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Evaluation of UX Maturity in Startups within the Entrepreneurship Program

By
Rachel Cosby

Constantinos K. Coursaris
Sylvain Sénécal
HEC Montreal
Co-directors of research

Sciences de la gestion
Specialisation User Experience

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Abstract

This study delves into the realm of user experience (UX) maturity, aiming to understand and enhance how small businesses in Quebec interact with technology. Grounded in the ISO 9241-210:2010 framework, the research assesses six organizations over a nine-month period in collaboration with the Tech3Lab. UX maturity measures an organization's ability to implement user-centered design effectively, encompassing research, design methodologies, resources, and operational frameworks. Higher UX maturity correlates with better alignment of products and services with user needs, leading to greater user satisfaction and business success.

This research assesses the UX maturity of six small Quebec-based companies over a nine-month period, incorporating insights from the Tech3Lab. The study aims to understand the growth in user-centered design practices and strategies within these companies. By focusing on small businesses, the research addresses their unique challenges and constraints, contributing to a nuanced understanding of UX maturity in different organizational scales. The longitudinal nature of the study allows for an in-depth analysis of factors influencing UX maturity over time.

Using empirical methods aligned with the Tech3Lab's research standards ensures systematic and validated assessments, enhancing the credibility of the findings. The local focus on Quebec-based companies adds a relevant dimension to the research, offering insights applicable to the regional business landscape. This study's objectives are to determine the typical level of UX maturity among small businesses in Quebec, assess the initial and subsequent stages of UX maturity, and analyze changes over time. The findings provide valuable insights for small businesses aiming to enhance their UX strategies and overall competitive edge.

By identifying key drivers and barriers to UX maturity, the study equips small businesses with actionable strategies to better integrate user-centered design into their operations. This not only improves the user experience but also strengthens their market positioning, fosters innovation, and increases their ability to compete effectively in a digital economy.

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- UX- User Experience
- NN/g- Nielsen Norman Group
- AI- Artificial Intelligence
- UCD- User-Centered Development

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Chapter 1: Introduction

Imagine a world where every digital encounter feels like a breeze- intuitive, effortless and point blank enjoyable. Welcome to the realm of user experience maturity, where companies strive to turn this dream into a reality, revolutionizing the way we interact with technology.

Clause 2.15 of the ISO 9241-210:2010, states that user experience is a "person's perceptions and responses resulting from the use and/or anticipated use of a product, system or service. Note 1 to entry: User experience includes all the users' emotions, beliefs, preferences, perception, physical and psychological responses, behaviors and accomplishments that occur before, during and after use. Note 2 to entry: User experience is a consequence of brand image, presentation, functionality, system performance, interactive behavior and assistive capabilities of the interactive system, the user's internal and physical state resulting from prior experiences, attitudes, skills and personality, and the context of use. Note 3 to entry: Usability, when interpreted from the perspective of the users' personal goals, can include the kind of perceptual and emotional aspects typically associated with user experience. Usability criteria can be used to assess aspects of user experience." UX maturity gauges both an organization's aspiration and capacity to effectively implement user-centered design. It evaluates the caliber and uniformity of research and design methodologies, available resources, tools, and operational frameworks, as well as the organization's commitment to nurturing and enhancing UX over time, evident in its leadership, workforce, and culture (Pernice et al., 2021). The higher the level of UX maturity, the more seamlessly an organization can align its products and services with user needs and preferences, ultimately leading to enhanced user satisfaction, loyalty and overall success. Therefore, in today's fiercely competitive landscape, it's imperative for companies to aim for the highest level of UX maturity.

This research topic involves assessing the UX maturity of six small Quebec-based companies over a nine-month period alongside touchpoints with the Tech3Lab, aiming to understand their growth in user-centered design practices and strategies. By focusing on assessing the UX maturity of these companies, this research directly addresses the needs of local businesses, providing valuable insights that can inform their UX strategies and practices. Small businesses often face unique challenges and constraints compared to larger enterprises. This research offers a nuanced understanding of how UX maturity evolves within the specific content of small companies, contributing to a more comprehensive body of knowledge on UX maturity across different organizational scales. By examining the growth of these companies over a span of 9 months with the Tech3Lab, this research offers a longitudinal

perspective on UX maturity. This allows for a deeper analysis of the factors influencing UX maturity over time, shedding light on the dynamics of UX development in small companies. The use of the Tech3Lab as a tool for assessing UX maturity adds empirical rigor to the research. By leveraging this established methodology, it is ensured that the findings are based on systematic and validated assessments, enhancing the credibility and reliability of the results. Focusing on Quebec-based companies adds a local dimension to the research, making it more relevant and applicable to the regional business landscape. This localized perspective can help inform policy decisions, industry practices, and academic research within the Quebec context. Overall, this research topic contributes valuable insights to the field of UX maturity assessment, particularly within the context of small businesses in Quebec, while also offering a methodologically strong approach to studying UX growth over time.

Start-ups and small businesses are critical drivers of economic growth, innovation and job creation. They represent a substantial portion of the global economy and play a vital role in regional development, especially in ecosystems like Quebec's entrepreneurial landscape. These organizations bring agility and creativity to their industries, often pioneering disruptive ideas and filling gaps overlooked by larger firms. By iterating quickly and staying close to their customers, small firms have potential to deliver higher relevant products and services that respond directly to emerging needs. Understanding how they develop capabilities, such as user experience maturity, is therefore essential, as their success contributes not only to local economic resilience but also to broader digital competitiveness.

However, start-ups and small businesses differ significantly from mature, larger organizations in ways that directly affect their ability to adopt structured UX practices. While larger organizations typically have established processes, dedicated UX teams, and access to specialized resources, small firms often operate with limited budgets, lean staffing and competing priorities. Decision-making may be faster but less formalized, and UX efforts are frequently driven by intuition rather than systematic research. Unlike mature organizations that can invest in long-term user-centered strategies, smaller firms are more focused on short-term survival, product-market fit and rapid delivery. These constraints create unique challenges for developing UX maturity but also unique opportunities: smaller firms can integrate UX thinking early and embed it into their culture before legacy systems rigid hierarchies take root. Investigating these differences is crucial to understanding how UX can be scaled effectively across different organizational contexts.

The following research objectives guided this study:

- Objective 1: Determine the typical level of UX maturity among small businesses in Quebec
- Objective 2: Assess the initial stage of UX maturity of each company
- Objective 3: Assess the new stage of UX maturity after nine months
- Objective 4: Analyze changes in UX maturity over time
- Objective 5: Identify and explain factors contributing to changes in UX maturity
- Objective 6: Assess the impact of UX maturity on small business operations and performance

Table 1- Student's Personal Contribution Table

These percentages do not take into account the support and input of the directors during this project.

Step in the process	Contribution
Research question	Identifying gaps in current literature and defined the research problem - Identified the problem and its implications - **50%** ● Defined research questions ● Identified the construct to be tested
Literature review	Conducting relevant research, read scientific articles related to the topic and wrote the literature review - **100%**
Conceptual and experimental design	Designing the experimental protocol - **0%** Creating the study interviews - **50%** ● Updated the questions for the second round of interview questions

	Creating the study questionnaire - **0%** ● Used the Nielsen Norman Group UX Maturity quiz for the companies to self-assess their level of UX maturity Applying to CER - **0%** ● This was handled by the Tech3Lab team.
Recruitment	Recruiting the companies for the study - **0%** ● The companies were chosen with specific characteristics by the Tech3Lab and the AsterX program. No monetary compensation was given to them.
Analysis	Conducting the analysis - **100%** ● Analyze the results on Optimal Workshop
Writing the thesis	Writing the thesis - **100%** My supervisors guided me through this process with their feedback that allowed me to perfect my thesis

Chapter 2: Literature Review

The literature review begins by focusing on several topics related to user experience (UX) maturity, i.e., the topics that formed the basis for this study. Topics include an introduction to UX, signaling the importance of it in product development and business context, the importance of UX for successful businesses and the definitions and understanding of UX maturity. This chapter also provides a relatively in-depth look at the factors that influence UX maturity, specifically those of the Nielsen Norman Group that were used to base the results on and the challenges and opportunities to achieve UX maturity. Finally, a case study of a company that improved their UX as well as the strategies they used to get there and how it impacted their business performance.

2.1 User Experience

2.1.1 Definition of User Experience

User experience (UX) is a multifaceted concept that plays a critical role in product design and customer satisfaction. User experience (UX) encompasses a broad spectrum of perceptions and responses arising from the use or anticipated use of a product, system, or a service. According to ISO 9241-110:2010 (clause 2.15), UX is defined as a user's emotions, beliefs, preferences, perceptions, and physical and psychological responses throughout the entire journey, from before, during, to after use. This formal definition is further explained by various interpretations in the literature. Norman and Nielsen (1998) assert that UX encompasses all facets of an end-user's interaction with a company, its services, and its products, highlighting its comprehensive nature. Nielsen Norman Group's early introduction of the term "user experience" in the 1990s marked a pivotal moment in human interface research, emphasizing the importance of understanding user needs beyond mere usability. Law (2008) expands on the multifaceted nature of UX, associating it with emotional, affective, experiential, hedonic, and aesthetic variables. Furthermore, another perception emphasizes the subjective, situated, and dynamic nature of UX, influenced by a user's internal state, system characteristics, and contextual factors. (Hassenzahl & Tractinsky, 2011) Despite being an emerging research area, UX remains context-dependent and subjective, characterized by evolving perception and changing emotions before, during, and after product use. UX goals articulate the intended experience, encompassing both pragmatic and hedonic aspects of product use (Kassinen et al., 2015) Similarly, Santoso and Schrepp (2019) highlight the subjective impression of UX, distinct from traditional usability criteria, focusing on users' subjective feeling during interaction. UX encapsulates all user interactions with a business or organization, including emotional

reactions, underscoring its holistic nature (Niranjanamurthy et al., 2014). Additionally, Ross (2014) emphasizes the impact of UX on various business metrics, including increased sales, customer satisfaction, and employee productivity, underscoring its importance for organizational success. Finally, Allam et al. (2013) underscore the multidimensionality and dynamic nature of UX, which extends across various research areas, including human-computer interaction and product design. As such, the concept of UX transcends traditional usability measures, encompassing the entirety of the user's interaction experience and its profound implications for business success and user satisfaction.

According to ISO 9241-110:2010 (clause 2.15), user experience is defined as "a person's perceptions and responses that results from the use and/or anticipated use of product, system or service" (Human-centered design for interactive systems, n.d., para. 2). This formal definition is supplemented by many other interpretations. Norman and Nielsen (1998) assert that user experience encompasses all aspects of the end-user's interaction with the company, its service, and its products (Norman & Nielsen, 1998). Nielsen Norman Group's early introduction of the term "user experience" in the 1990s marked a pivotal moment in human interface research, emphasizing the importance of understanding user needs beyond mere usability. It is described as the experience between a human being and a system, that goes beyond the human interface or usability, emphasizing the core understanding of the user's needs (Berni & Borgianna, 2021). Furthermore, Law (2008) elaborates on the wide-ranging nature of user experience, associating it with emotional, affective, experiential, hedonic, and aesthetic variables (Law, 2008). Hassenzahl and Tractinsky (2011) emphasize the dynamic nature of UX, influenced by a user's internal state, system characteristics, and contextual factors, describing it as "a subjective, situated, complex, and dynamic encounter" (Hassenzahl & Tractinsky, 2011). Additionally, Zarour and Alharbi (2018) highlight the context-dependent and subjective domain of UX, noting its evolving perceptions and changing emotions before, during, and after product use (Zarour & Alharbi, 2018). UX goals articulate the intended experience, encompassing both pragmatic and hedonic aspects of product use (Kassinen et al., 2015). Similarly, UX is characterized by subjective impressions, diverging from traditional usability criteria, as it prioritizes users' subjective feelings during interaction (Santoso & Schrepp, 2019). UX encompasses all user interactions with a business or organization, including emotional reactions, underscoring its holistic nature (Niranjanamurthy et al., 2014). Ross emphasizes the impact of UX on various business metrics, including increased sales, customer satisfaction, and employee productivity, highlighting its importance for organizational success (Ross, 2014). Allam and others stress the multidimensionality and dynamic nature of UX, extending across various research areas, including human-computer interaction and product design (Allam et al., 2013). It can be thought that UX is just a subcategory of experience, focusing on the experiences created and shaped by interactive products (Hassenzahl, 2013). UX can be studied in two

disparate stances, qualitative versus quantitative, and they are not necessarily compatible or can even be antagonistic (Law et al., 2014). The goal of user experience design in industry is to improve customer satisfaction and loyalty through utility, ease of use, and pleasure provided in the interaction with a product (Kujala et al., 2011). UX should not only be seen as something evaluable after interacting with an object, but also before and during the interaction, given its inherently dynamic nature (Vermeeren et al., 2010). The subjective nature of UX, which is affected by the user's internal state, context, and perceptions of the product, highlighting its multifaceted and dynamic characteristics (Väänänen-Vainio-Mattila et al., 2008).

2.1.2 UX: Business Imperatives

User experience (UX) is a driving factor for business success and outlines key reasons why companies need to prioritize it in order to gain competitive advantage. The impact of UX is multifaceted and crucial for business success. Good user experience not only increases sales and customer satisfaction but also enhances employee satisfaction, leading to improved productivity and reduced turnover costs. Moreover, UX reduces development time and costs, decreases the need for training and support, and ultimately increases productivity (Ross, 2014). The role of UX in user acceptance directly influences customer satisfaction and loyalty (Santoso and Schrepp, 2019). Similarly, UX can maximize sales, improve brand perception, and reduce customer dissatisfaction and churn rates (Niranjanamurthy et al., 2014). Good UX is increasingly becoming the goal for products and services across various markets. (Kaasinen et al., 2015). The growing importance of UX in human-computer interaction and interaction design, indicating its evolution from usability to a more holistic and desirable user experience (Hassenzahl and Tractinsky, 2011). While usability is important, designing for user experience requires integrating hedonistic psychology into product design. (Battarbee and Koskinen, 2010). Furthermore, the long-term relevance of UX for market success indicates a shift towards prolonged user experience evaluations. (Kujala et al., 2011). The increasing importance of UX in all aspects of the business world, highlighting the need for organizational commitment to achieving great UX design. (Chapman and Plewes, 2014). Finally, high-maturity UX has become a central competitive factor in consumer product development. (Obrist et al., 2009). Large companies like Google and Apple have integrated UX design as a fundamental principle contributing to their successes. (Fraser & Plewes, 2015). Lastly, the increasing demand for UI/UX professionals in the coming years is driven by several factors. Firstly, the integration of emerging technologies like augmented reality (AR), virtual reality (VR), artificial intelligence (AI), and voice user interfaces into digital experiences necessitates UI/UX designers with expertise in these areas to create intuitive and engaging interfaces. Additionally, the rapid growth of mobile applications underscores the

importance of UI/UX designers in crafting responsive, intuitive, and visually appealing mobile interfaces. Moreover, the dynamic and constantly evolving nature of the UI/UX field requires continuous learning and upskilling to stay competitive and adapt to new technologies and design trends. ("Top 10 UI UX Trends you Need to Know in 2024", 2023). The importance of UX in creating successful software has grown significantly in recent times. UX plays a pivotal role in influencing user engagement with a product or a service, as well as impacting the efficiency of task completion. This efficiency can greatly affect employees' productivity in accomplishing their job responsibilities. Therefore, it is imperative for organizations to prioritize the needs of their users during the software development process and to foster a culture of maturity in UX and user-centered practices. (Möller, 2018)

2.1.3 Challenges in Understanding and Evaluating User Experience (UX)

The multifaceted challenges associated with understanding and evaluating user experience, spanning both academic research and practical application in industry settings. There is a significant gap between academia and industry regarding the comprehension of UX, stemming from its dynamic, complex, and occasionally ambiguous nature.

The understanding and evaluation of user experience present challenges for both researchers and practitioners. There is a gap between academia and industry in comprehending UX, attributing this to its dynamic, complex, and sometimes ambiguous nature (Allam et al., 2013). These dynamic concepts vary from emotional, affective, experiential, hedonic, to aesthetics variables. Additionally, they highlighted the subjective inclusion and exclusion of variables, influenced by authors' backgrounds and interests. Similarly, there are ongoing struggles in defining and operationalizing UX qualities, particularly in the context of emerging research (Law et al., 2014). There is an importance in long-term user-product relationships for market success, contrasting with the predominantly short-term focus of UX studies. (Kujala, 2011). There is a disparity between the research community and product developers in understanding and evaluating UX; (Vaananen-Vainio-Mattila et al., 2008). This underscores the need for collaborative efforts to develop comprehensive evaluation frameworks that address the diverse needs and perspectives of both researchers and practitioners in the field of UX.

2.1.4 Understanding and Implementing User Experience Evaluation Methods

Evaluating user experience within the context of product development and design involves a range of complex considerations. It discusses the challenges posed by the subjective nature of UX and the

limitations of traditional usability metrics in capturing holistic user experience. Authors emphasize the need for comprehensive assessment methods that consider users' feelings and experiences throughout their interaction with a product.

Usability tests typically prioritize task performance, while user experience evaluation focuses on the lived experiences of users. Objective usability measures such as task execution time and error rates are insufficient for assessing UX due to its subjective nature; understanding users' feelings about the system is essential. Additionally, the importance of comprehensively assessing users' experiences, whether positive or negative, as a fundamental aspect of UX evaluation. (Vermeeren et al., 2010)

Various methods are employed for UX evaluation, including field studies, lab studies, online studies, questionnaires/scales, scenarios/sketches, and assessing products on the market (Allam et al., 2013). They suggest that User-Centered Development (UCD) remains crucial for designing positive user experiences, emphasizing the need to understand users' needs and values throughout the design process. The significance of evaluating user experiences before, during, and after product use, particularly in industry settings where resources for UX evaluation may be limited (Väänänen-Vainio-Mattila et al., 2008).

Furthermore, UX evaluation methods vary in their design and application, catering to different stages of product development and yielding quantitative or qualitative data depending on the method employed (Obrist et al., 2009).

2.1.5 Emerging UX Trends

The impact of demographic shifts, technological advancements, and emerging trends on user experience design emphases the need to address the unique needs of an aging population, to integrate cutting-edge technologies such as AI, and to adopt sustainable practices. It highlights the importance of applying best practices in UX design to enhance user satisfaction and drive economic growth while considering user-specific needs, historical contexts, and potential challenges in implementing new trends.

The demographic shift towards an aging population is a significant factor influencing emerging trends in user experience design (NNgroup, *US 2050 (Jakob Nielsen keynote),* 2021). As the number of elderly individuals increases globally, there is a growing need to address their unique needs and preferences in design considerations. Consequently, it is predicted that the UX workforce will expand substantially to accommodate these changing demographics. Nielsen stated that: "nowadays, certainly the designs are still

not perfect but user interfaces are much better than they used to be. This means that if we apply our good best practices, starting from a higher point, we cannot improve them by quite as much." (NNgroup, *US 2050 (Jakob Nielsen keynote),* 2021)

Moreover, the application of good UX practices has been shown to significantly improve design quality, as evidenced by measurable metrics (NNgroup, 2021). While the initial improvements were substantial, recent studies indicate a diminishing rate of improvement due to the higher baseline quality of modern designs. Nevertheless, the continued adoption of best practices in UX design remains essential for enhancing user satisfaction and driving economic growth.

In addition to demographic shifts, technological advancements such as artificial intelligence (AI) are rephasing operational efficiencies and accessibility, thereby impacting UX design ("2024: Top UI UX Trends you Shouldn't Overlook, 2023). Furthermore, several emerging trends in UX design for 2024 including a focus on privacy in research, the widespread adoption of multimodal AI, and the interaction of live speech technology to improve accessibility.

Other notable trends include the emphasis on responsive user interfaces for cross-platform usability, the integration of micro interactions for immediate feedback, and the adoption of 3D design and minimalism for aesthetic appeal ("Top 10 UI UX Trends you Need to Know in 2024", 2023). Sustainability considerations are also gaining traction, prompting designers to explore eco-friendly solutions in response to environmental concerns.

However, before adopting any UX trend, it is crucial to consider the specific needs of users, the context of use, and the underlying problem to be addressed (NNgroup, 2023). Testing trends with representative users and evaluating resource constraints are essential steps in making informed decisions about UX design strategies. Additionally, understanding the historical evolution of user needs and considering potential threats associated with unresolved problems can provide valuable insights for effective UX design implementation.

2.2 UX Maturity

The concept of UX maturity encompasses its definition, importance and the frameworks used to evaluate it, with particular emphasis on the Nielsen Norman Group's UX Maturity Model and its key factors.

2.2.1 Definition of UX Maturity

Achieving excellent UX design is not solely reliant on individual skills but deeply embedded within the organizational structure. Research in this area explores various models of UX maturity, highlights the importance of understanding an organization's maturity level for effective UX implementation, and discusses the significance of leadership and consistent practices across all organizational units. The section also underscores the need for consistent resources, leadership support, and process integration.

Achieving excellent UX design is not solely dependent on individual skills but is rather a characteristic embedded within the organization itself. Understanding the organization's level of "maturity" is an essential initial step toward enhancing the effective delivery of UX design and facilitating the organization's progression to the next level (Chapman & Plewes, 2014). Various models have been proposed to categorize and define UX maturity, such as those developed by Carraro (2014), Nielsen (2006), and Schafer (2004). Although these models may differ in terminology and breakdowns, they typically consist of 5-7 levels ranging from "unrecognized" to "institutionalized" (Sauro et al., 2017). For the purpose of this study, the Nielsen Norman Group definition of UX maturity was used.

UX maturity measures an organization's willingness and capability to successfully implement user-centered design principles. It encompasses the quality and consistency of research and design processes, available resources and tools, operational procedures, and the organization's commitment to support and enhance UX endeavors in both the present and future, through its leadership, workforce, and culture. A UX maturity model offers a structured framework for evaluating an organization's strengths and weaknesses in relation to UX-related activities. It is essential to recognize that UX maturity is not confined to individual teams but is dependent on the consistency and integration of UX practices across all organizational units. Effective information sharing, tools, and resources among teams contribute to increased UX maturity. Leadership that prioritizes UX and facilitates knowledge sharing should be organization-wide rather than confined to individual teams. Therefore, assessing true UX maturity necessitates evaluating the entire organization, encompassing all product groups and teams (Pernice et al., 2021).

UX maturity serves as a descriptor for the extent to which UX activities are integrated within an organization. A high level of UX maturity indicates a strong commitment to user-centered practices across the organization, whereas low maturity suggests limited investment in UX efforts (Möller, 2018) It can be defined as the level of understanding and implementation of a systematic human-centered design process within an organization or development team (Molich et al., 2020).

2.2.2 Significance of UX Maturity

The importance of UX maturity in organizations highlights how higher maturity levels enhance an organization's ability to deliver user-centered design. It examines the stages of UX maturity, the strategic implications of understanding an organization's maturity level, and the benefits of using maturity models to identify strengths and areas for improvement. The discussion underscores the necessity of ongoing development and expert guidance to achieve and sustain high UX maturity, which is crucial for long-term organizational success.

Organizations positioned higher on the UX maturity continuum demonstrate enhanced capability in delivering a blend of functionality, aesthetics, and usability aligned with their business objectives (Chapman & Plewes, 2014). Each level of maturity corresponds to specific processes and capabilities tailored to optimize UX design effectiveness commensurate with the organization's maturity level. Consequently, organizations operating at a particular maturity stage, such as "stage 2" cannot instantaneously transition to a more advanced "stage 5" design process. Understanding an organization's authentic UX objectives and its level of maturity facilitates strategic decision-making regarding resource allocation, process implementation, and decision-making frameworks (Chapman & Plewes, 2014)

Despite the implicit belief that mature UX practices lead to organizational success, there remains a lack of comprehensive data elucidating the current state of the field, the essential components for achieving "mature" UX, and the impact of UX maturity on organizational outcomes (Sauro et al., 2017). Evaluating tea or organizational processes through the lens of a maturity model offers valuable insights into areas ripe for improvement and underscores process strengths developed over time (Traynor, 2022). Recognizing an organization's UX maturity is essential for identifying strengths and weaknesses, reinforcing successful practices, and addressing areas in need of enhancement (Pernice et al., 2021).

Investing in the ongoing development of UX maturity is imperative for ensuring sustained economic prosperity for organizations (Molich et al., 2020). Just as in any other field, expertise and experience are critical components for successful UX design. While training, attending seminars, and reading literature are beneficial, they are insufficient without practical application and expert guidance. Thus, identifying relevant projects, defining deliverables, and engaging experts are vital steps toward progress (Chapman & Plewes, 2014).

2.2.3 The Nielsen Norman Group

The Nielsen Norman Group (NN/g) is a widely referenced authority in user experience research and usability practices. Founded in 1998, the organization has contributed to the development of practical UX methodologies and frameworks that are commonly used in both industry and academia. NN/g's work is grounded in empirical user research, and its usability heuristics and guidelines remain influential in the evaluation and design of digital products. Their UX Maturity Model, in particular, provides a structured framework for assessing how effectively organizations integrate user-centered design into their processes. This model is relevant to the present study as it offers a foundational perspective for understanding UX maturity within small businesses. (Nielsen Norman Group, 2024)

2.2.4 Nielsen Norman Group UX Maturity

The Nielsen Norman Group's six-stage UX maturity model serves as a framework for evaluating and enhancing organizational UX practices. . It explores the model's stages, from absence of UX efforts to advanced, user-driven approaches, and emphasizes the importance of assessing and improving strategy, culture, processes, and outcomes to achieve higher levels of UX maturity. Through this analysis, the study aims to highlight the critical role of UX maturity in fostering effective user-centered design and organizational success.

Given the significance and reputation of NN/g, this study utilizes their UX maturity model, which has six stages that encompass processes design, research, leadership support, and the longevity of UX. The model serves as a framework for assessing an organization's strengths and weaknesses in UX-related areas, offering insights into how to enhance UX maturity. A visual representation of the complete model will be included at the end of this section.

Stage 1, categorized as absent, denotes a complete disregard or absence of UX within an organization. At this stage, UX is not integrated into the mission, objectives, or priorities of the organization. Most individuals within these organizations are oblivious to UX, with no established UX processes or practices, leading to a lack of UX outcomes or evaluation. Overcoming obstacles at this stage involves educating the employees and customers about UX, its benefits, internal processes, and initiating efforts to build UX awareness.

Stage 2, termed limited, signifies sporadic and insignificant UX efforts within the organization. These efforts are typically driven by legal requirements, individual initiatives, or experimental teams.

Challenges primarily revolve around process-related issues, such as learning UX methods, organizing teams, and establishing resources. Progression from this stage entails highlighting small UX wins, creating positive case studies, and fostering relationships with UX advocates to gain traction.

Stage 3, labeled emergent, indicates functional but inconsistent UX work, lacking perceived value or impact. Organizations must focus on cultivating a supportive UX culture across all levels to move forward effectively. It's crucial to ensure that UX priorities are considered in decision-making processes and avoid complacency with the current state of UX.

Stage 4, identified as structured, entails the establishment of semi-systematic UX methodologies within the organization, with varying levels of effectiveness. Challenges at this stage often relate to strategic issues, such as leadership support, success metrics, and development processes. Overcoming these challenges requires addressing unsupportive leadership, refining success metrics, and prioritizing proactive UX strategies.

Stage 5, termed integrated, represents comprehensive and universally applied UX work. However, organizations may become overly focused on processes rather than outcomes, with metrics that are not user-centered driving business decisions. To overcome this, organizations must establish user-centered outcome metrics at the highest levels.

Finally, stage 6, the highest level, denotes a user-driven approach, characterized by deep insights and exceptional user-centered design outcomes. While this stage is the ultimate goal, maintaining it poses challenges such as resource allocation and conflicting goals. To prevent regression, organizations must maintain momentum, advocate for UX values, and educate team members effectively. (Pernice et al., 2021)

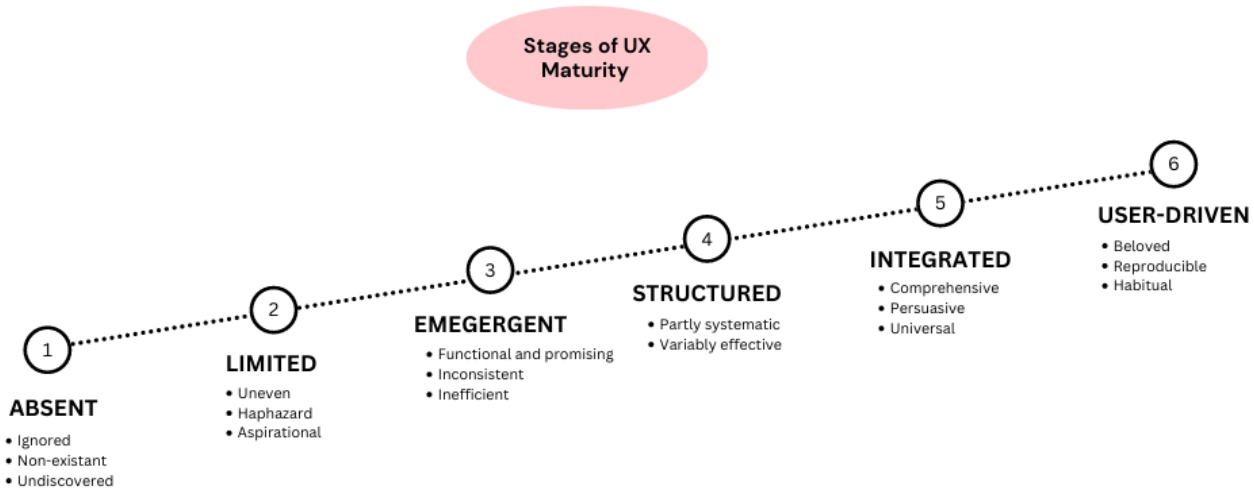

Figure 1- Nielsen Norman Group Stages of UX Maturity (Adapted from Nielsen Norman Group, 2024)

Enhancing UX maturity involves advancing across four overarching factors: strategy, culture, process, and outcomes. Together, they form a framework for evaluating an organization's dedication to UX and its capacity to provide user-centered products and services throughout all departments. These factors are interconnected and mutually reinforcing, with each comprising sub factors or dimensions that influence its quality. To achieve a high level of UX maturity and fully embrace user-centered design, organizations must progress in all these dimensions. While they may excel in certain factors, they can compensate for shortcomings in others. (Gibbons et al., 2021)

Strategy encompasses the overarching decisions and planning crucial for setting the stage for successful UX endeavors. It can be dissected into three subfactors.

- Vision: This entails having one or more clearly articulated organizational objectives centered around users, which serve as guiding principles for decision-making across departments. In organizations with lower maturity levels (stages 1-3), a user-centered vision is seldom present or, if it exists, lacks effective communication. Conversely, in high-maturity organizations (stage 4-6), the vision incorporates robust user-centered concepts, is communicated strategically, and shapes the direction of the entire organization.

- Planning and prioritization: This involves ensuring that UX efforts are adequately considered and prioritized throughout the product lifecycle. It examines factors such as development schedules, operational processes, and decision-making protocols to gauge their alignment with UX principles. In organizations with lower maturity levels, UX is rarely mentioned in schedules and development processes, and if it is, it's typically used to validate existing designs rather than drive innovation. Conversely, high-maturity organizations implement structured methods for project prioritization, regularly monitor user experience quality, and allow research findings to inform project decisions.
- Budget: This pertains to the allocation of sufficient resources, both in terms of personnel and time, to support UX initiatives effectively. In low-maturity organizations there is often a lack of dedicated personnel, and whatever the budget is allocated to UX projects is typically minimal and inconsistently applied. Conversely, high-maturity organizations allocate adequate budgets systematically, prioritize UX work, and utilize resources for refining existing designs and developing new product capabilities aligned with user needs. (Gibbons et al., 2021)

Culture refers to the collective beliefs and attitudes within an organization regarding the significance and value or UX. it comprises four sub factors that contribute to fostering a positive UX culture. (Nielsen Norman Group, 2024)

- Awareness: This subfactor assesses the extent to which knowledge about UX and its benefits spreads throughout the organization, extending beyond the UX team. It encompasses a widespread interest in learning about UX practices. In organizations with lower maturity levels, the UX mindset is often absent or if present, there is inconsistency among leaders regarding its importance, with many viewing UX as merely superficial polish at the end of product development. High-maturity organizations acknowledge that UX influences products and services right from the initial stages and extends beyond interface design. In such organizations, possessing UX skills is often considered equally crucial, if not a prerequisite, alongside other skill sets.
- Appreciation and support: For UX to thrive, it requires support and involvement from individuals outside the UX team. This subfactor evaluates the degree of respect for UX, proactive assistance, positive reinforcement, and advocacy from others within the organization. In low-maturity organizations, leaders may exhibit indifference towards UX, and there may be a lack of appreciation for the forward-looking aspects of UX, such as discovery research. Additionally,

there may be inconsistent buy-in for UX among leaders and colleagues. High-maturity organizations demonstrate robust support for UX across teams, with UX being highly respected among peers, and having expertise and support at the highest organizational levels, inducing the C-suite.

- Competency: This subfactor gauges the clarity and cultivation of skills related to UX practice and expertise throughout the organization. It examines whether the organization has designated UX roles, a diverse skill set within UX teams, and appropriate hiring practices. In low-maturity organizations, dedicated UX roles or titles are typically absent, and even if they exist, individuals in those roles may struggle to sustain their work due to being part of teams that lack a UX-focused mindset. Moreover, these organizations often lack the specific skill sets required to establish fundamental UX practices such as benchmarking or qualitative research. High-maturity organizations have well-defined human resources elements, such as job profiles and career paths, covering a wide range of UX skills. Hiring decisions are tailored to specific UX roles based on team needs, and UX professionals are encouraged to enhance their skill set through mentorship and additional training opportunities.
- Adaptability: UX work requires persistent, flexible, and sustainable approaches. This subfactor evaluates whether the organization demonstrates a willingness to embrace best practices and modify approaches to enhance UX effectiveness, and whether it possesses the logistical capability to adapt to evolving needs. In lower maturity levels, there is often rigidity in adjusting processes to integrate a UX mindset or address emerging UX challenges. While they may adopt some UX-oriented workflows, they do so without discernment and are reluctant to alter them when confronted with new UX issues. They may lack the resources or expertise to adapt their processes due to understaffing or a shortage of specialized UX knowledge. Lastly, their UX practices may heavily rely on a few individuals; if these individuals depart, the UX practice may cease to exist. In higher maturity levels, there exists both a willingness and the logistical capability to adapt processes based on contextual factors and team needs. In the event of personnel changes, the product team can seamlessly continue its operations without needing to start anew. (Gibbons et al., 2021)

Process encompasses all UX activities within an organization, including research, design, and content creation. It can be broken down into three subfactors.

- Methods: This subfactor evaluates whether user-centric techniques are consistently employed throughout the product life cycle, encompassing design practices and qualitative- and quantitative- research methodologies. In low-maturity organizations, methods may be lacking or

misused, with the UX techniques applied reactivity rather than integrated into daily practices. High-maturity organizations employ a diverse range of methods, with iterative design and comprehensive research being standard practices.

- Collaboration: Successful UX teams collaborate with other departments to foster diverse ideas and shared understanding. Low-maturity organizations often restrict UX responsibilities to individuals with specific titles, hindering cross-functional collaboration. In contrast, high-maturity organizations prioritize collaboration, with UX professionals routinely engaging with other roles and participating in regular team activities.
- Consistency: This subfactor examines the presence of shared systems, frameworks, and tools that facilitate the consistent integration of a UX mindset across processes. In low-maturity organizations, UX activities may be sporadic and not reproducible. In contrast, high-maturity organizations invest in establishing consistent tools and frameworks, ensuring that the design process is uniformly applied across teams and projects. (Gibbons et al., 2021)

Outcomes represent the tangible results of UX research and design efforts, emphasizing the importance of intentionally defining and measuring UX goals and objectives. This factor is essential for assessing UX maturity as it enables organizations to gauge the effectiveness of the UX work over time. Outcomes consist of two subfactors.

- Impact of the design: This subfactor evaluates the success of implemented designs from a user-centered perspective, emphasizing the extent to which they meet the needs of real users. In low-maturity organizations, design success is often measured solely by feature capabilities rather than usability and user needs. High-maturity organizations prioritize designs that align with project goals and effectively address user needs.
- Measurement: This subfactor examines the mechanisms used to track the impact of design decisions. High-maturity organizations establish clear user-centered metrics and implement processes to track them effectively throughout the product life cycle. Low-maturity organizations may focus on metrics unrelated to user needs, lacking a systematic approach to track user-centered outcomes. (Gibbons et al., 2021)

Table 2 - Summary of UX Maturity Factors and Dimensions

Factor	Dimension (Subfactor)	Description	Low-maturity organizations (stages 1-3)	High-maturity organizations (stages 4-6)
Strategy	Vision	Clear, user-centered organizational objectives that guide decision-making across departments.	UX vision vague, poorly communicated.	Clear. Strategic UX vision shaping organization.
Strategy	Planning and prioritization	UX is considered and prioritized throughout the product lifecycle, including development schedules and decision-making processes.	UX rarely integrated inot planning: reactive use.	Structred prioritization, research drives decisions.
Strategy	Budget	Allocation of sufficient personnel and time resources to support UX initiatives.	Minimal, inconsistent funding/resources.	Adequate, systematic UX funding aligned to needs.
Culture	Awareness	Extent to which UX knowledge and practices are understood and valued across the organization.	Limited or inconsistent UX understanding.	UX valued and embedded from early stages.
Culture	Appreciation and support	Level of support and advocacy for UX from non-UX team members, including leadership.	Low buy-in from leadership/peers.	Strong advocacy at all levels, including executives.
Culture	Competency	Clarity and cultivation of UX skills, roles, hiring practices, and internal training.	Few/no UX roles, skill gaps, weak training.	Defined roles, career paths and skill development.
Culture	Adaptability	Organizational flexibility and willingness to adapt processes to enhance UX practices.	Inflexible processes, rely on few individuals.	Processes resilient, adapt smoothly to change.
Process	Methods	Use of user-centered design and research methods throughout the product lifecycle.	Methods absent/misused, reactive use.	Diverse, iterative methods standard.
Process	Collaboration	Cross-functional teamwork and regular collaboration between UX and other departments.	UX siloed, limited cross-team work.	Strong cross-functional colaboration.
Process	Consistency	Use of shared systems and frameworks that ensure consistent application of UX practices.	Sporadic, non-reproducible practices.	Consistent frameworks and application.
Outcomes	Impact of the design	Success of design outcomes based on how well they meet actual user needs.	Success measured on features, not needs.	Designs meet user needs and project goals.
Outcomes	Measurement	Use of user-centered metrics and tracking mechanisms to measure UX effectiveness.	Metrics unrelated to UX outcomes.	Clear, user-centered metrics tracked continuously.

Note. Adapted from *Gibbons et al., (2021)*

At a basic level, one might consider each subfactor contributing equally to its respective factor, and each factor contributing equally to the overall UX maturity of an organization. Assigning scores to each subfactor, averaging the subfactor scores to obtain the factor score, and averaging the factor scores to determine the overall maturity could be a simple approach. However, in reality, the situation is more nuanced. Certain factors can carry greater significance than others depending on the organizational context. For example, in a highly traditional company, strategy might have more influence on the organization compared to process, given the leadership's role in shaping process standards. In retrospect, startup companies characterized by rapid evolution and limited strategic planning, the process factor may hold greater importance in assessing overall maturity. (Gibbons et al., 2021)

2.3 Empirical Framework

The Nielsen Norman Group UX Maturity model framework was used to analyze the UX maturity levels of the six companies. This study applies the Nielsen Norman Group's UX maturity model to bridge theory and practice, building on literature that links UX maturity to improve user satisfaction and business performance. By using this framework to assess six small Quebec-based businesses over time, the research connects theoretical insights with real-world application, offering a practical understanding of how UX practices evolve in small resource-constrained organizations.

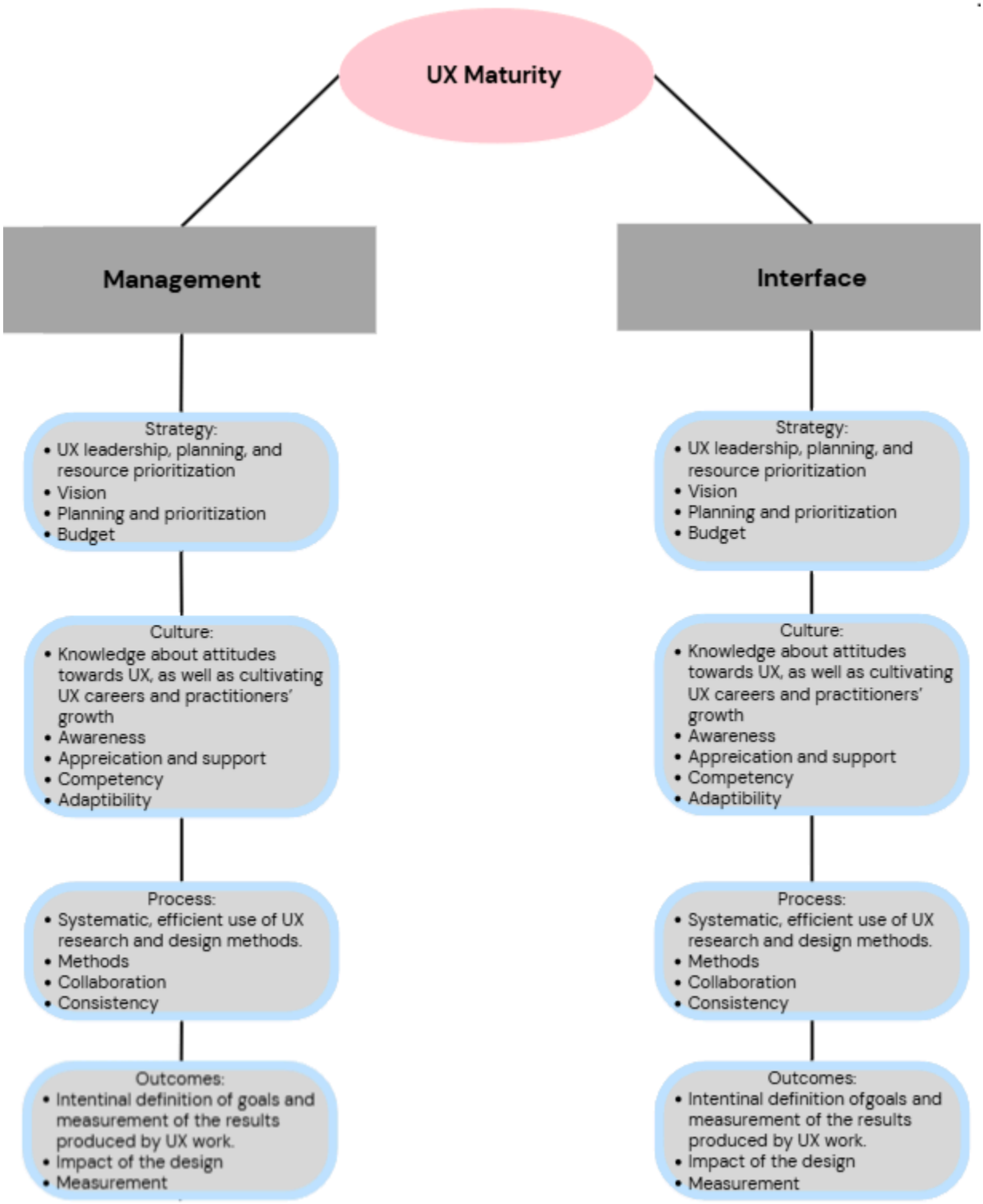

Figure 2 - Nielsen Norman Group UX Maturity Model (*Nielsen Norman Group, 2024*)

Hypothesis: The six companies will significantly increase in terms of UX maturity between the first and second intervention over the span of 9 months working with the Tech3Lab.

The rationale behind this hypothesis is grounded in the prestigious nature and proven effectiveness of the Tech3Lab. As the largest public user experience laboratory in the world, the Tech3Lab specializes in evaluating user experience within the business technologies. By employing tools derived from neuroscience, they develop a comprehensive understanding of the actual user experience, whether it involves consumers, employees, or citizens that interact with technology. Since it was founded in 2012, the Tech3Lab has conducted over 300 research projects and has gathered data from more than 6,000 users. Furthermore, in 2020, Tech3Lab launched the world's largest bilingual user experience Micromasters program, which in its first year, attracted over 40,000 students globally. (Anita, 2023)

Effective training, like that provided by the Tech3Lab, is crucial for continuous learning and skill development, which are essential in modern organizations to remain competitive. Continuous training and development allow organizations to adapt, excel, innovate and achieve their goals. Well-designed training is impactful and important for maintaining competitiveness, particularly in a global economy where product development cycles are shorter, and differences in product innovation are smaller (Salas et al., 2012). Moreover, training has been shown to enhance both employee and organizational performance (Khan et al., 2011). Given this context, it is reasonable to expect that the nine-month engagement with the Tech3Lab will result in significant growth in UX maturity for the six small participating companies.

Chapter 3: Methodology

3.1 Research Design

The study employed a longitudinal, multiple-case qualitative design involving six companies. Within each company, the entrepreneur and either a marketing employee, or their most proficient UX employee was designated to take part in the interviews. This research was longitudinal in nature, consisting of two sets of interviews conducted eight months apart. The concluding interview phase also featured a self-assessed exit questionnaire.

The primary aim of this study was to monitor the progression of UX maturity within each of the six companies over time, assessing whether there were any changes, whether it be increases or decreases, in their overall UX knowledge. Data collection predominantly relied on two rounds of interviews: the initial one took place in November 2022 and the second set of interviews took place in July 2023, which also included the exit questionnaire. The Nielsen Norman Group UX Maturity self-assessment questionnaire was administered only once, at the end of the second interview interview. Although measuring UX maturity at multiple points in time would have provided a longitudinal comparison, it was not feasible at the beginning of the program.

The data analysis process was executed on Optimal Workshop, utilizing thematic analysis techniques to identify and explore patterns and trends in the collected data.

3.2 Sampling (Multiple Case Selection)

In Fall 2022, Tech3Lab carefully selected six companies to participate in the research study. The aim of this selection was to ensure diversity and representativeness in the sample, allowing for a comprehensive exploration of UX maturity in small companies across different sectors. This included that the companies were from different industries, be considered very small or newly established, and be a Quebec-based business. The selection process was based on specific criteria; founding date, number of employees, target market, industry, interface (prototype, website or application), platform and product type to ensure a varied representation of companies chosen for this project. The six companies met the criteria Canada uses to define small, that being 1-99 paid employees. Indeed, the biggest payroll was 14 employees. (Statistics Canada, 2022)

3.3 Procedure

There were a total of 2 interviews per company. The initial interviews, serving as the baseline, were carried out with each company in November 2022. Following that, two professional service interventions were conducted. The first involved a heuristic evaluation of the companies' software, followed by a user evaluation of their revised artifact. The findings and recommendations from this second intervention were shared with each participating company. Finally, the second set of interviews, coupled with the exit questionnaire, took place three months after the last intervention. This gap allowed the companies a sufficient period to implement and adapt to the provided recommendations. The post-intervention interviews and exit questionnaire aimed to assess the final set of detail collected, providing the data needed for the longitudinal analysis of UX maturity.

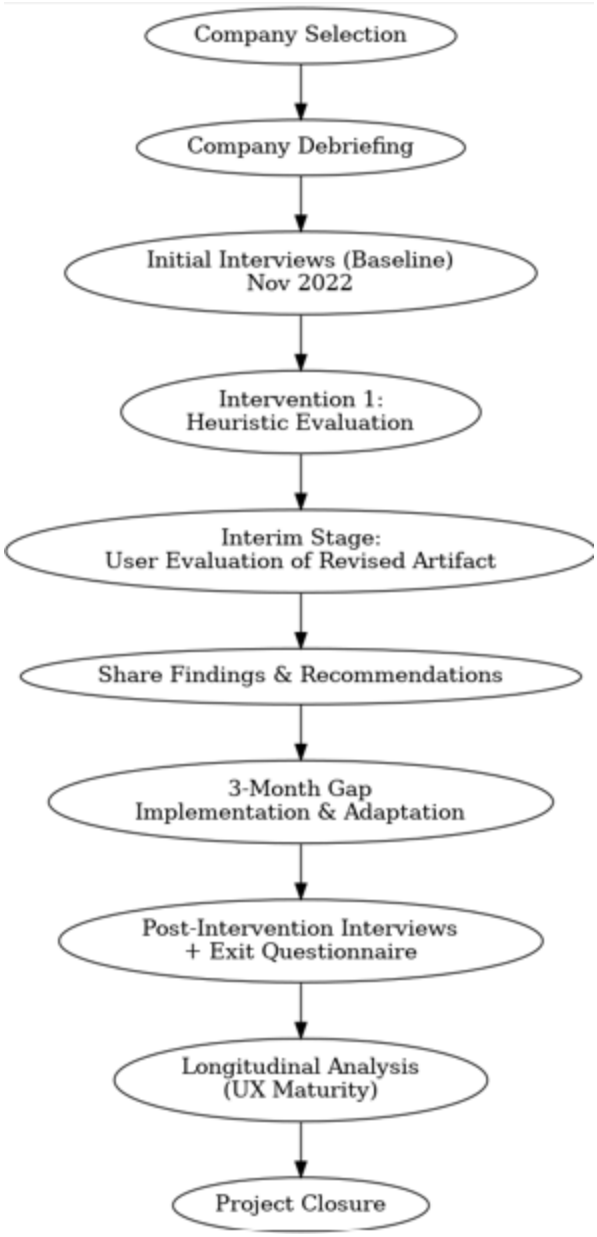

Figure 3 - Research Process Timeline

3.4 Measurement

The primary measurement to assess UX maturity across the six companies were the interviews themselves. During the interviews, participants from each company were asked questions and engaged in discussions that allowed the researchers to assess various aspects of UX maturity. The dimensions used to gather insights of their UX efforts were the company's UX culture, process, strategy and outcome. The interviews were open-ended questions with probing to explore these dimensions qualitatively.

Participant's responses, as well as additional insights from the questionnaire obtained items related to these dimensions to supplement the interview data. The self-assessed questionnaire served as additional support to the interview data. The questionnaire was an exact copy of the Nielsen Norman UX Maturity Quiz which obtains each company's self-assessment with regards to where they stand, on a scale from 1-6. (Moran, 2022)

3.5 Equipment

The materials used were a voice recorder application on a phone and a laptop, as well a link to the online questionnaire. Additionally, field notes were taken during the interviews to capture any contextual information or nonverbal cues that may provide additional insights to the participants' responses.

3.6 Data Analysis

This study was a qualitative research approach to analyze the collected data. Interviews with participants were audio-recorded, transcribed verbatim, and imported into the Optimal Workshop software for data management and analysis. To analyze the verbatims, eleven categories of tags were used (refer to Appendix 1 for the list of all the tags). Given the case-by-case study design, a thematic analysis technique was applied to systematically code and identify similar themes and patterns within the transcribed interview data. This approach allowed for an in-depth exploration of the qualitative responses provided by participants. Moreover, the data collected from the exit questionnaire were used to complement the qualitative data. Participants self-assessments, based on the Nielsen Norman UX maturity quiz scale, provided valuable insights into their perceived level of UX maturity to help back up the qualitative data from the interviews.

The data coding process started with a deductive coding structure that was established based on the four UX maturity factors identified for analysis: strategy, culture, process, and outcomes. Each interview question was pre-linked to one of these factors to guide initial coding. Next, the coding was applied to allow new themes to emerge from the interview transcripts. The coding was carried out manually within Optimal Workshop, where each segment of text was tagged with corresponding codes. After coding, a cross-case thematic comparison was conducted to identify similarities and differences between companies. Patterns of UX maturity progression were then mapped across the nine-month intervention period to observe evolution over time.

By combining thematic analysis of interview transcripts with the questionnaire responses, the study aimed to provide a comprehensive and well-rounded assessment of UX maturity within each participating company.

Each interview question was aligned with one of four UX maturity factors: strategy, culture, process and outcomes. Strategy refers to the leadership, planning and resources considerations in relation to UX. Culture refers to the knowledge and potential career growth associated with UX. Process refers to the UX research and design. Outcomes relate to the ability to define and measure results derived from UX efforts. (Pernice et al., 2021)

Chapter 4: Results

4.0 Descriptive Statistics

4.0.1 Industry Type

Self-storage units (Company F), online grocery store (Company C) and management and grading digital exam (Company D) may prioritize functional and user-friendly interfaces as they deal with everyday tasks like booking, purchasing, or grading. These industries might place greater emphasis on ease of use and accessibility, leading to potentially higher UX maturity over time.

Hybrid workspace management solutions (Company E) and AI-Powered manager coaching (Company A) may have a more niche audience and could require more specialized UX/UI design for complex features, which could impact their early-stage UX efforts.

Mobile, internet and television plans (Company B) could benefit from an intuitive user experience given the competitive nature of telecom services, where customers often compare various options online.

4.0.2 Company Size

Although all six companies are considered small companies, defined by having 1-99 paid employees, only company C is considered a micro-enterprise, which is defined by having 1-4 paid employees. (Bank for Canadian Entrepreneurs, 2025)

Small companies might face resource constraints, making it difficult to prioritize UI/UI design. These companies may have to rely on the versatility of their smaller teams to learn and iterate UX/UI principles independently.

4.0.3 Location

Both Montreal and Quebec City have growing tech ecosystems, which may provide access to local UX/UI talent, design agencies, and educational resources. This could help all six companies improve their UX maturity over time.

Companies based in Montreal (Company A, B, C, D and F), where the tech scene is particularly active, may have a slight advantage in attracting UX/UI talent or forming collaborations with other firms, resulting in more advanced UX maturity.

4.0.4 Year Founded

Newer companies (2019-2020) like Company A and D might still be in the early stages of developing their UX/UI practices. They may be focused on product development and business operations and could be more reactive to UX/UI needs as the product grows.

Particularly Company B, founded in 2013, may have had more time to establish a clearer UX/UI strategy and incorporate it into their platform, potentially resulting in a higher level of UX maturity.

4.0.5 UX/UI Position

Company B is the only company explicitly having a UX/UI position, which indicates they likely prioritize user experience design and might have a higher UX maturity level. Having a dedicated position for UX/UI can ensure that the user experience is considered in decision-making and design processes.

For the other five companies, the lack of a dedicated UX/UI position suggest that UX efforts could be less formalized or outsourced, which could impact their overall UX maturity. They may need to rely on generalist team members, which could slow down the refinement of their UX practices.

4.0.6 Summary of Descriptive Statistics Results

Company B is likely the most mature in terms of UX due to the presence of a dedicated UX/UI position, the highest number of employees, the oldest founded and the competitive nature of the telecom industry.

Company A, C, D and E may have a foundation to build on, their smaller team sizes, lack of dedicated UX/UI roles, and relatively recent establishment could lead to lower UX maturity.
Company F is similar to the others, with a small team, no UX/UI position and recent establishment, making UX maturity potentially lower in the short term.

Table 3: Descriptive Statistics (*Statistic Canada, 2025*)

Category	Company A	Company B	Company C	Company D	Company E	Company F
Industry field	NAICS 541612	NAICS 517110	NAICS 454110	NAICS 541512	NAICS 541512	NAICS 531130
Description	AI-powered manager coaching.	Mobile, internet and television plans.	Online grocery store.	Management and grading digital exams.	Hybrid workspace management solutions.	Self storage unites.
Size (Number of employees)	11	13	3	5	11	7
Location	Montreal	Montreal	Montreal	Montreal	Quebec city	Montreal
Year founded	2020	2013	2019	2019	2018	2021
UX/UI Position (Yes/No)	No	Yes (1 person)	No	No	No	No

NAICS 541612: Human Resources Consulting Services

NAICS 517110: Wired and Wireless Telecommunications Carriers

NAICS 454110: Electronic Shopping and Mail-Order Houses

NAICS 541512: Computer Systems Design Services

NAICS 541512: Computer Systems Design Services

NAICS 531130: Lessors of Mini-Warehouses and Self-Storage Unites

4.1 Company A

Company A is a Montreal-based start-up founded in 2020 with 11 employees. It operates in the professional services industry (NAICS 541612) and offers an AI-powered coaching platform for managers. At the time of the study, the company did not have a dedicated UX/UI role. Design decisions were centralized within the development team, and UX efforts were informal and reactive rather than structured.

4.1.1 Strategy

First touchpoint:

Company A's strategy focuses on both short and long-term goals, particularly integrating UX in the early stages of the project. When asked about their UX budget, they responded:

Participant #1 "*presque*"

This indicates that while they don't have a dedicated budget, they still manage resources for UX activities. For UX resources, they rely on:

Participant #1: "*connections et contacts, forums la rue, magasins Persona, user story, user flow, design brief, objectifs, brainstorming, matrice de decision pour la selection de concept, cree les user flows, map, wireframe.*"

Their approach to integrating user research and UI into the organizational process is described as:

Participant #1: "*bien intégrer*"

This suggests that these activities are well integrated. In terms of UX activities, they focus on:

Participant #1: "*en parlant avec des gens*"

They also create personas, user stories, user flows, design briefs, and wireframes. They prioritize empathy in their work, ensuring that they are always focused on exploring new features or improving existing ones. Throughout the process, they consistently document their design decisions in their design brief document.

Second touchpoint:

Eight months later, Company A has experienced significant growth and changes in their UX strategy. When asked about major changes since the first interview, they noted that:

Participant #1: "*Oui, on a plus d'utilisateur actif sur la plateforme et des utilisateurs payant alors je pense que c'est le plus gros changement. Avant c'était un projet pilote avec diffèrent entreprise et puis là on a lancer le programme avec des clients payant récurant un genre de SAS*."

This indicates a shift from a pilot project to a recurring paid client model, which has likely impacted their approach to UX.

Regarding the supervision of recommendations from the previous interview, they clarified that it was Justin, their CEO. Their CTO would implement the software and their frontend designer would work together to make the changes. This shows that leadership continues to play a key role in overseeing UX implementation, with a more hands-on approach from the CEO and the CTO.

When asked about having a dedicated UX budget, Company A responded:

Participant #1: "*I would like to but c'est sûre que le budget en ce moment est vraiment pour le produit. The head of product would be the one to supervising the UX/UI alors en ce moment on esssaye de trouver un budget pour ça*."

This highlights that, while a UX budget is not yet established, the company is actively working toward securing resources for UX work under the supervision of the head of product.

Lastly, when discussing resources for UX and future activities, they explained that funding opportunities in this area are limited, especially for UX/UI. Financial considerations remain a major barrier, as they have not found any programs to subsidize this type of work. This makes it harder to invest in UX without sufficient funds, and current sales are not high enough to allocate a dedicated percentage to it. This highlights the challenges they face in securing funding for UX initiatives, with financial constraints still playing a significant role in the decision-making process

4.1.2 Culture

First touchpoint:

At Company A, UX is generally well understood across the organization, with a self-reported score of

Participant #1: "*7.5/10*"

This score indicates a solid yet intuitive grasp of UX principles. When asked about the prioritization of user satisfaction, the company emphasized that it is a:

Participant #1: "*Bonne priorite, premiere priorite*"

This signals that UX and user satisfaction are top concerns. Collaboration between non-UX employees and the UX team is described as good, with contributions to key activities like research, document production, and user involvement. Final UX decisions are made in a collaborative manner, highlighting a collective approach to decision-making.

The company also fosters a supportive environment for UX, with two key individuals acting as champions to defend UX, and Sonia and another team member being responsible for UX overall. The company does not have a formal, dedicated UX team, but rather a group of partners and advisors who play a variety of roles, such as conducting research, gathering insights, and developing concepts. The UX work is described as very collaborative, with activities including interviews, artificial intelligence exploration, and internal interface development. When it comes to supervision, all UX activities are reviewed and refined, ensuring that everyone has an equal role in shaping the UX process.

Finally, the company supports professional growth in UX, offering good opportunities for career evolution as the company itself grows, ensuring that specialized UX employees have room to develop and advance in their careers.

Second touchpoint:

Eight months later, Company A has a somewhat more nuanced understanding of UX. The company reports an average knowledge of UX, indicating that while they recognize its importance, their focus remains primarily on the software and product functionality rather than aesthetics. They emphasize that if the platform isn’t user-friendly, they cannot gather sufficient data to improve the product, which is crucial for enhancing their offerings using features like generative AI. While user satisfaction remains a priority, reflected in a self-reported score of 8.5-9/10, their attention has shifted more toward functionality than user experience design, especially since the departure of a key UX contributor, Timothée. The company notes that they are currently more focused on intuitive user actions rather than the broader aesthetic aspects of UX. There were several recommendations made in April, with a focus on improving intuitiveness.

In terms of UX competencies, the company doesn't feel that significant learning has taken place, stating:

Participant #1: “*je ne pense pas*”.

Regarding professional development, there is no clear path for employees specializing in UX in the next six months. While a new hire with UX/UI experience is expected to join in the product team, a full-time, dedicated UX role is not planned. The company continues to work with a subcontractor for project-based UX work, and the Head of Product oversees the development of new features, which are then handed over to the Head of Tech and front end designers for implementation.

4.1.3 Process

First touchpoint:

At Company A, the process surrounding UX is still in its developmental stages, with efforts made to improve over time. When asked about following best UX practices, they stated it’s done in a general way, suggesting some adherence but without a clear, formalized structure in place. However, the company does make iterative efforts to improve its UX methods, as they mentioned they:

Participant #1: “*regard for s'améliorer*”

This shows an openness to refining their approach. The company values user satisfaction highly, with 75%-80% of their efforts directed at facilitating content, which they believe adds direct value. This indicates that while UX might not yet be fully systematic or standardized, there is a strong focus on meeting user needs. The employees who are most specialized in UX possess skills in normal research, iteration, and design, with a particular emphasis on preparing design files for developers. These competencies highlight that while the company is engaged in UX, there’s still room for deeper integration and more structured processes

Second touchpoint:

Eight months later, Company A’s process surrounding UX shows some progression but also highlights ongoing challenges and priorities. When asked about implementing the recommendations from April, they noted that some have been put into action, particularly focusing on user friendliness, UX/UI, and feature development. However, due to limited workforce and client demands, UX/UI improvements are not always prioritized, and instead, features take precedence on the product roadmap. They acknowledged the importance of user feedback but emphasized that their approach to UX tends to be more intuitive rather than strictly following formal UX methodologies, as they sometimes “test if it works or not” instead of adhering to a structured process.

User research and UI are integrated into the company's processes, particularly during marketing outreach and onboarding, where the company collects insights from potential end-users. This proactive

approach allows them to better understand user preferences, such as preferred interfaces and apps, before users even engage with the platform. All departments, including marketing and UX/UI, are well-informed, and there is a concerted effort to integrate user feedback early in the process, especially when creating personas to guide product development.

Looking ahead, while there are no specific UX/UI activities planned, the focus remains on product development, feature improvements, and increasing the software's value. While user experience is recognized as important, the company's current priority lies more in enhancing product features rather than dedicating resources to specialized UX/UI work.

4.1.4 Outcomes

First touchpoint:

At Company A, the outcomes of UX work are shared and communicated within the company through an evolving process. Research, including documentation and user interactions, is carried out by Viviane and Tim. Tim focuses on speaking with users, while user flows and wireframes are developed as part of the design process. These elements are reviewed during weekly meetings, ensuring ongoing collaboration and alignment. However, the visibility of UX results within the company is considered

Participant #1: "*moderately visible*"

This means that while UX work is acknowledged, its visibility across the broader team could be enhanced. Despite this, UX research and best practices are consistently applied in decision-making and strategic prioritization. As one of the key factors in shaping company direction, the results of UX research are integrated into the decision-making process "all the time," indicating that user insights heavily influence the company's development path.

Second touchpoint:

Eight months later, at Company A, the outcomes of their UX efforts show a mixed response. When asked about the integration of the UX recommendations from April, they reported that they had no new issues or bugs, indicating that the recommendations have not led to significant visible improvements or challenges in the interface. Regarding user feedback, they noted that there have been no substantial updates or direct responses to the changes made. However, users have expressed a desire for a smoother experience, specifically wanting a more fluid navigation style, rather than a step-by-step process. This suggests that while the company has made some progress in addressing the UX recommendations, the feedback remains more focused on refining the user experience to enhance navigation and overall usability.

4.1.5 Management

Company A's UX maturity is still developing, with UX being acknowledged as important but not a priority. While there is some understanding of UX, especially in terms of user-friendliness, the company focuses more on product functionality and feature development. UX efforts are often reactive and intuitive rather than systematic, with the responsibility for UX shared among the CEO, CTO, and frontend designers. However, there is no dedicated budget or team for UX, and resources are limited, often relying on subcontractors. UX processes are not well-documented or standardized, leading to inconsistencies in results. While user feedback is gathered, it has not led to significant changes or improvements. Overall, UX is not fully integrated into the company culture, and there is little opportunity for career development in UX. For UX to mature, the company needs to prioritize it more clearly, allocate resources, and create a more structured approach to research and design.

4.1.6 Interface

The interface at Company A appears to have seen minimal changes following the UX recommendations provided earlier. While some recommendations were acknowledged and noted in the product roadmap, they were not actively prioritized due to a lack of resources and competing focus on product features. The company has not seen major updates in terms of user interface improvements, as the focus remains on functionality over aesthetics or usability.

User feedback has been gathered, particularly on the app's navigational flow, with some users suggesting that the app could be more intuitive and fluid, moving away from a step-by-step process. However, this feedback has not yet resulted in significant changes to the interface. The lack of implementation of user insights and the absence of visible, meaningful improvements suggest that UX maturity is hindered by insufficient resources, a reactive rather than proactive approach to UX design, and a lack of structured processes for incorporating user feedback into ongoing design updates. This stagnation can negatively affect UX maturity, as it limits the opportunity to refine and improve the user experience based on real-world usage.

4.1.7 Nielsen Norman Group- UX Maturity Quiz

According to the Nielsen Norman Group UX maturity quiz, Company A falls in the third stage of UX maturity: emergent. This means that while they are incorporating user-centered ideas, it’s essential to note that they do not currently align with the overall strategic direction. User experience is starting to develop across teams and some UX activities are planned for the future, however the UX effort is small

and unstable. The current approach involves ad-hoc and reactive prioritization of user experience (UX), lacking a structured plan. Although there is a UX budget in place, it remains insufficient and is challenging to secure. For Company A to progress beyond this stage, they must navigate the obstacles of complacency and focus on a culture that prioritizes UX at all levels. This would involve advancing overall UX knowledge and expertise throughout the organization and throughout all projects. (Kaplan, 2021)

Table 4: Company A- First Versus Second Intervention Analysis

UX Maturity Factor	First Intervention	Second Intervention
Strategy	UX considered early in projects but no formal budget.	Shifted focus to product functionality over UX.
	"Presque" un budget. Used personas and design briefs.	*UX/UI placed lower on roadmap due to limited resources.*
Culture	UX described as "intuitive" understanding.	UX knowledge remains "moyenne."
	Empathy valued, user stories created collaboratively.	*No plans for hiring a UX specialist in the next 6 months.*
Process	UX and UI integrated "bien."	User feedback now collected during outreach.
	Created user flows, brainstormed, mapped features.	*Some features adjusted based on early onboarding insights.*
Outcomes	Activities were tracked via design briefs but not consistently implemented.	Some recommendations applied, but feedback still not systematically acted upon.
		"Pas de nouvelles."

Table 5- Company A Results Synopsis

Factor	Longitudinal Observation
Strategy	Started with early-stage UX integration using informal tools, no dedicated budget. Shifted to paid SaaS model with leadership oversight but funding still limited.
Culture	Initially strong UX priority (7.5/10), collaborative with champions. Later focus shifted to functionality over design; still high satisfaction scores but reduced design focus after key departure.
Process	Early informal best practices, strong user focus. Later integrated research in outreach/onboarding, but features prioritized over UX; no dedicated UX plans.
Outcomes	Early outputs moderately visible and applied in decisions. Later feedback sought smoother navigation, but changes minimal.
Management	UX valued but reactive, shared responsibility, no dedicated team/budget, reliant on subcontractors. Needs structured approach and resources.
Interface	Minimal changes; navigation feedback noted but not implemented due to resource limits.
UX Maturity	Stage 3 (Emergent): Ad hoc, small-scale UX efforts; needs cultural integration, knowledge growth, and structured planning.

4.2 Company B

Company B, founded in 2013 and located in Montreal, operates in the telecommunication sector (NAICS 517110) and provides mobile, internet and television plans. With 13 employees, it was the only company in the sample with a formally designated UX/UI position (one team member). Despite limited UX resources, Company B had begun integrating user feedback into product development, reflecting early-stage UX maturity.

4.2.1 Strategy

First touchpoint:

Company B's strategy for UX is characterized by a blend of short and long-term goals, with a focus on integrating UX early in the project lifecycle. While the company does not have a designated UX budget, funding for UX activities comes from their sales and company capital, as noted by one respondent:

Participant #2: "*C'est par nos ventes, par le capital de l'entreprise mais je ne connais pas exactement parce que je ne suis pas le CFO. On n'a pas de financement externe*."

This suggests that UX is not independently funded but relies on the broader financial health of the company. In terms of resources, Company B uses tools like Hotjar, Figma, Google Analytics, and Optimize for user research and measurements. They also utilize personas, although they noted that these are not always applied in practice due to time constraints:

Participant #2: "*On y pense beaucoup parce qu'on n'a souvent pas beaucoup de temps pour prendre les décisions.*"

Despite these challenges, UX is considered central to their workflow. As one respondent shared that the starting point is always UX and the end user needs. This indicates that UX considerations, such as user research, wireframes, and processes, are integrated early and consistently into the project lifecycle. Furthermore, the company emphasizes empathy in its UX activities, which include both the exploration of new features and the improvement of existing functionalities. These activities are documented in design briefs to maintain continuity and focus, suggesting a structured yet flexible approach to UX integration:

Participant #2: "*C'est fait tout au long et on document le design brief*." This combination of early-stage UX integration, resource reliance, and strategic empathy reflects a solid, though resource-constrained, UX strategy focused on user-centered design.

Second touchpoint:

Eight months after the initial interview, Company B's UX strategy has seen minimal change. The company maintains its focus on integrating UX into the project lifecycle, with no major shifts in their approach since the previous discussion, they responded no. The responsibility for overseeing the implementation of UX recommendations is now shared between both CEOs, along with their operations manager, who ensures the breakdown of tasks into executable and measurable actions. The CEOs then monitor the execution to ensure the recommendations are implemented and launched, although there is no current release, as they are working toward the next version:

Participant #2: "*On a notre chef des opérations qui va assurer le breakdown en task des recommandations et ce breakdown là est transformé en tâche exécutable et mesurable et après ça c'est moi et Nadir qui vont regarder l'exécution pour le mettre en ligne*."

Regarding the UX budget, Company B now has allocated funds to execute the UX recommendations. However, the lack of a dedicated front-end developer with the necessary technologies and language skills continues to hinder progress:

Participant #2: "*Oui, mais ce n'est pas comme si on a engagé directement un front end qui travaille dessus. Alors non on a disposé des fonds pour exécuter les recommandations. C'est probablement ça qui nous freine.*"

This suggests that while there is funding available, challenges in finding the right talent for the specific technical requirements of the project are limiting their ability to fully implement the UX strategy.

In terms of resources, the company has been relying on the front-end team and other employees to implement the recommendations. Looking ahead, Company B plans to hire an expert in UX, someone with a deeper understanding of the discipline. They have already begun this process by bringing someone on board to work on a specific section of the site. However, one of the CEOs remains the sole dedicated UX resource for now:

Participant #2: "*Le front-end et d'autres employés. Oui, l'idée c'est engager un expert UX, quelqu'un qui comprend. On vient d'engager quelqu'un du côté plus pour le bloc du site. Mais présentement, je suis la seule ressource.*"

Overall, while the company's UX strategy has remained consistent, the ongoing reliance on limited resources and a lack of specialized personnel continue to pose challenges. However, the company is making strides by planning to bring in a dedicated UX expert, which may further improve the integration of UX in the long term.

4.2.2 Culture

First touchpoint:

At Company B, there is a growing understanding of UX across the organization, although the team does not yet consider themselves experts. They acknowledge that while they have made progress, there is still a significant gap in terms of execution and research. One respondent noted,

Participant #2: "*On n'est pas des experts mais on essaye devenir*"

They estimated that their understanding of world-class UX to be at about 50%-60%. Despite this, user satisfaction remains a top priority for the company, with the website being central to their product, reflecting their commitment to UX:

Participant #2: "*C'est la chose qui est la plus prioritaire, très haut sur la liste parce que notre produit est notre site web*."

Collaboration around UX is inclusive, with everyone involved in key activities. In the past, a UX consultant helped challenge their ideas, and in the future, they plan to bring in external expertise. Everyone is implicated," highlighting the collective approach to UX within the team. Decision-making around UX is team-based, with discussions aiming for consensus. While differing opinions can delay decisions, they prioritize finding common ground, particularly around feature prioritization:

Participant #2: "*Les enjeux sont plus sur la priorisation que dire oui ou non sur un feature*."

The CEO plays a significant role in championing UX, flagging potential issues and organizing meetings to review user feedback and he often highlights observations to keep the UX focus strong. One of the CEOs, the sole dedicated UX resource, is responsible for leading UX activities, with support from others, as there is no formal UX team in place. One of the CEOs' roles is central, stemming from his background in industrial work and a desire to transition into UX.

While there is no dedicated UX team, the company's leadership, especially the CEO, oversees UX activities through discussions, as the CEO supervises the strategic direction of UX efforts:

Participant #2: "*C'est à travers des discussions épiques. C'est le CEO qui va superviser.*"

There is also potential for career growth within the organization, particularly for UX professionals who could transition into product leadership roles.

Overall, the company is in the early stages of formalizing its UX practices, but there is a clear commitment to integrating UX into their culture. With leadership support, broad employee involvement, and an eye on professional development, Company B is laying the foundation for a more robust UX future.

Second touchpoint:

Eight months later, Company B has made significant progress in understanding and integrating UX, though they acknowledge there's still more to learn. One of the CEOs, who leads UX, shared that the company has shifted from making assumptions to using data-driven decisions, particularly through user feedback and heatmaps. He continues to centralize UX decisions, ensuring they align with user needs. He also highlighted the significant improvements made since the company started focusing on UX:

Participant #2: "*Avant il n'y avait pas de designer UX et on a fait quand même beaucoup de changements depuis sur le site*."

User satisfaction remains the top priority, with one person stating:

Participant #2:"*C'est priorité 1, parce que notre 'bread and butter' c'est les utilisateurs*."

This commitment has guided product development, ensuring decisions are user-focused rather than constrained by development limitations. The company also enhanced their UX competencies through Tech3Lab, particularly with heatmaps, which helped refine their approach and optimize their ads.

In terms of professional growth, the company sees opportunities for scaling as they continue to grow. While one of their employees is currently the only UX resource, future expansion could lead to more roles and career advancement in management. However, they prefer to stay hands-on in UX, focusing on direct user interface creation. As the company scales, there will be further opportunities for UX professionals to grow alongside the business.

Overall, Company B's UX culture has evolved into a more data-driven, user-focused approach, with plans to expand UX roles as the business grows.

4.2.3 Process

First touchpoint:

Company B demonstrates a partially developed UX process, with a focus on iterative collaboration, but there are still gaps in terms of consistent, well-documented practices and systematic use of UX methodologies. While they acknowledge the importance of UX and approach their work iteratively:

Participant #2: "*De façon proactive. C'est quelque chose qui est très important pour nous. On fait des maquettes, on se rencontre, on décide les changements qu'on veut faire et on refait les maquettes.*"
There is no clear evidence of structured measurement tools or adherence to specific best practices. This is highlighted by their admission

Despite the absence of formal UX metrics, they make efforts to gather feedback indirectly through online reviews, achieving a 4.6 rating on Google with 300-400 reviews. When discussing user and employee satisfaction, they rated it as 50, which they see as relatively acceptable but leaving room for improvement:

Participant #2: "*50, c'est pas mal mais c'est quand même relativement correct*."

The company recognizes the value of UX expertise, particularly the ability to make informed decisions through data analysis:

Participant #2: "*Je pense qu'il a un valeur UX, une connaissance méthodique, une approche qui est capable de faire des décisions après avoir analysé du data.*"
However, their reliance on individuals with backgrounds in industrial engineering or UX suggests that they may not fully develop specialized UX roles or systematic processes across the organization.

In summary, Company B values UX and applies iterative processes but lacks formalized practices and consistent metrics to ensure UX maturity. Their efforts, though proactive at times, could benefit from more structured processes, improved documentation, and a systematic use of UX research to enhance consistency and long-term UX development.

Second touchpoint:

Eight months after the first interview, Company B's process has evolved, but challenges remain in fully implementing UX best practices. When asked about their progress, they said:

Participant #2:"*Le Tech3Lab a dit d'éliminer la verticalité et focuser sur l'horizontale pour aller 100% à l'autre et ça demandait quand même tout un changement de façon dont les pages étaient présentées, la façon qu'on la fait c'est que tout notre site est builder de façon ou on peut intégrer les deux mais on travaille sur une prochaine version ou là on aura les ads positionner de sens inverse que les tuiles de plan pour ne pas briser l'user flow et puis ça c'est la prochaine version.*"

They have not yet fully implemented these changes but plan to do so in the next version, and in the meantime, are integrating some recommendations incrementally.

Regarding their adherence to best UX practices, they commented:

Participant #2: "*Je me réfère sur le livre HEC. On essaye le plus de respecter le plus possible. Mais étant tout seul, l'effective est encore plus restreint alors c'est difficile de le suivre by the book.*" Participant #2 acknowledged the difficult of following a strict UX guideline due to limited resources. Despite this, the company uses a checklist during quality analyses to ensure key principles are respected, saying:

Participant #2: "*à chaque fois qu'on fait des analyses de qualités, on passe une checklist pour être sûr qu'on respecte le caractère minimum qu'on peut aller." However, they recognize that their UX practices are still developing, with [participant #2] estimating they are at "peut-être a 50% de ce que les grosses compagnies font*."

The process of integrating user feedback into their workflow is collaborative. They explain:

Participant #2:, "*On va pousser une première version, Nadir va la confirmer et après le chef des opérations va le présenter aux développeurs et si eux ils ont des questions ou des flags on va trouver un point d'entente*."

This approach ensures that the team reaches consensus before implementation. However, he noted:

Participant #2:"*Rarement j'ai vu mon design réaliser à 100% ou que on me dit quoi faire*"

This highlights the flexibility and iterative nature of their process.

Finally, the company has introduced weekly guerrilla-style user testing. They shared:

Participant #2: "*On a prévu une fois par semaine de faire des tests usagés plus guerilla méthode. On demande au barista et on paye le café des gens qui vont participer à regarder notre site*."

Though they've encountered some challenges with user engagement, they are committed to continuous improvement, saying:

Participant #2: "*On voulait aussi le mettre dans un flow continue et retravailler les pages qui vont bien et les soumettre aux usagers*."

This ongoing testing indicates a growing commitment to refining their design based on user input.

4.2.4 Outcomes

First touchpoint

Company B demonstrates a commitment to leveraging UX outcomes to guide their growth and decision-making processes, though their practices suggest a developing level of UX maturity. UX results and insights are actively shared within the organization. They explained:

Participant #2: "*On montre des maquettes à notre équipe, on montre les résultats à notre petite équipe, les résultats de tests nos plans, et puis on écoute notre équipe qui ont souvent des bonnes idées.*"

This collaborative approach ensures that feedback loops are embedded into their product development cycle. Additionally, the company follows a product-led growth strategy, believing that a good product is what will allow the company to grow.

In terms of internal visibility, UX findings and next steps are communicated consistently across the organization:

Participant #2: *"On a un forum virtuel et des meetings avec toute la compagnie chaque lundi matin. [Participant #2] montre les prochaines étapes, la recherche et les findings qu'il a fait*."

This regular sharing of insights helps align the team with UX goals and fosters transparency.

UX research and best practices also play a significant role in strategic prioritization. The company shared that:

Participant #2: "*Très fréquemment, une fois par semaine, on regarde un enregistrement de notre site web, on a fait des tests UX. Trois tests UX de A/B test en parallèle et après on fait notre choix par rapport aux résultats des tests*."

Their approach emphasizes pragmatism, prioritizing changes based on impact, ease of implementation, and time requirements:

Participant #2: "*On regarde ce qui va prendre le moins de temps, qui est le plus facile a changer et qui va améliorer notre site web le plus. On essaye de prioriser en équipe*."

Overall, company B is making strides in utilizing UX outcomes to shape decisions and align with company goals. However, while they show an interactive and collaborative mindset, more formal processes for documenting and tracking UX results could further enhance their UX maturity over time.

Second touchpoint

The outcomes of Company B's UX efforts reveal that while they recognize the importance of implementing UX recommendations, the impact of their initiatives is still unfolding, with limited

measurable results at present. When asked about the implementation of recommendations from the Tech3Lab in April, they admitted:

Participant #2: "*Ce n'est pas encore implémenté*."

They explained that the complexity of their site, which includes 12,000 to 14,000 pages with varying content across providers and provinces, has made it challenging to patch the existing version:

Participant #2: "*les recommandations du Tech3Lab sont difficiles à intégrer au niveau de patcher le site actuel, ça marche vraiment mieux dans la prochaine version du site*."

For the next phase, they aim to standardize and harmonize content tiles (e.g., price, speed, technology, referral codes) across pages focusing on a mobile-first approach. However, the company expects to only integrate 20-30% of the recommendations into the upcoming version, signaling that the full impact of UX changes may take time to materialize.

Additionally, Company B acknowledged a significant gap in their UX outcomes:

Participant #2: "*They did not get any feedback from users at all.*"

This absence of user feedback limits their ability to evaluate the effectiveness of implemented changes and measure the success of their UX initiatives.

In summary, while company B is making progress by planning improvements for the next site version and aligning content toward a more user-friendly, mobile-first design, the lack of immediate user feedback and measurable outcomes indicates that the full impact of their UX work is still in progress. A more structured approach to tracking outcomes and gathering user insights could significantly enhance their UX maturity over time.

4.2.5 Management

The management at Company B demonstrates a growing awareness of the importance of UX but is still in process of fully integrating UX into its organizational strategy. Their efforts reflect an iterative and collaborative approach, but certain structural limitations suggest that UX is not yet a top priority at the executive level.

While management supports UX by sharing findings and prototypes during weekly meetings and fostering input from the team:

Participant #2:"*On montre des maquettes à notre équipe… et puis on écoute notre équipe qui ont souvent des bonnes idées*"

There is still a reliance on agile, short-term testing rather than long-term, strategic UX initiatives. This indicates that UX is integrated into decision-making but not systematically prioritized as a core management focus.

The company's product-led growth strategy highlights a belief in the value of UX:

Participant #2: "*On pense qu'un bon produit à nous permet de grossir notre compagnie*."
However, management seems to focus more on operational improvement than UX innovation. For example, UX research and A/B tests are conducted frequently, with decisions being driven by practical factors such as ease of implementation and time required:

Participant #2: "*On regarde ce qui va prendre le moins de temps, qui est le plus facile à changer et qui va améliorer notre site web le plus*."

Despite these efforts, UX oversight is fragmented. While management ensures that UX recommendations are reviewed and discussed within teams, more substantial efforts- such as formal documentation or dedicated UX leadership- are limited. UX tasks are shared across roles rather than supervised by a dedicated UX expert, as indicated by:

Participant #2: "*On travaille avec un sous-traitant… et le head of product est celui qui demande les nouvelles fonctionnalités.*"

In summary, management at Company B is making strides toward embedding UX practices, but the company is still transitioning to a more mature level of UX integration. The focus remains on iterative improvements rather than strategic UX leadership, and while the management's efforts reflect a positive direction, there is room for growth in terms of formalizing UX priorities, allocating dedicated resources, and fostering long-term UX planning.

4.2.6 Interface

Company B has made some efforts to improve its interface, but challenges remain in fully implementing UX recommendations, which limits their progress toward higher UX maturity. While the company has acknowledged the importance of following UX recommendations, there are significant delays in applying them. For example, they noted that many changes recommended by the Tech3Lab are difficult to patch onto the existing website:

Participant #2: "*Les recommandations du Tech3Lab sont difficiles à intégrer au niveau de patcher le site actuel, ça marche vraiment mieux dans la prochaine version du site*."
This suggests that improvements are being deferred to future iterations rather than being actively integrated now.

The company is working toward interface harmonization by aligning elements such as mobile-first design and standardizing tiles across the site:

Participant #2: "*On voulait faire une harmonization de toutes les tuiles possibles.. Avec la recommandation et en mettant les tuiles orientées a mobile first*".

However, only 20-30% of these recommendations are planned for the next version, indicating slow progress. This partial implementation limits the positive impact of UX improvements in the short-term and suggests that the interface remains largely unchanged for now.

Furthermore, the company has not yet received feedback from users on the changes:

Participant #2: "*Ce n'est pas encore implémenté.. Nous n'avons pas encore de feedback des utilisateurs.*"

Without insights from users, it becomes challenging for the team to validate whether the planned improvements are aligned with actual user needs. This lack of feedback hinders their ability to measure the impact of their interface changes, negatively affecting their UX maturity by reducing the opportunity for informed iterations.

In conclusion, while company B has made plans to improve its interface, the delayed implementation and absence of user feedback indicate that the interface has remained relatively static. This lack of agility in adapting the interface limits their UX maturity growth, as progress depends not just on planning but on timely execution and continuous user-driven refinement.

4.2.7 Nielsen Norman Group- UX Maturity Quiz

According to the Nielsen Norman Group UX maturity, Company B is in the fourth stage of UX maturity: structured. This stage is defined by being semi-systematic and effective to a degree that recognizes the value of UX . This means that PlanHub understands the value of UX and has some dedicated UX roles. Leadership supports UX and there is a general understanding of UX across the company. Often, the obstacles to move past this stage fall in the strategy factor. Components like growing the UX team, performing more UX related activities, continuously providing UX training to employees unfamiliar with the field, and increasing resources allocated to UX.

Table 6: Company B- First Versus Second Intervention Analysis

UX Maturity Factor	First Intervention	Second Intervention
Strategy	UX considered in product updates.	UX now formally integrated into decision-making.
	"75%-80% focus on user value."	*UX involved early in feature planning.*
Culture	UX seen as important.	Team-wide awareness of UX role grew.
	Viviane and Tim led research, shared weekly updates.	*UX recommendations respected and prioritized in roadmap.*
Process	Iterative UX practices and weekly review sessions.	Continued formal research process.
		Usability testing led to adjustments in onboarding and navigation.
Outcomes	UX findings shared in team meetings but only "moderately visible."	UX results fully integrated into product evolution.
		Noted improvements in user retention and flow clarity.

Table 7- Company B Results Synopsis

Factor	Longitudinal Observation
Strategy	Consistent early-stage UX integration without dedicated budget at first; later funds allocated for recommendations but limited by lack of specialized talent. Plans to hire a dedicated UX expert.
Culture	Initially growing UX awareness (50–60% self-rated) with CEO championing and team-wide involvement. Later became more data-driven using heatmaps and feedback, with user satisfaction as top priority.
Process	Early iterative collaboration without formal metrics; later added Tech3Lab guidance, checklists, and weekly guerrilla testing. Still resource-limited, with partial implementation of best practices.
Outcomes	Initially frequent sharing of UX findings and test results; later faced delays implementing recommendations, with large-scale changes deferred to next version and no user feedback collected yet.
Management	Supportive but focused on short-term improvements over strategic UX leadership. UX tasks spread across roles; relies on subcontractors and Head of Product for oversight.
Interface	Plans for mobile-first design and tile standardization, but only 20–30% of recommendations to be implemented in next version. Current interface largely unchanged; no user feedback gathered on
UX Maturity	Stage 4 (Structured): Semi-systematic with leadership support and some dedicated UX roles; to progress, needs more resources, team growth, training, and strategic integration.

4.3 Company C

Company C is an e-commerce company based in Montreal operating in the online grocery sector (NAICS 454110). Founded in 2019, the company employees 3 people and focuses on improving customer access to online groceries. Despite its strong customer-facing product, the company had no UX/UI specialist, and UX work was performed informally by the founders and developers.

4.3.1 Strategy

First touchpoint:

Company C faces several strategic challenges in developing and sustaining its UX efforts, largely due to limited financial resources and reliance on external funding. When asked about their UX budget, they acknowledged:

Participant #3: "*On n'a pas de modèle actuellement, ce sont les subventions et les bourses. Il n'est pas viable à court terme. Après, il faudra plus d'entrées en capital pour être en mesure de soutenir ces activités.*"

This lack of sustainable budget limits their ability to fully integrate UX practices in the long term.

Regarding UX resources, the company primarily relies on benchmarking against competitors:

Participant #3: "*On utilise essentiellement les sites de concurrence [...] on essaye d'en inspirer, faire des modifications chez nous*." Without dedicated UX tools or expertise, they adapt best practices observed from others. This approach demonstrates a practical, if informal, way of staying competitive in the absence of formalized resources.

In terms of integrating UX into their processes, they explained that because the same person handles both software development and UX adjustments, these activities are seamlessly aligned:

Participant #3: "*Aujourd'hui ils sont totalement intégrés vu que c'est la même personne pour le moment qui fait travailler donc le développement logiciel va faire les modifications sur l'expérience utilisateur.*"

This arrangement ensures consistency, though it might limit the depth of UX specialization.

The company's UX activities are largely reactive, focused on addressing customer feedback:

Participant #3: "*On prend le feedback des clients aussi. Si le client me dit qu'il a de la difficulté à rajouter des produits dans son panier [...] on essaie de faire des modifications.*"

While some changes are simple and implemented immediately, more complex issues require deeper discussions that can take 3 to 4 months to address.

Overall, Company C's strategy reveals a reliance on short-term adjustments driven by competitor benchmarks and customer feedback. With minimal UX leadership and no dedicated budget, their UX efforts remain practical but reactive, focusing on incremental improvements rather than long-term planning. This limits their ability to fully mature in UX strategy and leadership.

Second touchpoint:

Company C revealed significant strategic shifts, reflecting a change in both business model and UX implementation efforts. Previously focused on operating a marketplace that allowed customers to

order from multiple stores for same-day delivery, the company has now pivoted to providing software to independent grocery stores:

Participant #3: "*Oui, avant on faisait une marketplace [...] Maintenant, on vend du logiciel à l'épicerie indépendante*."

This shift from B2B to B2C models signals a major strategic change that influences the role of UX in their operations.

In terms of leadership and supervision, UX recommendations from April were overseen by the two company CEOs:

Participant #3: "*Les CEO, Walid et Djalil, ils sont seuls dans la compagnie alors c'est discuter entre eux et après c'est implémenter.*"

With such a small team, the decision-making process remains centralized and streamlined, though it may limit broader involvement or specialized input on UX matters.

Company C has taken steps to prioritize UX financially, reporting that they now have a dedicated budget for implementing recommendations:

Participant #3: "*On a mis un budget à part pour implémenter ces recommandations*."

This shift suggests an increasing recognition of UX as a strategic priority.

To support the redesign of their platform, they enlisted the help of an external UI/UX consultant:

Participant #3: "*On a utilisé un consultant a l'externe UI/UX qui nous a fait le redesign de notre nouveau site*."

However, the company still relies heavily on the CEO, Djalil, as the internal resource for UX:

Participant #3: "*Djalil est la ressource [...] ils n'ont pas de ressources spécifiquement dédiées à l'UX.*"

This suggests that while UX is being integrated into their processes, the absence of dedicated UX personnel could limit their ability to develop deeper expertise over time.

Overall, Company C's strategic evolution highlights progress in UX prioritization through budget allocation and external consulting. However, the reliance on top leadership for UX implementation and the lack of specialized internal resources suggest that while some strategic improvements have been made, there are still limitations in fully maturing their UX practices.

4.3.2 Culture

First touchpoint:

Company C's UX culture is in its early stages, with a growing but still foundational understanding of UX principles. They recognize that while their team members are beginners in UX, they are quick to grasp key concepts when introduced:

Participant #3: *"*On est les débutants [...] on est capable d'assimiler les concepts assez rapidement*."*

UX is viewed as an important factor in retaining and attracting customers, especially since their B2C platform relies on a seamless user experience:

Participant #3: *"L'UX joue beaucoup dans la capacité à garder et à tirer les clients."*

However, UX responsibilities and decision-making are shared, with co-founder Walid taking a leading role but no single individual dedicated exclusively to UX decisions.

While customer feedback drives many UX improvements—making clients themselves a central champion of UX—the team structure limits deeper employee engagement in UX processes. Couriers and other non-UX employees have minimal input in UX discussions, indicating that broader UX awareness has yet to permeate the entire organization:

Participant #3:*"Les coursiers n'ont pas vraiment de feedback par rapport au UX."*

Currently, co-founders Djalil and Walid handle UX considerations, supported by an external UX consultant and engineering input when needed.

In terms of UX career growth, there is no dedicated path yet, but the company sees potential for future roles to grow into managerial positions within UX, as it expands:

Participant #3: *"Les employés spécialistes en UX quand on les aura [...] ils peuvent devenir des managers."*

As they move forward, Company C anticipates more structured supervision and possibly an agile approach to UX, which they see as a future goal. Their UX culture is thus marked by openness to development but is yet to fully integrate or formalize UX processes across the organization.

Second touchpoint:

Company C's approach to UX culture reveals gradual growth in understanding UX concepts and practices, with recent user testing helping them become more attuned to the importance of user experience:

Participant #3: *"On a acquis un peu plus de knowledge par rapport à [...] qu'est-ce qu'il faut regarder en termes d'expérience utilisateur."*

Although the team has increased its awareness, prioritizing UX is now less critical due to a shift from B2B to B2C. Their primary focus is to ensure that merchants—now their main users—can independently use the software without friction:

Participant #3: *"On veut juste s'assurer qu'il est autonome."*

Despite this progress in UX sensitivity, the team's skillset has not advanced significantly since their initial training, as other roles take priority over dedicated UX education:

Participant #3: *"Je n'ai pas développé beaucoup de compétences [...] je travaille sur plusieurs aspects dans la compagnie."*

Consequently, there is currently no established path for UX-focused career development within Company C. The co-founders prefer a lean approach, aiming to maximize current resources rather than expanding the team quickly, viewing this lean model as more sustainable for their goals:

Participant #3: *"Small is beautiful"*.

While Company C values the UX insights gained so far, the team maintains a flexible and resource-conscious approach, prioritizing software improvements over formal UX training or dedicated UX career pathways. This approach reflects a practical, evolving UX culture centered on adaptability and direct response to client feedback.

4.3.3 Process

First touchpoint:

Company C's current UX process shows limited adherence to established UX best practices, as they acknowledge that their approach:

Participant #3: *"ne respecte pas les meilleures pratiques UX."*

Although they recognize the importance of refining their processes, there is no continuous improvement model in place to enhance UX methods due to resource constraints. They see a need for a structured, incremental improvement approach starting in 2023 to address these limitations:

Participant #3: *"il faudra un peu et puis une structure pour savoir faire de l'amélioration incrémentale."*

User satisfaction holds a moderate level of importance for Company C, rating it around 6 out of 10, with aspirations to improve it to an 8 or 9 by enhancing platform usability:

Participant #3: *"mais je pense qu'on pourrait être beaucoup mieux."*

However, due to a lack of dedicated UX specialists, the team's UX skill level remains basic. Team members possess functional front-end skills like coding in Python, CSS, and JavaScript, which support prototyping efforts, though their theoretical UX knowledge is minimal: *"En termes de compétences théorique je n'en ai aucune."*

Overall, Company C's UX process is currently limited in scope and documentation, affecting UX consistency and maturity. While improvements are planned, the lack of formal UX expertise and systematic methodologies restricts the potential for immediate, meaningful progress in their UX approach.

Second touchpoint:

Company C has selectively implemented UX recommendations provided in April, applying only those elements relevant to their new product. For example, they retained specific color choices in the shopping cart, as these were seen to add value to the interface, while other suggestions that did not suit the current product were omitted:

Participant #3: *"y'en a autre qu'on n'a pas rajouter…parce qu'ils ne s'appliquent pas au produit actuel."*

In terms of UX practices in the interface, they make incremental adjustments to improve usability, such as paying attention to color and ensuring "alt" tags for accessibility. However, their overall approach to UX remains minimal, with small adjustments rather than a comprehensive strategy:

Participant #3: *"on n'a pas nécessairement énormément de changement mais légèrement de changement."*

The design process is highly collaborative between the two founders, relying on client feedback to inform gradual product tweaks. Their approach to user-centered design is reactive, launching products quickly and refining them based on user responses over time:

Participant #3: *"on prend le feedback de nos clients puis on tweak le projet progressivement."*

Looking forward, Company C acknowledges the importance of UX in supporting their new product's growth and intends to develop a more systematic UI/UX improvement plan. They plan to gather feedback from an expanding client base, identifying pain points and necessary tweaks to create a more structured UX development process:

Participant #3: *"on essaye de récolter leur feedback pour…établir un plan de développement UI/UX pour le produit."*

4.3.4 Outcomes

First touchpoint:

For Company C, the sharing and visibility of UX outcomes within the company are relatively high, as they state:

Participant #3: *"the whole team is truly informed"*

This indicates that any findings from user research, design, and interface decisions are communicated openly across the organization. However, the incorporation of these UX outcomes into decision-making and prioritization processes is limited, occurring only once every 3-4 months. This infrequency reflects the company's current focus on other operational priorities, such as:

Participant #3: *"improving operations, raising capital, and adding more merchants."*

As a result, UX outcomes play a smaller role in shaping the company's immediate strategic direction, highlighting an opportunity for more consistent integration of UX insights as the company grows.

Second touchpoint:

For Company C, implementing UX recommendations from the prior assessment in April proved challenging. Although some recommendations were partially implemented, the company later shifted focus to different priorities, resulting in an incomplete application of the suggested changes. As they explain:

Participant #3: *"we couldn't fully implement the recommendations...the company was focused on something else, so we didn't really intend to follow through with it."*

This lack of full integration also means that the company hasn't been able to test these changes or gather user feedback, with one respondent noting that:

Participant #3: *"we haven't had the chance to test it because we couldn't fully implement the recommendations."*

This limited application and testing of UX improvements have impacted the company's ability to measure the effectiveness of UX work, representing an obstacle to advancing UX maturity in the organization.

4.3.5 Management

Company C's management reflects a developing approach to UX maturity, with varying levels of prioritization and organization in their UX efforts. Initially, they demonstrated awareness of the value of UX and acknowledged its role in user retention and satisfaction. The company rates UX as quite important, with a stated priority level of 4-5 out of 5, largely due to its impact on customer retention in their B2C services. However, despite this recognition, their UX activities remain minimally structured and loosely integrated into their broader strategy. UX efforts are primarily handled by the CEO and co-founder, without a dedicated UX team or leadership, and are reliant on occasional external consultants and limited internal resources.

There is some attempt to include UX practices, such as using basic competitor benchmarking and customer feedback to inform design updates. However, the lack of a structured, continuous UX improvement process and the absence of dedicated UX professionals beyond occasional consultancy work mean that UX remains more reactive than proactive. UX recommendations made in April, for example, were only partially implemented due to shifting company priorities, and feedback or testing on these changes was not conducted.

This approach suggests that while Company C's management understands the importance of UX, they lack the formal processes, leadership, and resource investment to develop UX maturity fully. Their current priorities lie more in operational and financial growth, with UX improvements addressed only periodically every few months. For significant UX maturity to develop, the company would need to establish dedicated UX roles, a clear process for ongoing UX integration, and more consistent prioritization of UX in strategic planning and decision-making.

4.3.6 Interface

Company C's interface development reveals moderate progress in UX implementation, showing both strides and limitations that influence its UX maturity. They have implemented some recommendations, though this has been partial due to limited resources and evolving company priorities. User feedback has informed occasional updates, but a comprehensive UX testing or iteration process is not yet in place. While some adjustments have enhanced user interaction—such as improving certain visual elements like color schemes and button accessibility—the changes remain incremental and lack the structured approach typical of a mature UX strategy.

Without systematic testing or iterative adjustments, the insights gained from users are not fully maximized, meaning any potential UX improvements are applied in a reactive rather than proactive manner. This impacts UX maturity, as user-centered design principles and best practices are inconsistently applied, and changes are often deprioritized in favor of other operational needs. For company C to progress, establishing a dedicated process for gathering, analyzing, and iterating on user feedback would be essential. Doing so would help ensure their interface evolves more strategically and responsively, positively contributing to their UX maturity.

4.3.7 Nielsen Norman Group- UX Maturity Quiz

For Company C, reaching stage 3 "Emergent" in the Nielsen Norman UX maturity model indicates that UX practices are recognized and beginning to take form within the organization, though they are not yet fully structured or standardized. In this stage, the company has some UX activities in place, but these efforts are often ad-hoc, project-specific, and lack integration across teams. Awareness of UX is growing, and there may be some commitment to improving user experience, but processes for research, design, and iterative testing are still developing. Moving beyond this stage typically involves formalizing UX practices, securing dedicated resources, and establishing consistent methods for integrating UX insights into product development and company strategy.

Table 8: Company C- First Versus Second Intervention Analysis

UX Maturity Factor	First Intervention	Second Intervention
Strategy	UX seen as a high priority.	Maintained focus, but lacked a long-term UX roadmap.
	"Première priorité."	
Culture	UX shared responsibility.	Culture remained collaborative.
	"Tout le monde est égal." Two champions defended UX internally.	*UX insights gathered from forums, interviews, and internal testing.*
Process	Partners and advisors conducted user interviews and prototyped ideas.	Continued iterative development with AI exploration and Reddit forums.
Outcomes	UX improvements surfaced in design documents but lacked structured evaluation.	Some updates to UI occurred based on insights, but progress toward measuring UX impact remained unclear.

Table 9- Company C Results Synopsis

Factor	Longitudinal Observation
Strategy	Initially reactive, budget from grants; relied on competitor benchmarking and customer feedback. Later pivoted from marketplace to software for independent grocers, added dedicated UX budget, hired
Culture	Early stage understanding, co-founders lead UX, limited staff involvement. Later gained some testing experience, shifted focus to merchant autonomy, maintained lean "small is beautiful" approach with no
Process	Early approach lacked best practices and structure; basic technical skills but minimal theoretical UX knowledge. Later selectively applied recommendations, made small incremental tweaks, and planned
Outcomes	Initially high internal visibility but integration into decisions only every few months. Later partially implemented recommendations without testing or feedback, limiting ability to measure impact.
Management	UX considered important for retention but handled by CEOs with occasional consultants; no dedicated team. April recommendations only partly implemented due to shifting priorities.
Interface	Partial visual and accessibility improvements, guided by occasional feedback. No structured testing or iteration process, changes reactive rather than proactive.
UX Maturity	Stage 3 (Emergent): Some UX activities and awareness, but ad hoc and project-specific; needs formalized processes, dedicated resources, and consistent integration.

4.4 Company D

Company D is a digital services company located in Montreal that provides management and grading solutions for digital exams (NAICS 541512). Founded in 2019, the company has 5 employees and primarily serves educational institutions. UX was not yet institutionalized, and product decisions were driven by functional requirements rather than user research.

4.4.1 Strategy

First touchpoint:

The strategic approach to UX at Company D shows a growing emphasis on integrating user-centered design with a flexible budget allocation based on urgency. They have implemented key UX resources, such as KPIs that track support calls and user satisfaction, along with foundational tools like style guides and personas. Their UX activities, including user surveys, QA, user interviews, and weekly brainstorming sessions with the team, suggest a structured yet responsive approach to capturing user insights. The integration of user research and UI work is reported to be "intimately linked" within the organizational process, reflecting a commitment to making UX a core aspect of product development and operational strategy. However, the budget's variability and ad-hoc nature could indicate a need for more consistent, dedicated funding to support long-term UX goals effectively.

Second touchpoint:

Eight months later, Company D has made strides in UX, specifically in interface development, as noted:

Participant #4: "*Oui, en termes de développement d'interface, beaucoup de nouvelles interfaces*." For UX implementation, the process involve collaborative decision-making. The UX lead shared:

Participant #4: "*Moi qui fais les recommandations et Hubert (CTO) qui prend la décision par rapport à l'effort de développement pour voir si c'est possible de l'entrer dans le sprint*"

This explains that the final decision rests with the CTO, particularly on technical feasibility. Budget allocation remains a challenge, with:

Participant #4: "*fonds oui, du moins parce qu'on arrivait dans notre période très achalandée.*"

This prioritization has deferred some recommendations, yet the company expects more comprehensive funding in the coming months.

Company D has managed to internally implement many straightforward recommendations due to a detailed report that included:

Participant #4: "*des prints screens avec tout ce qu'il a été recommandé alors le côté développeur c'était facile de les mettre en place*."

However, larger-scale improvements, such as onboarding and screen-sharing features, will need an external designer's input for thorough execution, as they acknowledge:

Participant #4: "*Depuis avril on n'a pas eu de designer externe mais dans les prochains mois ça va être envisager*."

4.4.2 Culture

First touchpoint:

Company D's culture around UX shows a growing awareness of its importance, though it remains primarily managed within cross-functional roles rather than by dedicated specialists. They actively involve non-UX employees in UX activities through:

Participant #4: "*essais erreur, maquettes, QA test (bugs), design UI, coding, test utilisateur 'normal'*."

User satisfaction is highlighted as one of their highest priority, showing commitment to user-centric goals. Final decisions and UX advocacy are led by the CTO, who has experience in IT with the responsibility for UX shared among the three company directors. However, there is currently no specialized UX team or dedicated UX professional, as they clarify that there isn't one. To address this, they are planning to recruit a dedicated UX specialist in the future. UX activities and design mockups are peer-reviewed, with Hubert providing feedback on externally developed designs, and they see future UX career development potential as open-ended, although there is no UX specialist at present.

This collaborative approach shows an effort to integrate UX, though a specialized structure for UX oversight remains a future goal.

Second touchpoint:

Eight months after their initial interview, Company D has demonstrated growth in its understanding and integration of UX principles across the team. Reflecting on progress, one representative noted a slight improvement in UX comprehension, especially in messaging clarity and design principles, acknowledging that these insights have helped them become more aware of the principles that they need to keep in mind when working on mockups. The company prioritizes user satisfaction as:

Participant #4: “*extremely, very high,*”

This recognizes its direct impact on customer support and overall service experience. Employees also expanded their UX knowledge through external resources provided by Tech3Lab, with one participant stating that the reading materials and workshops provided a benefit and made a difference, helping them grasp topics like brainstorming and design fundamentals.

Professional growth in UX has become a clear focus, with the company planning to hire an in-house UX specialist soon. They currently rely on contract-based UX professionals, collaborating closely with developers. This strategic shift toward adding a dedicated UX role underlines Company D’s commitment to solidifying UX within their long-term goals, moving away from ad-hoc integration and building a more structured approach to user-centered design.

4.4.3 Process

First touchpoint:

The results of Company D’s process reveal an informal and evolving approach to UX practices. While they reference a "design charter" developed by the marketing team to guide consistency, decisions are often made based on judgment, which they describe as:

Participant #4: “*faster and more efficient*.”

However, they acknowledge the lack of a formal UX structure, highlighting an area for potential growth in their process. User satisfaction is a strong focus, as evidenced by their impressive 100% client renewal rate over the past three years, suggesting that their efforts, though unstructured, are resonating positively with customers.

In terms of UX competencies, employees have developed practical skills through hands-on experience, such as learning Figma via trial and error and conducting research and benchmarking. They also engage in the analysis of user feedback, showcasing a mix of technical and non-technical skills. While this approach demonstrates adaptability and resourcefulness, the absence of a systematic process may limit the company’s ability to fully capitalize on UX opportunities and ensure long-term consistency in their design and research methodologies.

Second touchpoint:

Eight months later, Company D demonstrates significant progress in integrating UX recommendations and improving their processes. They report implementing approximately 80% of the recommendations provided in April, specifically highlighting improvements in error messaging for required form fields. The internal team handled these changes, leveraging their own resources without relying on external designers, which they describe as a successful application of the recommendations.

While the company strives to adhere to best UX practices, their approach is pragmatic and resource-conscious, operating on an 80-20 rule that prioritizes simplicity and essential usability testing over exhaustive accessibility standards. They acknowledge their limited knowledge of advanced UX practices, but they compensate by focusing on basic usability scenarios and ensuring clarity in user interactions before moving to production.

User research and UI efforts are deeply embedded in the company's processes. Feedback from support teams and sprint reviews is directly integrated into development, creating a streamlined workflow for iterative improvements. However, the company remains constrained by its small team size, limiting their capacity for extensive UX research and design activities.

Looking ahead, they recognize the importance of expanding their UX capacity, either by hiring an internal specialist or providing additional training for existing team members. They see significant value in having a designer collaborate closely with developers, which they believe would streamline workflows and enhance output. Despite current constraints, their commitment to improving UX practices and integrating user-centric strategies reflects a strong foundation for continued growth.

4.4.4 Outcomes

First touchpoint:

The outcomes of UX efforts at Company D highlight a structured yet informal approach to sharing and utilizing UX results. Within the company, UX results, such as user research findings and interface designs, are shared informally through functional brainstorming sessions involving the three directors, often resulting in proofs of concept (POCs). Externally, mockups are used to further these discussions and plans. The visibility of UX results is emphasized through meetings where findings are shared with the entire team, ensuring alignment and transparency.

Best UX practices and research outcomes play a role in decision-making and strategic prioritization. After each evaluation, results are compiled and integrated into a word map, allowing for a

systematic approach to addressing issues. Prioritization focuses on resolving bugs and reducing support calls and emails, reflecting an effort to tie UX improvements directly to measurable impacts like customer satisfaction and operational efficiency. This approach demonstrates a growing maturity in defining and leveraging UX outcomes for the company's benefit.

Second interview:

Eight months later, the outcomes of UX efforts at Company D show incremental progress, with some positive impacts on the interface and user experience. Regarding the integration of UX recommendations from April, the company observed:

Participant #4: "*slight improvements in certain parts of the application*."

However, the audit covered only a small portion of the interface, leaving broader areas unaddressed. They highlighted issues like user difficulties with the viewer feature but lacked concrete recommendations to fully resolve the problem. As a result, the primary improvements centered around refining error messages to provide better guidance for participants.

In terms of user feedback, the company noted encouraging metrics. A significant reduction in support requests was observed alongside an increased volume of exam creation, suggesting that UX changes positively influenced usability. While they could not precisely quantify the impact of the implemented recommendations, they acknowledged that these adjustments contributed to the observed improvements, reflecting a modest but meaningful enhancement of their UX outcomes.

4.4.5 Management

For Company D, the approach to UX maturity from a management perspective shows gradual progression but still reflects a more foundational level of UX integration. While UX is acknowledged as essential, especially for customer satisfaction and user-friendly experiences, there is no dedicated UX leadership or department. Currently, decision-making falls to technical leaders like Hubert, the CTO, who supervises UX decisions by balancing development feasibility with the available resources, including limited budget and staff time. Although the directors express a strong commitment to enhancing UX, they face constraints that impact UX planning and prioritization, particularly as workloads increase.

UX is integrated into broader team activities—brainstorming sessions, user surveys, and QA tests—though these are often informally structured and are led by those with minimal UX-specific

training. Over the last eight months, management has begun prioritizing plans for UX improvements, such as hiring a dedicated UX person or further upskilling existing staff, signaling their recognition of UX's added value.

Overall, while Company D's management shows awareness of UX importance, their approach to prioritizing, supervising, and organizing UX efforts remains somewhat ad hoc. Their UX maturity level suggests a transitional phase, where practical limitations are managed with incremental improvements and a focus on building UX knowledge within the team. As they grow, a more formalized approach with dedicated UX roles and resources will be essential to advance UX maturity further.

4.4.6 Interface

The insights on the interface for Company D suggest partial progress in implementing UX recommendations, reflecting both advancements and areas for improvement. The company acknowledged some success in applying the recommendations from April, particularly in improving error messages within the application. However, they admitted that not all aspects of the interface were audited, limiting the scope of the changes made. For example, issues with the application's vision feature were identified during testing but were not addressed with concrete recommendations, resulting in only minor improvements.

In terms of user feedback, the company reported a decrease in support requests, indicating a positive impact from the implemented changes. They also observed an increase in the volume of written exams submitted, suggesting an overall enhancement in the usability of certain aspects of the application. However, they were unable to directly attribute specific improvements to the recommendations made, showing a lack of clear measurement and tracking of UX outcomes.

Overall, while Company D has made incremental improvements to its interface based on the recommendations, the limited scope of implementation and the lack of systematic tracking and evaluation highlight challenges in advancing their UX maturity. These gaps suggest that while the interface has seen some progress, there is room for more comprehensive and measurable improvements to achieve greater maturity in their UX practices.

4.4.7 Nielsen Norman Group- UX Maturity Quiz

A **Stage 3: Emergent** rating on the Nielsen Norman Group UX maturity model indicates that Company D is in the early stages of integrating UX into their processes and culture. At this level, the organization recognizes the importance of UX and has begun implementing UX practices, but these efforts are inconsistent, informal, and often depend on the initiative of specific individuals rather than a systematic approach.

While some progress has been made—such as applying UX recommendations, improving certain interface elements, and tracking basic user feedback—the company lacks dedicated UX roles, formalized processes, and sufficient resources. UX efforts tend to focus on immediate needs rather than being part of a long-term, strategic plan. To advance to higher levels of maturity, Company D would need to establish structured UX processes, invest in specialized personnel, and align UX efforts with organizational goals systematically.

Table 10: Company D- First Versus Second Intervention Analysis

UX Maturity Factor	First Intervention	Second Intervention
Strategy	UX acknowledged but lacked formal planning.	UX increasingly used to guide feature development.
	"On fait de notre mieux."	*Feedback from users now influences roadmap decisions.*
Culture	One internal UX advocate, low team-wide involvement.	Developers and marketers now contribute to user research and analysis sessions.
Process	Informal usability testing, minimal documentation.	Usability tests triggered onboarding changes. Feedback is more systematically captured.
Outcomes	UX findings inconsistently acted upon due to time constraints.	Clearer connection between feedback and changes made, such as interface adjustments.

Table 11- Company D Results Synopsis

Factor	Longitudinal Observation
Strategy	Initially had flexible, urgency-based UX budget with KPIs, style guides, personas, and linked research/UI processes. Later advanced interface work, implemented many easy fixes internally, but larger changes
Culture	Early cross-functional UX participation, high satisfaction priority, no dedicated specialist but plans to hire. Later showed slight UX knowledge gains from training, kept UX priority high, and committed to adding an
Process	Early informal approach with design charter, high client retention, skills gained through trial/error. Later implemented ~80% of recommendations, used pragmatic 80-20 rule, embedded feedback in sprints, but
Outcomes	Initially shared UX findings informally but tied them to measurable impacts like reduced support calls. Later saw modest improvements (e.g., error messages) and fewer support requests, but limited scope
Management	UX recognized as essential, led by CTO balancing feasibility and resources; no dedicated leadership. Plans to hire or upskill staff to strengthen UX capacity.
Interface	Partial improvements (mainly error messaging), reduced support requests, increased exam submissions. Limited audit scope and tracking leave room for broader, measurable updates.
UX Maturity	Stage 3 (Emergent): Recognizes UX importance and applies some practices, but efforts are inconsistent and rely on individuals; needs dedicated roles, structured processes, and systematic alignment with goals.

4.5 Company E

Company E, founded in 2018 and based in Quebec City, operates in software solutions for hybrid workplace management (NAICS 541512). The company has 11 employees and offers tools for office space booking and team coordination. Despite being product-oriented, Company E did not have established UX processes or dedicated roles, and design decisions were influenced mainly by client requests.

4.5.1 Strategy

First touchpoint:

Company E's strategy regarding UX reflects some efforts to incorporate it into their processes, though it remains at an emergent level. When asked about their UX budget, they stated:

Participant #5*: "Il n'y a pas de budget lier à ça en ce moment, il y a un budget lier au développement des produits et dans ce budget-là on met un 15 heures minimum avec Nexapt qui nous aide points de vue UI/UX. Je pense que c'est toujours important de dédier un % à l'UX."*

This indicates that while there is no dedicated budget for UX, a portion of product development resources is allocated to it, emphasizing its perceived importance.

The company uses some UX resources, such as:

Participant #5*: "la librairie des composantes, relatif à customer journey map (pas été fait), des personas qui ne sont peut-être meilleur parce qu'ils ont été faits 1 ans et demi. Hotjar et des sondages, cours survey pour les utilisateurs (Maze)."*

These tools demonstrate a foundation for UX work, though the outdated personas and incomplete customer journey map suggest room for enhancement.

When describing their integration of UX in organizational processes, they shared:

Participant #5*:"Quand même intégré à un certain niveau. On fait des développements de logiciels agile : des sprints de 2 semaines où on définit un objectif de produit sur 3 mois, on essaye de découler les fonctionnalités pour répondre à l'objectif produit et pendant ces 3 mois on fait les sprints. Ça bouge beaucoup, c'est très rapide le processus. On va travailler en amont pour le prochain trimestre. Il n'y a pas de test utilisateur, ça va directement dans les mains des utilisateurs."*

This reflects a fast-paced, agile environment where UX considerations are somewhat present but not deeply embedded, as user testing is bypassed.

Regarding UX activities, they mentioned:

Participant #5*: "Sondages, prises de cartes, création de persona, recherche de persona, accumuler les données, questionnaires de test utilisateurs."*

These activities are promising but appear to be sporadic rather than systematically integrated into their workflow. This indicates a growing awareness of UX but highlights the need for further investment and strategic prioritization.

Second touchpoint:

Eight months later, Company E's strategy regarding UX has evolved slightly but still remains in an emerging phase. When asked about any major changes, they replied that there has been nothing, indicating that the core structure of their approach to UX has not shifted significantly.

Regarding the supervision of UX recommendations, they mentioned:

Participant #5*:"Anthony. C'est Joisiane qui les appliquent mais on retravailler UI pour qui fit mieux avec ce qu'on avait avec le lab et on les utilise et tout ça et moi je supervise plus la fonctionnalité en temps de PO. On a parlé quand on a fait l'étude avec vous, on a montré les résultats puis c'est ça et*

après on est reparti dans le design de la feature avec les construits qu'on a eu et qu'est-ce qu'il est possible à faire point de vue développeur de chef. On a appliqué l'équipe logiciels. Initialement c'était juste du design et après il fallait voire qu'est-ce qui est réaliste de faire, on a dû enlever quelques trucs mais oui c'est communiquer avec l'équipe."

This indicates that while recommendations are being implemented, the process is still very much driven by practicality and development constraints, with design adjustments made based on what is feasible for the development team. This suggests some level of collaboration between design and development but also highlights that trade-offs are common.

When asked about the UX budget, they responded:

Participant #5*: "Oui, on a mis l'équipe de développement là-dessus."*

This suggests that, while the company has not explicitly dedicated a separate budget for UX, they are allocating development resources to support UX initiatives. This is an improvement from the previous interview, indicating a slight shift toward prioritizing UX within the broader development budget.

Lastly, when asked about the resources used for implementing recommendations and future UX activities, they stated:

Participant #5*: "L'équipe de développement (moi et Josiane- à l'externe). On va continuer de travailler avec Josiane."*

This shows that the company is continuing to rely on external resources for UX expertise, with the intention of collaborating further with Josiane to continue improving their UX efforts. This highlights an ongoing commitment to UX but also points to a reliance on external expertise to supplement internal capabilities.

4.5.2 Culture

First touchpoint:

The culture at Company E demonstrates a growing awareness and appreciation for UX, but it also highlights some structural challenges. The company acknowledges that its UX understanding is still developing, stating:

Participant #5*: "Josiane et Alexandra ont plus de compétences en UX qui ont déjà un meilleur background que nous... Mais je pense qu'on a une certaine base et une certaine connaissance UX."*

This indicates that UX knowledge is unevenly distributed, with Josiane and Alexandra serving as primary experts. Despite this, the company recognizes the importance of UX for differentiation in a competitive market, emphasizing:

Participant #5*: "Je pense focuser sur le UX UI c'est crucial pour notre entreprise... On croit vraiment que c'est fondamental."*

Collaboration across teams is evident, with non-UX employees providing input through sales discussions and client interviews, while the UX/UI team integrates this feedback, as described:

Participant #5*: "Il y a beaucoup de notre feedback qui vient dans les discussions de ventes... on essaye de ramener Josiane et PO qui font des entrevues."*

However, the roles and decision-making processes are not fully streamlined, as noted:

Participant #5*: "C'est ce qu'on a clarifier dans les prochaines étapes... La réalité c'est que ça devrait être le PO qui rêve des priorités."*

Currently, Anthony handles final decisions reluctantly, reflecting the company's transitional stage.

Josiane emerges as the UX champion and primary executor of UX work, described as working alone with limited internal support but the ability to consult external resources when needed. Leadership acknowledges the long-term potential for growth in UX roles, with aspirations for an internal designer and structured career advancement, as noted:

Participant #5*: "À long terme, avoir un designer à l'interne... potentiellement l'avancement de carrière : chief UX."*

Overall, the company values UX but faces resource and organizational constraints that limit its potential to fully cultivate a robust UX culture.

Second touchpoint:

Eight months later, Company E's culture surrounding UX shows slight improvement in understanding and integration but continues to face significant constraints. The company recognizes that UX comprehension has grown modestly, as expressed:

Participant #5*: "Je pense que ça à un peu augmenté mais on n'est pas des experts... je suis loin d'être un expert, mais amélioration oui."*

Employees have gained some knowledge through exposure to tools and methodologies introduced by Tech3Lab, such as user testing processes, though their application remains limited:

Participant #5*:"Je pense qu'on a appris plus quand ils nous ont expliquer le processus des tests utilisateurs qui ont réalisé... c'était la première fois que j'étais disposer à ça."*

User satisfaction remains a clear priority for the company, viewed as a key differentiator:

Participant #5*: "C'est clairement important, je pense que c'est un de nos éléments différentiable."*

However, the practical balance between designing user-friendly features and managing development constraints leads to a trade-off approach:

Participant #5*:"Oui, il faut faire une bonne expérience mais... écouter le feedback et après revenir. Alors c'est important, mais faut être agile là-dedans."* This mindset reflects a practical but resource-limited strategy for incorporating UX improvements.

The role of UX remains largely dependent on external contractors, with Josiane continuing to lead UX efforts independently. The company acknowledges its limitations in creating dedicated UX roles or fostering career growth for UX specialists, citing its small size:

Participant #5*: "La réalité c'est qu'on est 10... on n'est pas assez gros comme entreprise quand même pour avoir un poste UX alors développement de carrière encore moins."*

While there is an awareness of the value of UX, the company's size and resource constraints significantly limit its ability to develop a robust UX culture internally.

4.5.3 Process

First interviews:

Company E's process for UX demonstrates ongoing efforts toward improvement but reflects challenges in achieving consistency and systematic application. Historically, the company lacked dedicated UX resources, relying on developers to make UI/UX decisions, which led to inconsistencies:

Participant #5*:"Pour longtemps on n'avait pas de designers d'interface... c'était un peu du bricolage. Les développeurs faisaient les décisions UI/UX."*

Currently, the company is striving to adopt best practices, though it acknowledges being:

Participant #5*: "à mis chemin à apporter des nouvelles pratiques."*

Efforts to improve UX methods are evident through participation in programs like Tech3Lab, signaling a commitment to progress:

Participant #5*: "Participer au programme, ça montre un effort de vouloir améliorer nos processus UX/UI."*

However, resource limitations pose challenges, as it is a balance between time, resources and willingness. This results in UX practices being applied selectively based on feasibility and perceived complexity.

User satisfaction is highly valued, with internal feedback being overwhelmingly positive:

Participant #5*:Les vrais utilisateurs qui utilisent la plateforme à chaque jour : unanime à l'interne, ils adorent ça."*

External reviews are monitored carefully to validate customer insights, reinforcing the importance of UX in client relationships.

The most specialized UX contributor, Josiane, brings a strong toolkit and expertise, leveraging tools like Figma and Miro to bridge design and development efforts:

Participant #5*: "Toolkit en général: background en design graphique... figma, recherche, livres, miro (templates)."*

While these skills add value, the absence of a fully integrated and documented process limits the scalability and consistency of UX efforts within the organization.

Second touchpoint:

Eight months later, Company E has made progress in incorporating UX into its processes but continues to face some challenges in fully integrating and planning its UX efforts. Notably, they implemented a dashboard that performed well in usability testing:

Participant #5*: "On a implémenté le dashboard qu'avait eu le meilleur résultat. C'est en ligne depuis 2 semaines et récolte le feedback user en ce moment."*

This indicates a growing emphasis on user feedback to guide development. Additionally, the team has become more deliberate in their approach, taking extra time to refine UX flows:

Participant #5*: "L'application est rendue plus mature... ça permet d'aller prendre un peu plus récolte et de réflexion."*

User research tools like Hotjar are being used to make informed decisions, such as removing underutilized features to simplify the interface:

Participant #5*: "On a pris la décision d'enlever un feature... on a présenté les statistiques de Hotjar."*

However, while some feedback is shared and acted upon in quarterly meetings, the company acknowledges a lack of clear communication channels for discussing UX systematically.

Future UX activities appear less defined, as the company is focusing on iterative improvements rather than specific initiatives:

Participant #5*: "Je le vois plus dans quelque chose continue qu'avoir des rushs."*

Josiane, the UI/UX designer, remains a key contributor, striving to balance user satisfaction efforts with development demands:

Participant #5*: "Elle aimerait plus de temps à travailler sur les sondages et trucs comme ça... après elle poursuit avec le UI et après l'équipe de développement l'implémente."*

While progress has been made, a lack of formal planning and dedicated resources limits the company's ability to systematize and scale UX practices.

4.5.4 Outcomes

First touchpoint:

The outcomes of UX work in Company E reflect a mixed approach to integrating and communicating results, with room for improvement in visibility and systematic application. UX research and design insights are primarily shared among key figures like Alexandra, Josiane, and the PO, but the dissemination often stops there:

Participant #5*: "Ce sont souvent plutôt des analyses... je pense que ça pourrait être mieux communiquer."*

Although Olivier collects and shares user survey responses with leadership and sales teams, the process is more internal than company-wide.

When it comes to using UX research to influence decisions, the company moves quickly, prioritizing speed over comprehensive UX processes:

Participant #5*: "On va très rapide... on le fait tester par les employés et on la retravaille."*

Best practices are drawn from Josiane's expertise and external resources like Nielsen Norman Group, but these are applied in a pragmatic, iterative way, often delivering initial designs to clients before deeper testing:

Participant #5*: "On ne passe pas des mois comme qui font dans UX... on va partir de bonnes pratiques."*

While this agile approach ensures swift iteration, it limits the strategic impact of UX outcomes and highlights a need for more structured communication and integration of UX results across the organization.

Second touchpoint:

Eight months after the initial UX recommendations, Company E demonstrates progress in incorporating UX into its processes, resulting in a more mature application and positive user feedback. They have started dedicating more time to UX during the development stage, as Josiane leads efforts to refine user flows:

Participant #5*:"Je pense qu'on prend un peu plus de temps pour avoir un flow UX en stade développement... ça permet d'aller prendre un peu plus récolte et de réflexion."*

Additionally, they are improving communication with users by providing newsletters and tutorials to explain new features and their functionality.

User feedback has been largely positive, though it is gathered organically rather than through structured efforts. They have seen reactions on Hotjar and received enthusiastic feedback from users through support channels and emails:

Participant #5*: "On a eu deux courriels d'entreprise vraiment satisfaite de nouvelles fonctionnalités... ils nous donnent aussi des idées pour rajouter ça dans le futur."*

Furthermore, the new dashboard and features have been well-received, as evidenced by two new 5-star reviews on Gartner.

While these outcomes reflect progress, the process for systematically measuring and leveraging user feedback could still benefit from more structured approaches to enhance long-term UX maturity.

4.5.5 Management

Company E's management shows a developing commitment to UX, though their approach still reflects an intermediate level of UX maturity. UX is recognized as an important factor for their competitive differentiation, and there are visible efforts to prioritize it, such as through their participation in improvement programs and a more deliberate approach to user flow design. The implementation of key recommendations, like the updated dashboard, demonstrates their willingness to adapt and improve based on UX principles.

However, the management of UX within the company is fragmented. Josiane is central to UX efforts, handling much of the work, but there is no dedicated full-time team or leader solely focused on UX. Anthony, though involved, is reluctant to take on the full responsibility for UX oversight, which limits the clarity and strength of UX leadership. While they have made efforts to align development with best UX practices, the processes are not fully systematic. Feedback is collected organically rather than through a structured strategy, and decisions are still influenced heavily by resource constraints and the need for rapid delivery.

Despite these challenges, the management is beginning to make more time for reflection and refinement during development. The use of tools like Hotjar and integration of user feedback into decision-making processes suggest progress, though these efforts remain sporadic and dependent on

individual initiatives. The lack of a cohesive, long-term UX strategy and limited resource allocation highlight that UX is still not fully embedded within the company's operational framework.

While Company E's management values UX and has taken meaningful steps to integrate it into their processes, the absence of strong leadership, dedicated resources, and systematic planning restricts their overall UX maturity. To advance further, they need to establish more defined roles and responsibilities for UX, invest in an internal team, and implement a structured approach to user feedback and process improvement.

4.5.6 Interface

Based on the interviews, Company E has made notable progress in implementing the UX recommendations, particularly regarding their interface. They've focused on improving the user flow and refining the dashboard, a significant feature in their platform. The dashboard has been live for a few weeks, and it's now gathering user feedback, which is a positive sign of iterative improvement. While the interface has matured, with more time allocated to ensure better user flows, it's clear that the company has not been static. The extra time spent on the dashboard and their increased awareness of UX principles suggest they are actively working to enhance the user experience.

Additionally, they've started collecting feedback through tools like Hotjar and have received positive reactions from users, especially in relation to the new features. Some users have even sent emails expressing satisfaction with the changes, and the company has also received favorable reviews on platforms like Gartner. This feedback, though not systematically gathered through comprehensive surveys or research, has been a helpful source of validation and ideas for future improvements.

However, the interface's evolution is not without its limitations. The company has not yet fully institutionalized a process for gathering extensive user feedback on a continuous basis. Most of the insights have come organically, such as through direct comments or feedback from the support team. There's a recognition of the need to focus more on user feedback, but the approach remains reactive rather than proactive. This could affect their ability to stay ahead of user needs and refine the interface consistently.

In terms of UX maturity, while Company E has made strides in implementing recommendations and gathering user insights, their approach still lacks a more systematic, planned method of integrating feedback into ongoing development. To improve UX maturity, they would benefit from establishing a

more structured process for ongoing user testing and feedback collection, as well as formalizing their UX strategy across all stages of development.

4.5.7 Nielsen Norman Group- UX Maturity Quiz

Company E's Stage 3 UX maturity indicates they are in the "Emerging" phase. While they have made progress in recognizing and integrating UX practices—such as improving their design flows and gathering user feedback—they are still in the early stages of formalizing these efforts. UX is primarily led by a few key individuals, and processes are not yet fully integrated across the organization. While feedback is gathered, it is not always systematically applied, and UX work relies heavily on external contractors. The company is making improvements, but to advance further, they need to create more structured processes, increase cross-departmental collaboration, and invest in internal UX capabilities.

Table 12: Company E- First Versus Second Intervention Analysis

UX Maturity Factor	First Intervention	Second Intervention
Strategy	UX viewed as part of long-term product-market fit but lacked structure.	UX integrated into strategic discussions and roadmap planning.
Culture	Early collaboration between UX and product team.	Continued team-wide engagement. UX included in sprint rituals and retrospectives.
Process	Iterative design with informal user testing.	Introduced structured documentation and shared design reviews.
Outcomes	UX research used occasionally.	Tracked improvements in usability through click path analysis after UI updates.
	Layout changes made from survey insights.	

Table 13- Company E Results Synopsis

Factor	Longitudinal Observation
Strategy	Initially no dedicated UX budget but allocated dev hours; used basic tools (Hotjar, surveys, outdated personas). Agile process with no formal user testing. Later continued allocating dev resources,
Culture	Early uneven UX knowledge, with Josiane as main champion. Valued as a differentiator but limited by small team and unclear decision roles. Later saw modest knowledge gains, kept UX priority high, but still
Process	Initially ad hoc and inconsistent, improving via Tech3Lab participation; Josiane used design tools to bridge gaps. Later implemented successful dashboard, used Hotjar to inform simplification, and took
Outcomes	Initially limited sharing of UX results beyond key individuals; decisions driven by speed and practicality. Later improved flows, launched new dashboard, received positive user and review feedback, but
Management	Values UX as a differentiator, participates in improvement programs, but oversight fragmented; Josiane central to work, Anthony reluctant lead. Later more reflective in development, integrated Hotjar insights,
Interface	Focused on dashboard redesign and improved flows, gathering organic feedback via Hotjar and direct comments. Positive reception but no continuous, structured feedback process; approach remains
UX Maturity	Stage 3 (Emergent): Recognizes and applies some UX practices, progress in design flows and feedback use, but still reliant on individuals/external support and lacks formal, integrated processes.

4.6 Company F

Company F is a Montreal-based technology company founded in 2021 with 7 employees. Operating in the self-storage industry (NAICS 531130), it provides digital tools to connect users with storage facility providers. Like most early-stage companies in the study, Company F lacked a UX/UI role, and UX considerations were secondary to business development priorities such as partner acquisition and platform features.

4.6.1 Strategy

First touchpoint:

Company F appears to be in the early stages of integrating UX into their workflow. Their current strategy does not include a dedicated UX budget, as they mentioned:

Participant #6: "*Ça ne s'applique pas non plus nécessairement*."

Resources for UX are minimal, with the team focusing on self-guided learning, stating:

Participant #6: "*On a suivi un cours et depuis c'est plus intuitif en fait. On suit les 5 principes de NNG (niveau de choix de couleurs, contraste de couleurs, visibilité ou moins visible etc)*."

When it comes to integrating user research and UI into their work processes, the company recognizes the need to balance user experience with logistical factors, explaining that:

Participant #6: "*Ils ne peuvent pas juste prendre en compte une belle expérience utilisateur, il faut qu'on prenne en compte aussi la partie entrepôt*,"

This refers to the complexities involved in offering an experience that connects seamlessly with real-time data, such as pricing and availability. Their UX activities are currently driven by the business's primary goal of fundraising, as they stated:

Participant #6: *"Notre priorité est de lever des fonds, mais pour lever des fonds, il faudrait un maximum de validation. Donc du coup, on va faire passer*"

This means they are focused on validating their ideas and features through user feedback in order to support their fundraising efforts. Therefore, their UX strategy is reactive, with future planning depending on the company's evolving priorities and resources.

Second interview:

Eight months later, Company F's approach to UX strategy has evolved with a few key developments. They now have a dedicated budget for UX work, with the team agreeing when asked about this. The implementation of recommendations from April is overseen by the co-founders, Ange and the user experience lead, who both manage product development. They explained:

Participant #6: "*Ange et moi, on s'occupe du développement produit. A la fin c'est vraiment nous 2 qui disons qui on met ça en ligne sur la plateforme donc c'est assez court fait quand même pas mal par consensus qu'on se complète bien*"

This indicates a collaborative decision-making process. Additionally, they have brought on interns to support their efforts.

In terms of resources, the co-founders are still leading UX efforts, and they express a strong commitment to further development in this area. They highlighted the ongoing relationship with the Tech3Lab, saying:

Participant #6: *"On croit fondamentalement que l'expérience utilisateur est très importante pour la réussite de notre entreprise*"

Additionally, they shared their interest in continuing to work with the lab for future UX activities. Their goal is to maintain this collaboration, potentially establishing a yearly check-up on their UX to refine their design and processes. This reflects a long-term vision to ensure UX remains central to their growth strategy, with hope to see if they could partner with the Tech3Lab again, potentially boosting their UX through continued expert input.

4.6.2 Culture

First touchpoint:

Company F demonstrates a strong understanding and appreciation for UX within its culture, with efforts to ensure that the whole company is aligned on its importance. The co-founders acknowledge that while they may not be experts in UX, they have a solid foundation, stating:

Participant #6: "*On a fait un cours dessus. On a des bonnes connaissances de UX. Encore une fois on ne va pas aller jusqu'à dire qu'on est des experts.*"

This indicates a commitment to learning and growing in UX, despite recognizing that there is always more to learn. They also highlight that user experience is a top priority, saying:

Participant #6: "*Je dirais que ca, c'est notre priorité, notre priorité numéro un*."

This reinforces the central role UX plays in their company's success.

In terms of collaboration, the team maintains open communication, with developers actively keeping the co-founders informed about any concerns related to UX.

Participant #6: "*Dès que notre développeur a un souci, il me tient informé*"

This shows a proactive approach to addressing UX issues. However, while there is no formal UX team, the co-founders, Ange and the other founder, are deeply involved in UX decision-making, with one co-founder explaining that the co-founders are responsible for final decisions and championing UX within the company. This shows strong leadership in pushing UX initiatives forward. The culture appears to be one where UX decisions are shaped collaboratively, and though there isn't a designated UX role, the co-founders play a hands-on role in overseeing and guiding UX activities. However, the company currently lacks a clear path for professional development specifically for UX roles, as indicated by the response:

Participant #6: "*cette question ne s'applique pas vraiment dans ce contexte*."

Despite this, the overall culture emphasizes a foundational understanding of UX and supports its integration into the company's core operations.

Second interview:

Eight months later, Company F's understanding of UX seems to have remained consistent, with the company acknowledging that their interest in UX has deepened. As one co-founder noted:

Participant #6: "*C'est plus effectivement notre intérêt envers le UX c'est encore plus renforcé depuis mais sinon c'est quand même la même chose*."

UX continues to be a priority, with the company focusing on optimizing the user experience for their online mini-storage reservation platform. The response, "*Oui, c'est une grande priorité*" illustrates how integral user satisfaction is in their strategic decisions.

While the company's understanding of UX has not drastically changed, they emphasize that their learning has been more about consolidating existing knowledge. As one co-founder said:

Participant #6: "*Je dirais que ça a été quand même beaucoup de consolidation aussi d'acquis qu'on avait peut-être déjà.*"

This suggests that while foundational UX concepts have been reinforced through training and resources like books and courses, the company has been strengthening and refining what it already knew.

Regarding career development in UX, the company is focused on the potential for growth within product development, particularly by integrating UX principles into the product and web development teams. They see a role for specialized UX developers who understand the product deeply and can contribute to both the design and the development phases. As one co-founder pointed out:

Participant #6: *"un développeur UX, si il a une bonne compréhension vraiment du produit, de ce que le produit doit chercher à résoudre comme problème auprès de l'utilisateur, il serait vraiment en mesure de pouvoir justement aider au développement de l'interface*."

This signals a clear recognition of the importance of UX professionals in shaping the product, though the structure for professional development continues to evolve.

4.6.3 Process

First touchpoint:

Company F's UX process is focused on placing the user at the center of decision-making, which has been a core vision since the company's inception. As one co-founder said:

Participant #6: "*l'utilisateur était placé en plein centre de notre processus décisionnel*"

This demonstrates a consistent commitment to considering user needs in every decision. They have already implemented tools like Google Analytics and Open Replay, as part of their ongoing efforts to improve their UX methods and processes. One co-founder shared:

Participant #6: "*En fait on a déjà installé 2 outils et on a installé Google Analytics et le 2e outil qui s'appelle open replay*."

The goal is to gather more user feedback to improve the platform by December. They aim to use these insights to adjust the user experience based on actual data, rather than assumptions.

The company's approach to user satisfaction is still evolving, with early feedback being mostly positive for the moment, but not yet extensive enough to draw conclusive insights. Regarding UX competencies, the employees most involved in UX have solid technical and hardware skills but lack software-related expertise, as noted:

Participant #6: "*compétences matérielles et techniques mais pas logicielles.*"

While the company is still in the early stages of refining its UX processes, they are actively investing in feedback loops and analysis to continuously enhance the user experience and make data-driven decisions.

Second touchpoint:

Eight months later, Company F has made significant strides in implementing the UX recommendations provided earlier, executing changes within 15-20 days. However, the impact of these changes was somewhat obscured by technical issues with their Google Ads. Despite this, they feel confident in their adherence to best practices, as they followed the majority of the recommendations provided by the consultants and the user testing results. As one co-founder stated, "On avait suivi quand même la majorité des choses, on a été l'une des clients qui a appliqué le plus aux recommandations."

Their integration of user research and UI into the company's processes has become more routine for major changes, though they acknowledged that not every minor update triggers wide announcements within the company, especially since they are still in the early stages of growth. As they explained:

Participant #6: "*Oui, ils sont au courant alors après bon ça va dépendre effectivement de tout, mais des changements majeurs, oui*."

Looking ahead, they have plans to continue their partnership with the Tech3Lab to develop their UX further. They see great value in this ongoing collaboration and expressed interest in establishing a yearly check-up of their UX with the program. This would allow them to receive updated insights on potential improvements, as shared: "On aimerait beaucoup continuer avec le Tech3Lab... Ce qu'on aimerait en fait ce serait potentiellement voir avec le Tech3Lab si on pourrait avoir un partenariat avec eux." This commitment to continually refining their UX strategy highlights the importance the company places on user experience in its business success.

4.6.4 Outcomes

First touchpoint:

For Company F, the impact of UX work is shared across the company in a relatively equitable manner. As they mentioned:

Participant #6: "*Je dirais que c'est partager quand même de manière équitable*"

This means that UX results are distributed fairly among team members. However, the visibility and emphasis on these results can vary depending on the role. For instance, the co-founders, who are more deeply involved in business development, have a stronger sensitivity to the changes made in UX. As they noted:

Participant #6: "*C'est sûr qu'ange et moi, qui suis cofondateur et qui passent beaucoup plus de temps que notre stage en développement d'affaires, on va avoir beaucoup plus de sensibilité à ça.*"

This suggests that the co-founders are more attuned to the finer details of UX improvements, whereas others, like the developer, might be less focused on the UX aspects. When it comes to incorporating UX research into strategic decisions, the company has taken a more hands-on, practical approach. As they explained:

Participant #6: "*Elle a été faite d'une façon à mon avis, qui était moins théorique, moins méthodologique, qui était plus une façon sur le terrain*"

This indicates that the company's approach has been more about learning through experience and drawing inspiration from established, well-performing platforms in the industry, rather than strictly following theoretical methodologies. This shows that while they are committed to improving UX, their approach remains grounded in real-world application and learning from others in the market.

Second touchpoint:

Eight months later, Company F has seen improvements in their interface, notably in reducing the bounce rate. This indicates that the UX improvements made after the April recommendations have had a

measurable impact on user engagement. Regarding user feedback, the company has implemented periodic surveys to gather insights from users who have interacted with the platform, as they mentioned:

Participant #6: "*de temps en temps, on fait des sondages clients auprès de l'utilisateur qui ont fait des demandes sur la plateforme*."

Additionally, they conduct operational calls as part of their process to connect with users, further reinforcing their commitment to gathering feedback and ensuring their UX evolves based on real user experiences. These efforts show a more systematic approach to measuring the outcomes of their UX work and validating changes with users.

4.6.5 Management

Company F's UX maturity seems to be in a developing stage, progressing in key areas like prioritizing UX, planning, and supervision. Initially, the company did not have a dedicated UX budget or team, and the co-founders, Ange and their colleague, played a major role in managing the UX efforts, ensuring that decisions were made based on both business needs and UX considerations. As they grew, the company made strides in integrating UX more systematically by implementing tools like Google Analytics and Open Replay to gather user feedback, demonstrating a commitment to understanding the impact of their UX changes. The management recognizes the importance of UX in their business success and has worked to improve UX by following best practices, implementing user research insights, and continuously refining their platform based on user feedback.

In terms of supervision and organizing, the co-founders take on the bulk of the responsibility for overseeing UX activities. However, they also recognize the value of collaboration with external resources like Tech3Lab, which they are considering for a long-term partnership. This indicates an openness to leveraging outside expertise to further develop their UX practices. There's also a clear focus on the practical application of UX principles, which are rooted in real-world usage rather than theoretical frameworks. The company seems to be moving toward a more mature UX strategy by refining its processes, integrating insights from research, and planning for continued UX development.

Overall, while they have made noticeable improvements in how UX is approached, the company still operates at a relatively early stage in terms of UX maturity. There's significant room for growth in areas such as formalizing UX processes, expanding UX resources, and establishing more structured user research practices. However, the ongoing effort to prioritize UX and integrate it into the development process, as well as the collaboration with external experts, shows promising signs of continued growth.

4.6.6 Interface

Company F has made notable progress in implementing the UX recommendations, especially within a short timeframe. They were able to integrate most of the suggested changes in about 15-20 days after the initial feedback in April. This indicates a willingness to act quickly on feedback, which is positive for UX maturity. They mentioned that the improvements led to better user engagement, such as a reduction in the bounce rate, suggesting that some of the design adjustments were effective in addressing user behavior and enhancing the platform's usability.

Additionally, the company gathers user insights periodically through customer surveys and operational calls, which help them understand how users interact with the platform and identify potential pain points. This feedback loop, although not fully structured or continuous, shows an active effort to understand users' experiences and integrate their feedback into the decision-making process. However, the company also admitted that they don't always track these results or make significant announcements about small updates, likely due to their early-stage development. This inconsistency in sharing and tracking UX insights might limit the impact of the changes in the long term, potentially hindering the systematic use of UX insights for continuous improvement.

While the company is focused on applying UX best practices and has implemented tools like Google Analytics and Open Replay to measure user interactions, they are still in the process of refining their UX methods. The reliance on user feedback and the improvements they have made indicate positive momentum, but there is still room for greater consistency in using this data to continuously inform design decisions. The lack of a dedicated UX team or structured processes means that much of the responsibility for implementing changes falls on the co-founders, limiting the scalability of UX efforts.

In summary, Company F has made tangible improvements to their interface based on user feedback and UX recommendations. While they are seeing positive results, such as better user engagement, they are still in the early stages of consistently tracking and sharing insights from user research. This may impact their UX maturity if they do not further formalize their approach to user research and design integration moving forward**.**

4.6.7 Nielsen Norman Group- UX Maturity Quiz

Given the information about Company F and their results from the Nielsen Norman UX maturity self-assessment quiz, a Stage 3 rating suggests they are in the "Emerging" phase of UX maturity. In this

stage, UX is becoming more recognized and practiced within the organization, but it is still in the process of being formalized and consistently applied across all areas.

At this point, Company F has made substantial progress in understanding and applying UX principles. They have integrated some basic UX practices, such as incorporating tools like Google Analytics and Open Replay for user feedback and tracking, as well as following certain best practices like those outlined by Nielsen Norman Group. The company's quick response to implementing UX recommendations, and their active engagement with UX-related partners like Tech3Lab, indicate an increasing recognition of the importance of UX in their product development. This is a positive sign of maturity, but it is still being driven largely by the co-founders, with no dedicated UX team or clear leadership structure in place.

UX is seen as a priority within the company, with user satisfaction frequently emphasized as the main goal. However, the company is still in the early stages of formalizing and documenting UX processes. They are gathering user feedback through surveys and operational calls, but the methods for systematically analyzing and integrating this feedback into design decisions are not fully developed. UX activities are still very much reactive, with occasional changes based on user insights rather than continuous, structured UX research and development.

The lack of a dedicated UX team and clear roles within the company for UX leadership also reflects a Stage 3 maturity level. While UX is recognized as important, it has not yet become fully ingrained in the company's organizational structure, processes, or long-term strategy. The co-founders are still doing much of the UX work themselves, which can limit the company's ability to scale UX efforts and ensure consistency across different products or projects.

In summary, Stage 3 reflects that Company F is on the right path toward developing a stronger UX culture and integrating UX more deeply into their product development process. However, there are still gaps in formalizing UX practices, dedicating resources, and ensuring the consistent application of UX across the organization, which are typical characteristics of a Stage 3 company in the UX maturity model.

Table 14: Company F- First Versus Second Intervention Analysis

UX Maturity Factor	First Intervention	Second Intervention
Strategy	UX not a strategic priority.	Open to UX value, exploring how KPIs can include user satisfaction indicators.
	Focus was on business development and fundraising.	
Culture	No dedicated UX team.	Some stakeholders interested in UX.
	CEO handled early user discovery.	*Investors now interested in usability.*
Process	Ad hoc feedback loops, changes made intuitively.	Formal interviews began, insight corrected.
		10 user interviews conducted for new features.
Outcomes	No structured tracking of UX impac.	Monitored app drop-off rates post redesign. Still early, but more data-informed decisions.

Table 15- Company F Results Synopsis

Factor	Longitudinal Observation
Strategy	Initially no UX budget, relied on self-learning (NNG principles) and balanced UX with operational logistics; UX aimed at fundraising validation. Later added dedicated budget, co-founders led implementation with
Culture	Early strong appreciation for UX, co-founders as main decision-makers, no formal team or career path. Later interest in UX reinforced, focused on optimizing platform, and recognized value of specialized UX
Process	Initially user-centered from inception, with tools like Google Analytics and Open Replay; early positive feedback but limited software UX skills. Later implemented most recommendations quickly, integrated
Outcomes	Initially results shared fairly but with varying sensitivity; approach was hands-on and inspired by market leaders. Later saw reduced bounce rate, periodic surveys, and operational calls for feedback, showing
Management	Co-founders led UX prioritization and supervision, invested in analytics tools, and open to external expertise; still no formal leadership structure. Later more systematic in applying research insights, but
Interface	Implemented most recommendations in 15–20 days, leading to better engagement and lower bounce rate; periodic feedback collection but tracking inconsistent and mostly for major updates.
UX Maturity	Stage 3 (Emergent): Recognizes and applies UX practices, quick to act on recommendations, and values external partnerships, but still lacks dedicated team, formal processes, and consistent feedback

Chapter 5: Discussion

5.1 Review on Objectives

The findings of this study address the research objectives set out in the literature review by providing a detailed account of UX maturity levels among small businesses in Quebec and their evolution over time. First, the results indicate that the typical level of UX maturity among these companies remains within the “Emergent” stage of the Nielsen Norman Group model, with only one company (Company B) progressing to the “Structured” stage, thereby fulfilling Objective 1. The initial assessment of each company revealed varying starting points within the Emergent stage (Objective 2), and the follow-up conducted nine months later captured the new stage of UX maturity for each (Objective 3). The longitudinal comparison between the two intervention points highlighted incremental progress for most companies, though substantial advancement was limited, thus meeting Objective 4. Through a factor-by-factor analysis, the study identified key elements influencing changes in maturity—such as the presence of a UX champion, dedicated budget, structured processes, and management commitment—while also noting constraints like resource limitations and shifting business priorities, thereby addressing Objective 5. Finally, the findings suggest that higher UX maturity, even when modest, can positively affect operational efficiency, product usability, and customer satisfaction, although the extent of these impacts varies according to the degree of organizational integration of UX practices, thus responding to Objective 6.

5.2 Overview of UX Maturity: Comparative Study Across the Six Companies

5.2.2. Overview of UX Maturity in Start-ups

The analysis of the six companies that participated in the Tech3Lab program reveals key trends in the UX maturity journey of start-ups. Five companies (A, C, D, E, and F) remained at Stage 3 (Emergent) on the Nielsen Norman UX Maturity Model, while only Company B progressed to Stage 4 (Structured). This finding suggests that while UX awareness and practices improved across companies, substantial and sustained growth in UX maturity was limited by various constraints. The UX maturity journey of these start-ups can be systematically examined through the six key factors of UX maturity: Strategy, Culture, Process, Outcomes, Management, and Interface.

5.2.3 Strategy

Across all companies, Tech3Lab’s intervention increased awareness of the strategic importance of UX. However, while Company B successfully integrated UX into its overall business strategy, other

companies (A, C, D, E, F) struggled to prioritize UX within competing business needs. The main limitation was the absence of long-term UX roadmaps, making UX efforts reactive rather than proactive.

For instance, Company B created a long-term UX roadmap that aligned with its product development cycle, ensuring that usability research directly informed new feature development. By contrast, Company D, despite recognizing UX as important, faced challenges in translating this awareness into structured planning due to frequent pivots in business direction. Company F had no dedicated UX strategy, relying on ad-hoc adjustments in response to immediate user feedback rather than long-term vision.

5.2.4 Culture

The role of UX champions within each organization played a significant role in driving UX awareness. Companies with stronger internal UX advocates (B and D) showed greater engagement with UX principles. However, in most cases, UX was still seen as a secondary function rather than a core aspect of product development. The Tech3Lab program helped instill an appreciation for UX, but cultural adoption remained inconsistent.

For example, Company D had a product manager who personally drove UX initiatives, ensuring user research was regularly conducted. However, Company C, while there was initial enthusiasm for UX, the lack of a dedicated advocate meant that enthusiasm diminished once external support from the Tech3Lab ended. Company E exhibited resistance to UX due to a culture that prioritized rapid development and release over user research, seeing UX as a potential bottleneck rather than an enabler of product success.

5.2.5 Process

Tech3Lab introduced structured UX methodologies to all companies, yet their implementation varied. Company B was the only one to establish a well-defined process for UX research, prototyping, and testing. Companies A, C, D, E, and F conducted UX activities but lacked systematic integration into decision-making. This highlights a challenge in moving from ad-hoc UX efforts to sustained UX practices.

Company B set up bi-weekly cycle where user feedback was incorporated into iterative design improvements. Meanwhile, Company A conducted sporadic usability tests but lacked a systematic approach, leading to inconsistent application of insights. Company F relied heavily on heuristic

evaluations but rarely conducted direct user testing, limiting their ability to uncover real usability pain points.

5.2.6 Outcomes

A key challenge for most companies was ensuring that UX research and testing translated into tangible product improvements. While all companies conducted usability testing and gathered user feedback, only Company B had a structured process for integrating findings into iterative design improvements. For other companies, UX outcomes were often deprioritized due to time or resource constraints.

Company B used Tech3Lab's insights to redesign a checkout flow, reducing user drop-off and improved user engagement. In contrast, Company E gathered valuable user feedback but faced internal resistance in implementing changes, as the engineering team prioritized speed over usability. Company D made some interface improvements based on feedback but lacked a consistent follow-up mechanism to ensure impact.

5.2.7 Management

One of the strongest barriers to UX maturity was the lack of dedicated UX resources. Only Company B allocated a formal UX budget, while others relied on part-time UX efforts or external guidance. The Tech3Lab intervention provided valuable expertise, but without sustained investment from within the companies, UX efforts remained fragmented.

Company B benefited from a clear UX budget and leadership support, allowing it to move beyond sporadic UX efforts. This commitment led to structured usability testing and defined UX roadmap, contributing to its advancement to Stage 4. While Company D showed promising steps toward formal UX management by designating a key internal advocate responsible for UX. However, without dedicated funding or personnel, efforts remained limited. Companies A, C, E and F continued to rely on informal UX management structures, where UX responsibilities were often shared across different roles without clear ownership. This led to inconsistent prioritization and execution of UX initiatives. For Company F, UX remained a low priority due to business constraints. Leadership acknowledged its importance but focused on other strategic initiatives like securing funding and product-market fit.

5.2.8 Interface

Despite increased UX awareness, the actual interface improvements across most companies were incremental rather than transformational. This suggests that while start-ups acknowledge the need for UX improvements, they struggle to implement major design changes due to cost, development priorities, or uncertainty about ROI.

Company B was the only company to implement structured design iterations based on usability testing, leading to noticeable improvements in user flows and reduced friction in key product interactions. Company C places significant emphasis on UI aesthetics and usability, ensuring a visually appealing and intuitive design. However, without structured UX research, these improvements were guided more by intuition than systematic data. Company A, D, E and F made only minor interface adjustments but lacked a dedicated approach to continuously optimizing their designs. Company F, still in the early stages of UX adoption, had the least change in its interface. The company acknowledged the need for UX improvements but faced development constraints that prevented significant redesign efforts.

5.2.9 Patterns and Insights

- Incremental Progress: While UX maturity improved across all companies, the changes were primarily at the process and awareness level rather than deep organizational transformation.
- Investment and Structure Matter: The company (B) that reached Stage 4 (Structured) was the one that made a deliberate investment in UX resources, highlighting the importance of financial and strategic commitment.
- Tech3Lab's Influence: The program was effective in introducing UX best practices, but its long-term impact depended on how much each company internalized and operationalized these principles.
- Challenges of Start-up Constraints: Resource limitations, shifting business priorities, and lack of UX-dedicated teams hindered the ability to advance beyond Stage 3 (Emergent) for most companies.

5.2.10 Implications for Practice and Research

The findings of this study carry important implications for both industry practice and academic research. From a practical perspective, the results highlight that early-stage start-ups often recognize the value of UX but struggle to operationalize it due to limited financial and human resources. This suggests that UX integration strategies for small companies must be adapted to their realities, prioritizing lightweight,

scalable methods rather than enterprise-level UX models. For practitioners, this study reinforces the importance of leadership commitment and cross-functional collaboration in advancing UX maturity, even when resources are scarce. External support programs, such as the Tech3Lab intervention, can play a crucial role in accelerating awareness and adoption, but long-term impact depends on embedding UX into strategy and culture rather than relying on isolated workshops or one-time initiatives.

From a research perspective, this study contributes to the growing scholarship on UX maturity in small organizations by demonstrating that existing frameworks like the Nielsen Norman Group model may not fully capture the constraints faced by start-ups. A key implication is the need to develop a UX maturity framework specifically tailored to early-stage companies, one that provides incremental maturity pathways and resource-sensitive guidance. Future research should explore longitudinal approaches to assess how UX maturity evolves over time beyond the duration of structured interventions. Additionally, incorporating mixed methods with measurable UX outcomes, such as usability metrics or user satisfaction indicators, would strengthen empirical validation and help bridge the gap between perceived and actual UX maturity.

Table 16- Comparative Analysis Summarizing Key Elements Across the Six Companies

Category	Company A	Company B	Company C	Company D	Company E	Company F
Strategy	Began integrating UX in pilot stages but now focuses more on functionality than design. Limited UX budget but working to secure one.	UX seen as integral but resources and formal processes are minimal. Iterative improvements noted.	Prioritizes short-term UX adjustments driven by customer feedback and competitiors but lacking the long-term.	Prioritizes user-friendly designs. UX goals are short-term due to resource constraints.	UX is tied closely to product growth but lacks dedicated processes or budgets.	UX integrated during outreach and onboarding but constrained by budget and emphasis on logistical priorities.
Cultre	Strong awareness of UX importance but relies on intuitive, informal practices. User satisfaction scored 8.5-9/10.	Collaborative culture with a good grasp of UX principles. User satisfaction is a major driver.	Increased UX knowledge within the company's employees. Limited employee involvement in UX processes.	Leadership values UX but sees it as a secondary consideration to other business goals.	User satisfaction acknowledged, but UX activities not fully embedded into company-wide practices.	UX is seen as important but secondary to business constraints. Culture prioritizes user needs during early product interaction.
Process	Partially implemented UX recommendations but lacks systematic integration. Decisions are intuitive rather than structured.	Iterative and partially systematic, with efforts made to align research with development goals.	No formal process in place to gatehring, analyzing and integrating users insights.	Minimal adherence to formal UX processes. UX improvements are mostly reactive.	UX methodologies exist but are inconsistently applied, and improvements are resource-dependent.	Relies on feedback during onboarding but lacks dedicated UX processes.
Outcomes	Minimal visible changes following the recommendations; limited insights implementedd from user feedback.	UX results are moderately visible. Research consistently influences decision-making.	Limited research and design work shaping strategic decisions.	User feedback informs decisions, but long-term outcomes of UX work are unclear.	UX results are sporadically visible, with user feedback occasionally influencing prioritization.	UX feedback informs some decisions, but resource constraints limit meaningful change.
Management	Leadership recognizes UX but lacks full-time UX roles or dedicated team. UX is under the Head of Product's supervision.	Management is supportive but relies on informal oversight. UX champions advocate improvements.	No clear leadership or specialized UX roles. Management prioritizes operational and financial growth over UX goals.	Leadership focuses on the broader product, with UX seen as a secondary element.	Limited management involvement in UX beyond approving major initiatives.	Leadership sees UX as important but deprioritized due to immediate business needs.
Interface	Few changes to the interface; users requested smoother navigation but feedback has not been implemented.	Interface reflects iterative improvements, with a focus on usability and user feedback.	Interface continuously improved based on rigorous user testing and research findings.	Interface improvements are incremental and limited to fixing immediate usability issues.	Interfaces are functional but lack refinement due to inconsistent UX integration	Interfaces are data-driven, emphasizing logistical needs but with limited user-friendly enhancements.

Table 16 Summary:

- Company B appears the most advanced in terms of UX maturity, with a structured and proactive approach across all categories
- Company A, C, and E are in a transitional phase, making progress but constrained by budget and resources.
- Companies D and F show limited UX focus, prioritizing other business goals over consistent UX improvement.

Chapter 6: Limitations and Future Research

A list of 11 key limitations facing this study are presented below.

1. Subjectivity of self-reported data

The heavy reliance on self-reported data from company representatives may have introduced bias, as participants could unintentionally overstate their UX maturity or emphasize successes over weaknesses. Future studies could incorporate third-party assessments, observational research, or triangulation with quantitative performance data to increase objectivity and minimize potential bias.

2. Small sample size

With only six companies included, the results cannot be generalized across all small businesses in Quebec or beyond. Expanding the sample size and including a wider range of industries, geographies, and organizational sizes would provide a more representative picture of UX maturity.

3. Variability in interview responses

Differences in how respondents interpreted and answered questions introduced inconsistencies. Some answers lacked depth, making certain aspects of UX maturity difficult to evaluate. Future research could use more structured interviews, standardized questionnaires, or follow-up probing to ensure consistency and richer data collection.

4. Time constraints and changes over time

The study's eight-month timeframe allowed for only two touchpoints, which may not have been long enough to observe significant changes in UX maturity. Longer longitudinal studies, with multiple intervals over several years, could capture more gradual progress and reveal patterns in organizational change.

5. Limited focus on external factors

This research emphasized internal drivers of UX maturity, such as processes and strategy, but did not fully explore the influence of external factors like market conditions, industry competition, or shifting customer demographics. Future studies could adopt a more holistic approach by integrating these external variables into the analysis.

6. Potential for researcher bias

Interpretation of responses and the assignment of UX maturity levels involve a degree of subjectivity. Using multiple coders, inter-rater reliability checks, or automated text analysis tools could help mitigate bias and improve reliability in future work.

7. Lack of uniform implementation of recommendations

Companies applied recommendations unevenly, prioritizing some areas over others, which complicated direct comparison of impacts. Future research could track the adoption of specific recommendations over time and assess their influence using a consistent measurement framework.

8. Limited exploration of financial constraints

Although financial limitations emerged as a recurrent theme, the study did not analyze in depth how budget decisions shape UX practices. Further research could examine funding models, ROI of UX investment, and cost-benefit analyses to provide more concrete guidance to small businesses.

9. Missing long-term evaluation

Without examining the sustainability of UX initiatives beyond the study period, it is unclear whether observed changes will endure. A multi-year study could assess whether improvements are maintained, adapted, or abandoned over time.

10. Methodology

The use of the Nielsen Norman Group UX maturity framework provided a respected foundation but may not capture the full diversity of UX practices. Combining multiple frameworks or adapting them for small business contexts could yield a more nuanced and context-sensitive evaluation model.

Future Research

This study provides insights into the UX maturity trajectories of start-ups participating in the Tech3Lab intervention, yet it also opens several avenues for future research. The findings suggest that while structured UX methodologies and external interventions like Tech3Lab can introduce and reinforce UX practices, long-term maturity is still constrained by internal factors such as budget, leadership, culture, and operational priorities.

One clear direction for future research is the development of a UX maturity framework tailored specifically to the realities of small and early-stage companies. The Nielsen Norman UX Maturity Model offers a robust foundation, but its broad design does not always account for the unique limitations faced by start-ups- such as limited funding, lean staffing, or short-term product development cycles. A future framework could include tiered and actionable UX pathways that adapt to a company's stage of growth guiding them through progressive steps that are both realistic and high-impact given their resource constraints.

Additionally, future research could explore the longitudinal effects of UX interventions. While this study captured a snapshot of change over eight months, understanding whether companies maintain, regress, or advance in UX maturity over time would offer richer insights into what sustained UX growth looks like. This could involve follow-up studies with the same cohort of companies, tracking their UX evolution post-Tech3Lab.

Another opportunity lies in quantifying the business impact of UX maturity in start-ups- such as customer retention, conversion rates, or speed to product-market fit. Although qualitative indicators of progress were identified in this research, future studies could employ mixed-methods approaches or A/B testing to isolate the impact of UX maturity on concrete business metrics.

Finally, further investigation into cross-industry comparisons could help determine whether certain sectors are more naturally inclined or equipped to adopt UX principles due to user expectations, regulatory pressures, or competitive dynamics. Understanding these nuances would allow for more personalized UX maturity support for companies across different domains.

In sum, future research should aim not only to track and assess UX maturity, but to empower small companies with context-sensitive tools and frameworks that make the path to UX maturity more accessible, sustainable, and aligned with their operational realities.

Chapter 7: Conclusion

This study provides a detailed assessment of the UX maturity of six companies, analyzing their strategy, culture, process, outcomes, management, and interface. Using the Nielsen Norman Group's UX maturity factors and self-assessed quiz as a framework, we aimed to understand their approaches to UX integration, challenges, and opportunities for growth.

The findings reveal varying levels of UX maturity across the six companies, with most falling within the "emergent" stage of UX maturity. While all companies recognize the importance of UX, there are significant gaps in resource allocation, formalization of processes, and prioritization of user experience in their strategies. Challenges such as limited budget, intuitive rather than systematic approaches, and inconsistent implementation of recommendations highlight barriers to advancing UX maturity.

Company A's journey over eight months demonstrates the complexities of integration UX in a startup context. Despite some growth in understanding and application, resource constraints and competing priorities have hindered significant progress. Similarly, other companies exhibit ad hoc or reactive approaches to UX, emphasizing functionality or immediate client demands over long-term UX strategy.

Company B has made moderate strides in UX maturity, with UX being integrated into some decision-making processes. However, limited resources and a lack of a formalized UX team hinder more significant progress. The company's efforts remain focused on functionality and meeting immediate product demands, rather than investing in systematic UX improvements.

Company C demonstrates a stronger commitment to user satisfaction, with high collaboration between teams and an emphasis on creating user-friendly interfaces. However, the company still lacks a dedicated UX team and structured processes, which limits its ability to advance beyond its current level of maturity.

Company D has shown promising growth in recognizing UX as a critical component of product development. The company actively incorporates user feedback into its processes and has begun formalizing some UX practices. Yet, challenges such as limited budgets and inconsistent prioritization of UX activities continue to slow its progress.

Company E stands out for its focus on integrating UX into strategic decision-making. The company has invested in professional development for UX employees and fosters collaboration between teams. While it is ahead of the others in terms of UX maturity, further investment in resources and structured processes is needed to reach higher levels.

Company F, in the early stages of UX integration, faces significant challenges due to minimal UX resources and a lack of dedicated budget. The company's focus on business development and securing funding often takes precedence over UX improvements. However, there is potential for growth if funding can support implementation of structured UX practices.

The findings of this study highlight the complex and nonlinear nature of UX maturity in start-ups. While all six companies demonstrated increased UX awareness and engagement following the Tech3Lab intervention, most remained at Stage 3 (Emergent) on the Nielsen Norman UX Maturity Model, with only one company (Company B) reaching Stage 4 (Structured). The primary barriers to UX maturity were resource constraints, shifting business priorities, and the absence of dedicated UX teams. The Tech3Lab program played a pivotal role in raising awareness and introducing structured UX methodologies. However, the extent to which start-ups could translate these learnings into sustained UX practices varied.

Key takeaways from this study include:

- **General UX Maturity Trends**: The majority of companies remained at **Stage 3 (Emergent)**, with only one reaching **Stage 4 (Structured)**, emphasizing the difficulty of achieving sustained UX growth in start-ups.
- **Tech3Lab's Role**: The program positively influenced UX awareness and provided structured processes, but resource limitations and competing business objectives prevented some companies from fully institutionalizing UX.
- **Investment as a Key Driver**: The company that progressed further in UX maturity was the one that allocated a dedicated UX budget and leadership support.
- **The Need for Long-term Commitment**: While start-ups recognize the value of UX, advancing to higher levels of UX maturity requires not just external interventions but internal commitment to structured UX investment and execution.

These findings contribute to the broader understanding of how UX maturity develops in start-ups and highlight the need for continued research into the long-term sustainability of UX practices beyond initial interventions like the Tech3Lab program.

Across all companies, a common theme emerges: while user experience is acknowledged as important, UX maturity often takes a backseat to immediate operational or financial priorities. The reliance of the Nielsen Norman framework, while beneficial for categorizing UX maturity stages, presents limitations. The self-assessment nature of the quiz may introduce bias, as companies might overestimate or underestimate their maturity. Additionally, the framework may not fully capture nuances specific to each organization, such as industry-specific challenges or cultural influences, which over maturity models might address.

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Appendix

Appendix 1: List of First Touchpoint Interview Questions

Q1. Dans quelle mesure est-ce que vous (et votre équipe de direction) comprenez le domaine de l'expérience utilisateur?

Q2. Dans quelle mesure diriez-vous que la compréhension et la satisfaction des besoins de l'utilisateur est une priorité pour votre équipe de direction?

Q3. Comment les résultats des activités UX, comme la recherche utilisateur et le design d'interfaces utilisables, sont partagés au sein de l'organisation ? Dans quelle mesure ces résultats sont-ils visibles dans l'ensemble de l'organisation ?

Q4. Quel est le degré de contribution des collaborateurs ou des employés qui ne sont pas des experts en UX dans les activités UX clés (comme la recherche utilisateur, le design et l'évaluation des interfaces) ?

Q5. À quelle fréquence les bonnes pratiques UX et les résultats de recherche UX sont-ils utilisés pour éclairer les décisions et les priorités stratégiques d'ensemble ?

Q6. Qui est responsable des décisions finales liées à l'expérience utilisateur ? (Par exemple, des modifications de l'interface, des nouvelles fonctionnalités, des nouvelles études de recherche)

Q7. Existe-t-il un " champion de l'UX " qui défend efficacement l'expérience utilisateur ? A-t-il une influence sur les dirigeants de l'organisation ?

Q8. Dans quelle mesure les produits et interfaces numériques de l'organisation respectent-ils les meilleures pratiques associés à la conception centrée utilisateur et au design d'interfaces utilisables?

Q9. Dans quelle mesure un effort est-il fait pour améliorer de manière itérative les méthodes ou les processus UX de l'organisation ?

Q10. Quel est le degré de satisfaction des utilisateurs et des clients de l'organisation ?

Q11. Qui s'occupe de l'expérience utilisateur dans votre organisation ? Comment sont-ils recrutés?

Q12. Quelle est la composition des équipes UX ? Comment les employés spécialistes en UX sont-ils affectés aux équipes de produits ? Les rôles sont-ils bien définis ?

Q13. Comment le travail en expérience utilisateur est-il supervisé ? Quelle est la structure hiérarchique ? L'équipe UX travaille-t-elle bien ensemble ?

Q14. Quelles compétences en matière d'UX les employés spécialistes en UX possèdent-ils ?

Q15. Quelles sont les possibilités de développement professionnel ou d'évolution de carrière pour les employés spécialistes en UX ?

Q16. Quel est le modèle de financement des activités liées à la recherche utilisateur et au design d'interfaces utilisables ? Est-ce que ce modèle est stable ?
Q17. Quelles ressources physiques sont consacrées aux activités liées à la recherche utilisateur et au design d'interfaces utilisables ? (Par exemple, espace, logiciels, matériel)

Q18. Quelles autres ressources sont utilisées pour soutenir ces activités (liées à la recherche utilisateur et au design d'interfaces) ? (Par exemple, des objectifs UX, des guides de style, des personas, des mesures, etc.)

Q19. Dans quelle mesure les processus de travail soutenant la recherche utilisateur et la conception d'interfaces sont-ils intégrés aux autres processus organisationnels ? (Par exemple, le développement de logiciels)

Q20. Comment les activités liées à la recherche utilisateur et au design d'interfaces sont-elles prévues, planifiées et organisées au sein de l'organisation ?

Q21. Quels types de ces activités UX sont utilisés ? Quand sont-elles utilisées (à quel moment, dans quel contexte?) ? À quelle fréquence ?

Appendix 2: List of Second Touchpoint Interview Questions

Q1. Est-ce qu'il y a eu des changements majeurs qui sont survenus dans l'entreprise depuis les entrevues de l'automne 2022?

Q2. Dans quelle mesure est-ce que vous (et votre équipe de direction) comprenez le domaine de l'expérience utilisateur?

Q3. Dans quelle mesure diriez-vous que la compréhension et la satisfaction des besoins de l'utilisateur est une priorité pour votre équipe de direction?

Q4. Dans quelle mesure les recommandations que nous vous avons formulées en avril sont-elles visibles dans l'ensemble de l'organisation?

Q5. Dans quelle mesure les produits et interfaces de l'organisation respectent-ils les meilleures pratiques associés à la conception centrée utilisateur et au design d'interfaces utilisables?

Q6. Dans quelle mesure l'effort d'intégration des recommandations UX données en avril a-t-il été fait pour améliorer votre site web?

Q7. Votre entreprise a-t-elle recueilli les réactions/feedback des utilisateurs après avoir mis en œuvre les recommandations UX?

Q8. Qui supervise la mise en œuvre des recommandations UX qui vous ont été communiquées en avril? Qui prend la décision finale?

Q9. Quelles sont les compétences UX que vous et vos employés avec acquises depuis les tests et les recommandations avec le Tech3Lab?

Q10. Quelles sont les possibilités de développement professionnel ou d'évolution de carrière pour les employés spécialistes en UX?

Q11. Avez-vous disposé des fonds nécessaires pour mettre en œuvre les recommandations du mois d'avril?

Q12. Quelles sont les ressources utilisées pour mettre en œuvre nos recommandations en matière d'UX? Votre entreprise dispose-t-elle de ressources utilisées pour soutenir les futures activités UX?

Q13. Dans quelle mesure les processus de travail soutenant la recherche utilisateur et la conception d'interfaces sont-ils intégrés aux autres processus organisationnels? (Par exemple : le développement de logiciels, collaboration/communication avec autre départements et membres de l'équipe)

Q14. Avez-vous envisagé de pratiquer davantage des activités liées à la recherche utilisateur et au design UX? (Prévues, planifiées ou organiser pour le faire dans un futur proche)

Appendix 3: Optimal Workshop List of Tags

Tag 1: Réponse Fermer

À-améliorer, amélioration, bonne, effort, fréquemment, important, mauvaise, méthodes_précis, moyen, non, oui, partiellement, pas_encore, pas_de_méthodes, pas_de_spécialiste, pas_fréquamment, pas_important, pas_satissfait, pas_souvent, rien, satisfait, seulement_entrepreneur, souvent, toujours, toute_la_compagnie_au_courant

Tag 2: Changement Majeurs

Acquisition, croissance, départ, développment_interface, majeur, nouveau_produit, plus_d'employés, restructuration_personnel, réorganisation

Tag 3: Compréhension UX

Conception_centrée_utilisateur, connaissance_UX, cours_UX, débutant_UX, formations_UX, utilisage_outils_UX

Tag 4: Priorité Utilisateurs

Adaptation_produits, commentaires_utilisateurs, pas_prioritaire, priorité, études_marché

Tag 5: Visbilité Recommendations

Communication_recommendations, implémentation, pas_de_guideliens_suivi, suivre_guidelines

Tag 6: Conception centrée utilisateurs et design d'interface

Interaction_utilisateurs, interface_intuitif, itérations_design

Tag 7: Feedback Recommendations

Client, gestion, sondage, suivi_clients

Tag 8: Compétences UX

Connaissance_général, formation_continu, éléments_spécifiques

Tag 9: Ressource pour la mise en oeuvre des recommandations

Agence_externe, budget, certaines_personnes, employés_interne, entrevue_client, pas_de_budget, personnel_dédier

Tag 10: Activités futur

Collaboraion_départments, court_terme, long_terme, planifiés, pour_le_futur, prévus

Tag 11: Ressources

Adobe, AsterX_programme, audits, bourses, brainstorming, canva, certification_UX, certification_design_graphique, coding, commentaires, connections/contacts, customer_journey, design_UI, entrevue_utilisateur, essai_erreur, étude, figma, flowchart_maker, formations, formulaires, forum_virtuel, google_analytics, guerilla_marketing, heatmaps, hotjar, KPI, livres, maquette, miro, NN/g, note_de_satisfaction, objectifs, ordinateurs, persona, prise_de_carte, prototyping, QA_tests, questionnaire, R&D, rencontre, review_en_ligne, sondages, storyblock, teams, tests_utilisateurs, user_flow, wireframes, inVision

Appendix 4: Summary of Interview Responses

1. **Strategy**

Company	UX Budget	Resources Used	Integration of UX
A	No dedicated budget	Personas, user stories, wireframes, design briefs	Well integrated but evolving
B	Limited budget	Internal testing, Prototyping	Ad-hoc, becoming more structured
C	No UX budget	Market research, customer interviews	Some integration; more needed
D	Moderate investment	Iterative design, external consultants	Regularly integrated
E	Budget depends on project	In-house team, focus on product-market fit	Strategic but resource-limited
F	No budget: focuses on UX principles	Real-time logistics and data-driven design	Limited but user-oriented

2. **Culture**

Company	UX Awareness	Prioritization of UX	Collaboration Across Teams
A	Medium-high	User satisfaction a top priority	Good collaboration, but not formalized
B	Medium-high	Features prioritized over UX	Some collaboration between teams
C	Low-medium	Functionality over aesthetics	Sporadic collaboration
D	High	Empathy-driven work	Highly collaborative
E	Medium	Business goals influence UX	Close collaboration with stakeholders
F	Low-medium	Business-driven decisions	UX limited to key decision-makers

3. **Process**

Company	UX Best Practices	User Feedback Utilization	Future Plans for UX
A	Partially followed	Mixed; navigation feedback noted	Expand user research and resources
B	Ad-hoc adoption	Used for prioritization	Aim to formalize processes
C	Intuitive approaches	Rarely acted on	Unclear plans for structured UX
D	Iterative approach	Actively used	Hiring dedicated UX designers
E	Frequent testing	Incorporated in key decisions	Planning long-term research goals
F	Limited testing	Balances with logistical needs	Validate through business goals

4. Outcomes

Company	Impact of UX Work	Metrics Visibility	User Feedback Integration
A	Minor improvements noted	Moderately visible	Navigation improvement requested
B	UX guides strategy	Visible	Regular feedback incorporated
C	Limited impact	Not well-documented	Feedback inconsistently used
D	Noticeable improvements	Highly visible	Major driver for development
E	Enhances product-market fit	Shared with leadership	Core to iterative development
F	Limited due to funding gaps	Minimal visibility	Incorporated based on feasibility

Appendix 5: Nielsen Norman Group UX Maturity Quiz

Q1. Quelle compagnie représentez-vous aujourd'hui?

Q2. Votre organisation a-t-elle l'un des types d'objectifs UX suivants ? Les objectifs UX sont des objectifs de haut niveau liés à l'amélioration des expériences.

Q3. Quand les activités UX sont-elles incluses dans la programmation ? Les activités UX peuvent inclure, par exemple, la recherche sur les utilisateurs, les ateliers de conception, l'idéation ou les tests de prototypes.

Q4. Quelles sont les ressources humaines dont dispose votre organisation pour le travail de l'UX ?

Q5. Quelles sont les ressources financières dont dispose votre organisation pour le travail UX?

Q6. Dans votre organisation, quelle est l'opinion des gens sur l'UX ?

Q7. Comment votre direction soutient-elle l'UX?

Q8. Comment l'entreprise encourage-t-elle les personnes occupant des fonctions UX à faire évoluer leur carrière ?

Q9. Comment votre organisation prévoit-elle de poursuivre et d'améliorer le travail UX à l'avenir ?

Q10. Comment et quand les méthodes de recherche et de conception UX sont-elles utilisées dans votre organisation ? Ces méthodes peuvent inclure des tests utilisateurs, des entretiens, des ateliers de conception, des tests de prototypes, etc.

Q11.Comment les rôles non UX (les personnes qui ne travaillent pas dans l'UX) perçoivent-ils l'UX ?
Q12. Comment le travail UX est-il maintenu cohérent entre les équipes et les projets ? En d'autres termes, le processus UX est-il cohérent dans l'ensemble de l'organisation ?

Q13. Quel est l'impact du travail UX sur la qualité de la conception finale ?

Q14.Comment les indicateurs quantitatifs sont-ils utilisés pour mesurer la qualité des conceptions produites ? Les mesures UX les plus courantes comprennent les taux de satisfaction des utilisateurs, les taux d'achèvement des tâches, les visiteurs qui reviennent, les renouvellements d'abonnement, le temps consacré à la tâche, les conversions, etc.

Appendix 6: Self-Assessed UX Maturity Scores

Company	Score (Out of 6)	Description
A	3- Emergent	Some activities planned; lacks structure and resources
B	4- Emergent	Processes and resources are formalized; prioritizes UX consistently
C	3- Emergent	Minimal structure: UX efforts are reactive and inconsistent
D	3- Structured	User-centered activities exist but limited by business constraints
E	3- Emergent	Incorporates user-centered ideas but unstable
F	3- Emergent	User-centered ideas limited by logistical and financial constraints