledge by offering a practical way for companies to get involved in projects with minimal infrastructure.” “To value design as a means of enhancing a product’s value and reach, not merely as an aesthetic tool.” “Convincing business owners of this is important. Today, what matters is delivering a product quickly, and a lack of time prevents that. What matters is having a ‘Register’ button that registers, a ‘Delete’ button that deletes, and a ‘Search’ button that searches. The rest is a bonus if there’s time left over.” “The realization that everyone has equal rights to access technology and that we must ensure this.” “The recognition and importance that the UX field should have—and this also includes the issue of accessibility. In my experience as a UX Designer, I’ve always felt that we constantly had to prove ourselves useful and relevant. And that people only think about the user experience when things start to go seriously wrong. As for accessibility [...], where I worked, this was never a priority. Even though I talk about the importance of developing minimally accessible solutions, this isn’t implemented.” “A lack of empathy toward people with disabilities, for example, because I believe they are viewed as ‘economically inactive’ (they are not ‘consumers’). I believe that when we think about developing products or services, we are more likely to focus on the public or a specific niche—in other words, we exclude people with disabilities. We overlook digital literacy; we overlook the digitally semi-literate or illiterate; lack of human resources; lack of resources and dedicated computing devices for accessibility; lack of time and lack of money. Lack of will.” “The awakening of awareness among corporate executives.” “[...] In my view, user experience is not given much priority, and accessibility even less so, despite their importance. I see that there are still many barriers: 1) Lack of knowledge on how to apply these concepts in practice; 2) the need for rapid delivery (and improving the user experience takes time!); 3) lack of a structured methodology to support developers/analysts; 4) high cost of appropriate tools. [...]” “I believe that, fundamentally, the lack of budget for these projects makes it difficult to delve deeper into UX and accessibility.” “Time. Typically, the development and implementation timeline is far too short for a project to mature properly. [...]” “Cultural factors: unfortunately, there is a culture of ‘US’ (analysts, technicians, developers) versus ‘THEM’ (users). Project funders have a massive tendency to focus solely on deadlines and costs. There should be a robust “certification” for digital inclusion and UX in projects, so that companies with the SEAL on their products would be more highly valued, and LGPD-style regulations for products that require inclusion.” “Tech companies and customers are interested in this too. Everything is designed for fast delivery. The priority is always speed, and conversion comes second. [...]” “Convincing the team and management of its importance—that it’s not a waste of time and that it contributes significantly to the software’s overall performance.” “Some companies lack interest, or even when they do have interest, the initiatives end up not being implemented effectively—either due to a lack of well-planned processes, time, or budget.” “The biggest challenge is the lack of understanding and the undervaluing of the user experience. Companies need to adopt a more inclusive approach to this issue, investing in resources and training to foster a better culture.” “Many companies prioritize delivery time, meeting tight deadlines and delivering products as quickly as possible. This forces designers to skip steps in the process, and this often happens during the accessibility planning phase. I believe this stage is fundamental and should not be glossed over, as a good product must be accessible to everyone, and unfortunately, we don’t have time to think through and test everything within such tight deadlines. In short, it seems to me that most companies focus on production speed rather than product quality or functionality.” “The biggest challenge is time and money. Companies generally don’t prioritize investing to make the product affordable.” “I believe that [...] the issue lies in a lack of depth in the subject matter, combined with a shortage of investment—both in terms of time and financial resources. I feel that we have an ongoing mission to demonstrate the value of these areas through consistent deliverables, grounded in solid, well-targeted research. I realize that this type of delivery generates real value, fosters meaningful discussions, and positions us as autonomous professionals within institutions and the market itself. This approach contrasts with the reality of a market still dominated by shallow, superficial approaches—shaped by crash courses and an excessive focus on delivering nothing but pretty screens. Perhaps this ‘fast food’ model applied to design and technology is one of the main obstacles faced by those seeking to truly mature these disciplines within companies.”

The main difficulties reported regarding the implementa-

tion of accessibility were lack of priority/time (76.4%), lack of resources such as staff and user testing (58.2%), lack of knowledge (41.8%), and lack of budget (32.7%). Although the cultural factor stands out as the most critical, all these barriers are widely present in terms of teams' knowledge and know-how: 87.3% of respondents have never participated in training or capacity-building programs focused on digital accessibility. This lack of training and knowledge aligns directly with the lack of accessibility (only 2.9%) of Brazilian websites [2], as there is no maturity regarding the topic.

Regarding maturity models focused on accessibility, 49.1% stated they were unaware of them and had never heard of them, while 27.3% were unaware but had heard of them at some point, highlighting this low dissemination and application of accessible models.

G. Qualitative Analysis

In the final question of the survey, "In your opinion, what is the biggest challenge to improving the user experience and accessibility in Brazilian companies?", the responses—though optional—provided valuable insights. Several respondents indicated that the lack of an organizational culture is the main obstacle, as companies often fail to recognize the potential and value of these areas, prioritizing quick deliveries that are merely functionally acceptable. Table I presents some of these responses, spell-checked and highlighted to emphasize keywords important to this research.

V. SYNTHESIS OF FINDINGS

The responses clearly reveal a devaluation of both designers—who must constantly prove the value of their work through rapid, practical, and low-cost deliverables—and accessibility, which is often neglected because it is not perceived as a profit generator and is cut due to time or budget constraints. The main complaints converge on cultural factors, especially among senior management, and are reflected in issues related to process, methodology, budget, knowledge, and time. Thus, based on the responses, we conclude that:

1. There is widespread awareness of UX, accessibility, and their benefits among design, web, and IT professionals.
2. Management lacks appreciation and understanding of the importance of UX and accessibility (low awareness).
3. There is moderate interest, appreciation, and understanding of DCU.
4. Most use their own processes, without structured, fixed, and integrative methodologies.
5. Communication between departments is common (high level of multidisciplinary).
6. There is no methodological standardization in most cases.
7. UX and accessibility maturity models are rarely implemented.
8. There is high interest in and appreciation of Digital Accessibility among professionals.
9. The main obstacles to implementing accessibility are lack of priority/time, resources, knowledge, and budget.

10. The greatest challenges to the evolution of UX and accessibility in the market involve organizational culture, management awareness, time and budget constraints, lack of investment, resources, and process structuring.

VI. FINAL CONSIDERATIONS

Based on the survey results, it can be concluded that the Brazilian technology market still exhibits a gap between theory and practice: professionals are aware of and eager to apply these techniques, but the organizational structure acts as a limiting factor, particularly when it comes to digital accessibility.

The diagnosis confirms the clear gap between theoretical knowledge (75% of respondents value UX) and its execution in real-world projects (54.5% perceive implementation as inconsistent or subject to cuts), ranging from simple methodologies to more complex implementations.

Organizational culture, the factor most frequently cited in the survey as the main difficulty—along with a lack of time and budget in projects—must be addressed across the entire organization, not relying solely on designers and developers. Creating and maintaining a user-centered culture requires addressing various aspects, from budgetary considerations to management, which often faces cultural resistance stemming from the myth that UX and accessibility delay projects. This mindset focuses on immediate profit and accelerated delivery, consequently neglecting long-term value and the user base with disabilities (14.4 million people in Brazil).

For this evolution to take place, it is necessary to implement accessible and scalable frameworks and maturity models to guide and assist these organizations. Starting at the grassroots level with knowledge sharing and an understanding of the benefits of UX, DCU, and accessibility, and gradually expanding to include prioritization, resource allocation, training, and methods for implementing methodologies and continuous improvement.

It is not only due to a lack of culture; the low level of accessibility maturity reflects a lack of investment in technical training (87.3% have never received accessibility training). Without training, professionals' interest (61.8% are very interested in accessibility) does not translate into accessible products.

Thus, the market's evolution depends on the shift from design as an aesthetic and operational tool to design as a business strategy, prioritizing inclusion and quality of experience.

Despite the limitations of this study in terms of sample size—with intentional sampling and only 55 respondents—as well as its geographic scope, it is already possible to identify and validate the lack of development of user-centered technology that prioritizes accessibility.

It is hoped that, in future studies, this research can be expanded to include larger samples (both geographically and in terms of the range of professionals), with studies conducted by sector or company size, identifying different levels of maturity within the same company and incorporating longitudinal validation. Additionally, it is hoped that, in conjunction

with maturity models, this work can contribute to efforts aimed at making technology more accessible.

APPENDIX

Appendix A - Survey: The State of UX and DCU Maturity

This survey was developed to gain an understanding of the state of User-Centered Design in companies and UX and IT teams.

Responses are anonymous, and your data will be protected.

Instructions for participants:

Hello! Thank you very much for taking part in this survey!

This short survey aims to understand the state of User-Centered Design in companies and UX and IT teams.

Your honest and transparent input will help us develop a step-by-step framework to implement and improve User-Centered Design (encompassing UX, UI, IT, and Accessibility) at different levels of maturity.

Duration: approximately 10 minutes.

Responses are anonymous and data will be protected.

Questionnaire

1. What is your profession? If you are applying for an internship, please select the roles that best match your day-to-day activities and the internship plan.

- ☐ UX/UI Designer
- ☐ Graphic Designer
- ☐ Web Designer
- ☐ Front-End Developer
- ☐ Back-End Developer
- ☐ Full-Stack Developer
- ☐ Other

2. What is your age?

- ☐ 18 to 24 years old
- ☐ 25 to 34 years old
- ☐ 35 to 44 years old
- ☐ 45 to 59 years old
- ☐ 60+ years old

3. What is the size of the company you work for?

- ☐ Small company (studio, agency with up to 10 employees, etc.)
- ☐ Medium-sized company (consulting and marketing firms, IT companies, agencies with more than 10 employees)
- ☐ Large company (multinational corporations, IT companies, large agencies, etc.)
- ☐ Self-employed/freelancer
- ☐ Government employee / Public school teacher
- ☐ Private school teacher

4. How long have you been working (or how long did you work) in the fields of design, IT, and related areas?

- ☐ Less than one year
- ☐ 1 to 5 years
- ☐ 5 to 9 years

- ☐ 10 to 20 years
- ☐ More than 20 years

5. Where do you work (e.g., Paraná, São Paulo, etc.)?

Answer:

Section 2 – User Experience (UX) Design and User-Centered Design (UCD)

Let's begin the survey (:

This section of the questionnaire focuses on understanding the level of implementation, understanding, and relevance of UCD and UX in companies, institutions, and among professionals in the technology field.

Don't worry, this isn't a test to see how much you know about the subject! Our focus is on understanding the practical, day-to-day reality across different contexts.

6. What is your level of knowledge regarding User Experience (UX) Design:

I don't know ☐ ☐ ☐ ☐ ☐ I know quite a bit

7. What is your view on UX (User Experience Design)?

- ☐ I don't know much about it
- ☐ I'm familiar with it, but I don't care
- ☐ I'm interested, but it's not a priority or I don't have the resources
- ☐ I recognize its importance, but I find it difficult to apply
- ☐ I recognize its importance and try to apply it in some projects
- ☐ I know about it, recognize its importance, and apply it in all my projects

8. In your company, what do people think about UX?

- ☐ People don't know what UX is or have a toxic and problematic misunderstanding of UX
- ☐ There is awareness of the concept of UX, but limited understanding of the benefits it can provide (for example, it may be confused with visual design)
- ☐ Some individuals have a clear understanding of UX, but many others do not
- ☐ A consistent definition of UX is understood throughout the organization, but it is viewed as limited solely to interface design
- ☐ The definition of UX is not only consistent throughout the organization, but is also understood to apply beyond interfaces, to systems and processes

9. What is your knowledge of User-Centered Design (UCD):

I don't know ☐ ☐ ☐ ☐ ☐ I know quite a bit

10. In short, User-Centered Design is a methodology that believes the user should be at the center of any product's development. The user is the primary source of answers to questions and guidance; in other words, through testing, the user unconsciously points the way forward. For you, UCD is:

- ☐ Unnecessary

- ☐ Important, but unrealistic
- ☐ Important, but not a priority
- ☐ Important and should be a priority

11. Do you seek to apply a User-Centered methodology?

- ☐ I don't apply it because I don't think it's important
- ☐ I think it's important but don't apply it for other reasons (priorities, time, lack of knowledge)
- ☐ I try to apply it but can't do so consistently or don't know if I'm applying it correctly
- ☐ I always strive to follow the principles of User-Centered Design in my projects

12. In the development process, which of these factors do you consider the most important/highest priority:

- ☐ Good aesthetics (being visually appealing to users)
- ☐ An innovative experience (that the user is surprised and has a new experience when using my product)
- ☐ An easy and good experience (that the user can achieve the goals they sought even if this affects the aesthetics or requires removing elements and interactions)
- ☐ Accessibility (that as many users as possible can use my product, regardless of their means)

14. What are your biggest challenges in putting the user at the center of development? Whether through testing, surveys, or interviews, try to identify the most frequent or limiting challenges.

- ☐ I don't have any challenges.
- ☐ Culture (I'm not motivated to do so; it's not a company value)
- ☐ Knowledge (I don't know much about it; I don't know which path to follow)
- ☐ Structure (team, tools, budget)
- ☐ Processes (there is no process for projects)
- ☐ Time (it's not a priority within project deadlines)
- ☐ Other

15. Have you ever conducted any user testing?

- ☐ Yes
- ☐ No
- ☐ I don't know how to do it

Section 3 – Culture and Multidisciplinarity

I hope you're enjoying the questionnaire!

This section focuses on your culture and your company's culture regarding UX and DCU.

Having a strong and structured culture is essential for the company's growth. It is responsible for establishing and reinforcing values and beliefs.

16. If you work at a company, what are the UX roles like, and how does the company encourage UX professionals to advance in their careers?

- ☐ There are no formal UX roles.

☐ There are few or no UX roles, but some employees are self-motivated and take on UX work in addition to their regular duties.

☐ UX roles may exist, but there are few UX professionals in the organization.

☐ HR-related elements (job profiles, career plans) exist for UX, but career growth is not widely tracked.

☐ Job profiles and career plans for UX roles are well-defined and tracked throughout the organization.

☐ There are job profiles and career plans for typical UX roles (designer, researcher), but also for meta-UX roles, such as DesignOps and ResearchOps.

17. In a project, do you usually collaborate with other technology/communication/information teams?

- ☐ No, I work on my own.
- ☐ No, I work only with the team in my area.
- ☐ Sometimes, if necessary.
- ☐ Yes, I ask questions and talk to people from other stages and areas of the project.
- ☐ Yes, I carry out the entire project in collaboration with other areas.

18. If you answered "Yes" to the previous question, with which areas do you seek this integration:

- ☐ IT/Development Team
- ☐ Web Design Team (UX/UI)
- ☐ Graphic Design Team
- ☐ Communications Team
- ☐ Marketing Team
- ☐ Human Resources
- ☐ Other: _____

19. Do you feel that UX work is valued at your company?

Not valued ☐ ☐ ☐ ☐ ☐ Fully valued

20. Do you feel that your company values User-Centered Design? Does it have initiatives aimed at listening to end users, provide the budget and time for this to happen, and encourage user-focused employees and methods?

Not valued ☐ ☐ ☐ ☐ ☐ Fully valued

Section 4 – Methodologies and Processes

We're almost there!

This section focuses on methodological processes and procedures; try to select only what makes sense for you and your day-to-day work process.

21. Are you familiar with the methodologies listed below? Check the ones you know.

☐ Agile methodology: With a focus on the product, this methodology aims for constant improvements and changes based on feedback from users, customers, and the internal development team.

() Scrum: This involves creating backlogs, holding daily stand-up meetings to discuss and steer the project, and planning future actions. In this methodology, it is up to the team itself to identify and resolve emerging challenges.

() Lean: Every project is carefully examined in the initial phase, where the value to be generated for customers is the primary objective of all activities. If an action is worthwhile in light of this objective, it should be carried out; otherwise, it should be eliminated.

() Waterfall: In this methodology, a stage can only begin once the previous ones are completed. Actions are guided step by step.

() Kanban: Uses cards or sticky notes on a board to indicate and track the progress of production flows within companies. It is divided into “Backlog” (tasks to be performed), in-progress, and deliveries.

() Design Thinking: A practical and creative approach to problem-solving that focuses on people’s real needs, with stages such as empathy, ideation, and prototyping.

() Double Diamond: A design model that organizes the creative process into four stages: discover, define, develop, and deliver, helping to explore the problem and find the best solution.

22. Do you use development methodologies in your work?

- () No
- () I use them in some projects, but it’s not standard practice
- () I use them in most projects
- () I use them in all projects

23. What tools and methods do you typically use in your projects?

- () SWOT analysis
- () Competitor analysis
- () Heuristic analysis
- () Briefing
- () Blueprint
- () Interviews
- () User journey map
- () Personas
- () High-fidelity prototypes
- () Surveys
- () A/B testing
- () User testing
- () Wireframe
- () Others:

24. When creating/developing a project, do you follow a specific process or step-by-step guide?

- () I don’t follow any process.
- () I use a different process for each project (I don’t have a standard approach).
- () I have a “basic” step-by-step guide and adapt the tools and methods as I feel the project requires.
- () I use the same process for all projects.

25. Briefly describe your development process: E.g., I always start the project with a briefing and user interviews, followed by research, creating alternatives, and defining the final product.

Answer: _____

26. Do you feel you lack a methodological process with predefined stages when developing a project?

- () No, I don’t, because I have a defined methodology
- () No, I don’t like following methodologies.
- () No, but I’ve never tried to follow methodologies.
- () Sometimes.
- () Often.
- () Yes, I would like to have organized, predefined stages for projects and teams.

Section 5 – UX Maturity

Now we’re going to ask you a few quick questions about UX Maturity. In a nutshell, it refers to how advanced an organization is in terms of UX and DCU. Various maturity models aim to support the evolution and improvement of UX maturity through areas such as culture, expertise, knowledge management, and many others.

27. Are you familiar with the concept of UX Maturity?

- () No, I’ve never heard of it.
- () No, but I’ve heard of it.
- () I know a little about it.
- () Yes, I know quite a bit about it.

28. Have you (or the company you work for) ever tried to implement a maturity model?

- () Never
- () I’ve tried/we’ve tried, but it didn’t work out
- () I’ve tried/we’ve tried, and it worked out
- () We are currently implementing a model

29. If you are familiar with UX maturity, do you know of any existing models for increasing maturity?

- () I don’t know of any maturity models
- () NNGroup’s UX Maturity Model
- () Earthy’s Maturity Model
- () W3C’s Accessibility Maturity Model
- () Others:

Section 6 – Digital Accessibility

We’re almost done! This is the last section of the questionnaire, and it focuses on digital accessibility and its actual implementation in the market.

Although it is well-known and widely discussed, accessibility is rarely applied or prioritized in design and development projects. We ask you be honest and transparent so that the survey results are accurate and, in the future, can help create a model to support the implementation of accessibility.

30. Are you familiar with Digital Accessibility?

- ☐ I'm not familiar with it and have never heard of it.
- ☐ I'm not familiar with it, but I've heard of it.
- ☐ I know a little about it.
- ☐ I know the basic concepts and some guidelines.
- ☐ I know quite a bit.

31. To what extent do you consider Digital Accessibility important?

- ☐ I don't think it's important
- ☐ I think it's important when the product is specifically designed for it
- ☐ I think it's somewhat important
- ☐ I think it's very important
- ☐ I think it's extremely important

32. Do you implement accessibility in your projects?

- ☐ I don't implement it and have no interest
- ☐ I don't implement it but would like to
- ☐ I implement it in some projects and products
- ☐ I implement it in most projects
- ☐ I always implement it

33. What are the biggest challenges you face when implementing or attempting to implement digital accessibility?

- ☐ Lack of knowledge (about the topic or how to implement it)
- ☐ Lack of resources (staff, user research, etc.)
- ☐ Lack of budget
- ☐ Lack of time or priority in projects
- ☐ Other:

34. Are you interested in implementing Digital Accessibility?

- ☐ Not interested
- ☐ Somewhat interested
- ☐ Very interested

35. Are you familiar with the WCAG (Web Content Accessibility Guidelines)? The W3C accessibility guidelines.

- ☐ I'm not familiar with them and have never heard of them.
- ☐ I am not familiar with them but have heard of them.
- ☐ I am familiar with the guidelines in theory.
- ☐ I have in-depth knowledge of them.

36. Are you familiar with the W3C Accessibility Maturity Model?

- ☐ I am not familiar with it and have never heard of it.
- ☐ I am not familiar with it, but I have heard of it.
- ☐ I am familiar with it in theory.
- ☐ I am familiar with it and have used it.

37. If you implement accessibility in your projects, check the features you use or have used:

- ☐ Alternative text for images
- ☐ Alternative text for buttons
- ☐ High contrast for images and text
- ☐ Dark mode

- ☐ Keyboard navigation
- ☐ Large, highly legible fonts
- ☐ Use of images only when necessary
- ☐ Videos with captions
- ☐ Audio-only options
- ☐ Translation into LIBRAS/Sign Language
- ☐ Testing with users with disabilities (deaf, blind, among others)
- ☐ Others:

38. Have you ever participated in training or workshops on Digital Accessibility?

- ☐ Yes
- ☐ No

Section 7 – Open Comments (optional)

Thank you for making it this far! This section is optional, so feel free to share your thoughts or simply submit the form.

Your time and contribution are (and have been) essential to the development of this research.

If you are interested in receiving the final results, please send an email to laura.tvergara@uel.br.

39. In your opinion, what is the biggest challenge to improving the user experience and accessibility in Brazilian companies?

Answer: _____

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