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UX's Role in Helping Startups Successfully Grow Their AI Products

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CERTIFICAT D'APPROBATION ÉTHIQUE

La présente atteste que le projet de recherche décrit ci-dessous a fait l'objet d'une évaluation en matière d'éthique de la recherche avec des êtres humains et qu'il satisfait aux exigences de notre politique en cette matière.

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Résumé

L'IA est de plus en plus répandue et les entreprises qui démarrent contribuent au développement de produits d'IA. Cependant, il est difficile pour les entreprises qui démarrent de savoir comment développer leurs produits d'IA, car il existe peu de directives pour ce type d'entreprise émergent. Il existe peu d'informations sur la façon de développer les produits d'IA correctement, et on ne peut pas s'appuyer sur des recherches connexes existantes telles que l'intersection de l'IA et de l'UX. À cause de cette lacune de recherche, ce projet étudie quel rôle UX joue avec les entreprises qui démarrent pour développer leurs produits d'IA avec succès.

Une étude de cas exploratoire a été menée sur une entreprise qui démarre de robot de chabot IA. Au total, neuf participants, dont trois professionnels de l'expérience utilisateur, trois chefs de produit et trois fondateurs, ont été interrogés pour leurs expertises du secteur, leurs connaissances de l'entreprise et leurs connaissances du produit. Les données ont ensuite été analysées à l'aide d'une approche inductive pour les données qualitatives afin de comprendre comment UX a aidé une entreprise qui démarre à développer avec succès son produit d'IA.

Un modèle a été élaboré à partir des entrevues avec les participants. Les entretiens ont ressorti cinq thèmes, tels que les caractéristiques et la culture de l'entreprise qui démarre, les défis de l'UX dans l'entreprise de l'IA, l'approche UX pour développer le produit, les actions stratégiques d'accompagnement et les résultats de ces actions qui mène le produit au succès.

Mots clés: IA, entreprise qui démarre, produit IA, UX, exploratoire, étude de cas, robot de chabot IA, approche inductive, données qualitatives

Méthodes de recherche: Une approche inductive était utilisée pour analyser les données qualitatives d'une étude de cas.

Abstract

AI is becoming more prevalent, and startups have contributed to the development of AI products. However, it is challenging for startups to know how to grow their AI products as there are few guidelines for this emerging type of business. There is little existing information on how to properly grow AI products, and they cannot draw from existing related research such as the intersection of AI and UX. Because of this gap, this research project studied UX's role in helping startups successfully grow their AI products.

An exploratory case study was conducted on an AI chatbot startup. A total of nine participants comprising of three UX professionals, three product managers, and three founders were interviewed for their industry expertise, knowledge of the company, and knowledge of the product. The data was then analysed using an inductive approach for qualitative data in order to understand how UX helped one startup successfully grow their AI product.

A framework was formed from the interviews with participants. There were five main themes that arose through the interviews such as the startup characteristics and culture, challenges with UX in the AI startup, the UX approach to grow the product, accompanying strategic actions taken, and the subsequent results from those actions that lead the AI product to be successful.

Keywords: AI, startup, AI product, UX, exploratory, case study, AI chatbot, inductive approach, qualitative data

Research methods: An inductive approach was used to analyze the qualitative data from one case study.

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List of abbreviations and acronyms

AI: Artificial Intelligence

UX: User Experience

PLM: Product Lifecycle Management

MVUX: Minimum Viable User Experience

PSI: Parasocial Interaction

CRM: Customer Relationship Management

Covid-19: Coronavirus Disease 2019

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Chapter 1: Introduction

AI is becoming increasingly prevalent in business and in daily life, and companies are investing their resources into building more innovative AI products. Therefore, this thesis aims to investigate the phenomenon of AI products. It is important to note that AI “is a machine’s ability to perform the cognitive functions we usually associate with human minds” (“What is AI?,” 2023). In addition, an AI product can be defined as a product that has “AI as the central technology in an application or service” (Casey, 2022). To determine whether AI is the central technology in a product, it must be able to perform like a human while also being customizable to support one’s specific requirements (Casey, 2022).

The study of AI products matters because of the increasing impact and growth of the AI industry. The increasing impact can be seen through the revenue the AI industry generates. For example, in 2022, it was estimated the AI market would reach \$86.9 billion in revenue (Haan, 2023). In comparison, by 2027, the AI market size is projected to reach a revenue of \$407 billion (Haan, 2023). The increase in projected revenue emphasizes the increasing impact of AI in the future because it demonstrates that the AI industry is expected to grow in years to come. In fact, the AI industry is expected to grow from 2023 to 2030 at a rate of 37.3% annually (Haan, 2023). In recent years, the number of organizations adopting AI have more than doubled (Chui et al., 2022). Organizational adoption of AI was 2.5 times higher globally in 2022 compared to 2017 (Chui et al., 2022), which demonstrates the increasing business value of AI.

There are three ways AI is important to the business world. The first way AI offers value to companies is because it supports business needs. AI's value supports three business needs, namely process automation, cognitive insight, and cognitive engagement (Davenport & Ronanki, 2018). Process automation refers to when business processes operate automatically (Collins et al., 2021). Cognitive insight is the ability to gain insight from data analysis (Collins et al., 2021). Cognitive engagement refers to engaging with both employees and customers (Collins et al., 2021). AI can be used to support any of these needs to help companies be successful. The second way AI is important is that monetary investment in AI can help businesses save money. It is predicted that in the future, 75% of businesses relying only on machine learning for AI initiatives will spend more money than those that deploy a variation of AI techniques for products that can potentially be used (Chandrasekaran et al., 2022). This means that companies who utilize different AI techniques can spend less money than their competitors who do not, allowing them to allocate the capital to other areas that can be more beneficial to their businesses. The third way is that AI as an industry has grown exponentially over the last 10 years (Chandrasekaran et al., 2022), and future trends show that it will only become more prevalent in the business world as time goes on. The emergence of intelligent systems such as AI means that traditional mechanisms are evolving from human to machine collaboration (Lu, 2019). Knowledge about AI is also becoming a valuable asset in the workplace, with a prediction that by 2025 80% of people hired for AI development will need to demonstrate expertise in responsible AI development (Chandrasekaran et al., 2022).

In recent years, startups have greatly contributed to the development of innovative AI products. This is shown through the acquisition of AI startups by larger companies (“The Race for AI: Here Are The Tech Giants Rushing To Snap Up Artificial Intelligence Startups,” 2019). In the last decade, large technology companies like Facebook, Amazon, Microsoft, Google, and Apple have been acquiring AI startups (“The Race For AI,” 2019). These technology companies are powerful corporations who want to maintain competitive advantages in the AI industry (“The Race For AI,” 2019). One way they can hold a competitive advantage is by acquiring smaller organizations like AI startups because these large technology companies use their acquisitions of startups to scale their AI initiatives (“The Race For AI,” 2019). More specifically, they use the acquisition of the startups to boost their internal AI research and development (“The Race For AI,” 2019). For example, Apple was able to acquire the facial recognition startup RealFace and the voice assistant organization Novauris Technologies (“The Race For AI,” 2019).

1.1 Problem

One challenge facing AI startups is how to grow their AI products. AI startups are dependent on the success of their AI product. However, startups typically have fewer resources, small teams, and higher expectations to beat their competitors (Aggarwal, 2021). As a result, a large number of AI startups fail. In fact, 85% of AI startups will be closed within three years (Olinga, 2023). It is difficult for AI startups to grow because they are either swallowed by larger companies or they run out of capital (Olinga, 2023). While AI is the future, it favours larger organizations that have the resources, expertise,

and time to deploy their latest AI models and to conduct research (Aggarwal, 2021). Therefore, it is a challenge for AI startups to know how to grow their AI products.

One approach that may help AI startups grow is focusing on user experience or *UX*. It is important to AI startups because these organizations try to grow by getting more customers and users. They do this by convincing large numbers of users to buy and use their products. One way that startups can convince users to utilize their products is by implementing *UX* practices. *UX* “is the totality of the effects felt by the user before, during, and after interaction with a product or system in an ecology” (Hartson & Pyla, 2018). An ecology refers to the complete usage context in which a user comes in contact with during their interaction with a product (Hartson & Pyla, 2018). The implementation of *UX* practices in businesses helps organizations achieve their goals by putting their users at the centre of the process for building products (Klein, 2013). In fact, businesses experience greater success in high-tech applications when they maintain a user-centered approach while building a product (Kayacik et al., 2019). This is due to the fact that when users are at the forefront of decisions, businesses obtain information on their end-users, which shapes the project’s goals, data and models, and the user interface of the product (Kayacik et al., 2019). This means that businesses are more likely to include features that align with users needs, which can compel users to adopt their products.

We cannot use exiting research to solve the issue of growing AI products. The first reason is there is little existing information on how to properly grow AI products. One way practitioners can grow an AI product is through proper management of the product. We cannot use existing information to solve this topic because practitioners who seek better ways of managing their AI projects can only draw on a small number of studies

(Vial et al., 2023). For example, research shows there is tension among experts and developers when they interact during the AI development process, and there are data accessibility issues during AI studies (van den Broek et al., 2021; Vial et al., 2021). The tension during the development process demonstrates that practitioners are frustrated, indicating they do not know how to properly grow their AI products. In addition, the lack of accessibility to data on AI studies demonstrates the little existing research on the topic. As a result, organizations face challenges when scaling AI projects because they lack the skills, collaboration, tools, and knowledge to create and manage these AI products (Goasduff, 2020). The second reason is that we cannot draw from existing related research. This includes the little existing research on the intersection of AI and UX. AI is seen as a new concept for the UX world and in academia because they have yet to address the issue of AI thoroughly (Holmquist, 2017; Pair, 2018; Spallazzo & Sciannamè, 2022). In addition, research in the AI industry has mainly focused on technological innovation, while the human and psychosocial concepts are rarely examined (Passalacqua et al., 2022) like the concept of UX. Therefore, the little research on how to properly grow AI products, and the little related research indicate that the growth of AI products should be studied further.

1.2 Research Question

In response to this noted gap, the aim of this study is to examine how startups can grow their AI products through UX. Therefore, the thesis will seek to answer the following research question:

What is UX's role in helping startups successfully grow their AI products?

To address the research question, we used an exploratory case study. We interviewed employees at a successful AI chatbot startup. UX professionals, product managers, and founders were interviewed for their industry expertise, knowledge of the company, and knowledge of the product. The data was then analysed using a qualitative approach in order to understand how UX helped one startup successfully grow their AI product.

1.3 Research Contributions

This study provides one contribution for research and one contribution for practice. The first contribution is that it extends existing research on startups, and the intersection of AI and UX by analyzing the growth of an AI product in a successful startup. This research contributes to the sparse research on the growth of AI products by analysing the management of AI products, and demonstrating the importance of UX for the management of these AI products. The second contribution is that the study offers insight for practitioners. The exploratory nature of the study offers a deeper understanding of the management of AI products for managers by highlighting the management practices of one AI organization. In addition, the study offers insight to the UX practices while building an AI product, and how it is critical to the way the product is managed.

1.4 Synthesis of the Introduction

In the next sections, this thesis will dive into the literature review, methodology, results, and discussion. The literature review will present existing research found in subtopics relevant to our research question. The methodology will focus on the processes used for data collection and qualitative analysis of participant interviews. The results section will present the themes that emerged from our analysis of the interviews. Lastly, the discussion will include contributions, practical implications, future research, and limitations.

Chapter 2: Literature review

The literature review sought out recent research from 2013 and onward to provide the most up to date existing information on AI, product development, product management, and UX. However, pertinent older articles were sometimes found during this process and included throughout this section as applicable. The databases Gartner, Web of Science, and Google Scholar were used to find peer-reviewed scientific research. The Gartner database was used for market reports while Web of Science and Google Scholar were mainly used for scholarly articles, research papers, books, etc. To examine our research question, we chose to utilize peer-reviewed sources as a way of establishing integrity in the information found. This allowed us to collect trustworthy information on adjacent topics that would help us gain context for our research question. Thus, a variety of different searches were conducted (See Table 1).

Table 1: Searches Conducted

(product) AND (project) AND (lifecycle) AND (management) AND (promote* OR importance*)	Search to determine the difference between products and projects, the product lifecycle management and the project lifecycle management, and to show the importance of management throughout these processes.
(product) AND (project) AND (lifecycle) AND (management) AND (AI OR "Artificial Intelligence")	Search to determine the difference between products and projects, the product lifecycle management and the project lifecycle management, and to discuss the relationship with AI.

(startup) AND (lifecycle) AND (model OR stages OR phases OR framework) AND (grow OR growth)	Search to discuss the startup lifecycle and what contributes to a startup's growth throughout each phase.
(lean) AND (startup) AND (UX OR "user experience") AND (model OR approach OR method* OR framework)	Search to discuss the lean startup and how the lean UX concept can help lean startup be successful.
(UX OR "user experience") AND (minimal) AND (model OR approach OR method* OR framework) AND (promote* OR importance*)	Search to discuss how companies can apply minimal UX processes, and the importance of UX in these organizations.
(UX OR "user experience" OR "user centered" OR "user-centered") AND (intersection) AND (AI OR "Artificial Intelligence") AND (user OR client OR human) AND (building) AND (product)	Search to discuss the intersection between UX and AI, and how startups can use a user-centered approach for developing their AI products.

The literature review is organized in four sections. This first section discusses the product and project lifecycles, and the importance of management during these lifecycles. More specifically, this section discusses the management of AI and AI products, which is relevant to the research question that seeks to examine the successful growth of AI products. The second section discusses the concepts of the startup lifecycle, the lean startup, and lean UX as avenues for growth to reach business goals. This section analyses UX in the context of the startup environment in an effort to understand UX's role in startups. The third section dives deeper into the concept of UX by discussing the minimum viable user experience concept, and the importance of promoting the use of UX. The fourth section analyzes the intersection of UX and AI by discussing how startups can produce their AI products by implementing UX practices. This section demonstrates the importance of UX for the growth of AI products.

2.1 Product Lifecycle Management, Project Lifecycle Management, and AI

2.1.1 What is PLM?

Product lifecycle management, PLM, is an, “information driven approach to all aspects of a product’s life – from its design inception through its manufacture, deployment and maintenance, culminating in its removal from service and final disposal that addresses this end-to-end process from a holistic perspective” (Slansky, 2006, as cited in Burchardt, 2015). It enables companies to engage all parts of their organizations to successfully introduce new products and services (Burchardt, 2015). PLM allows organizations to innovate, develop, support, and retire their products because it is able to capture a company’s best practices in their products, processes, and intellectual capital (Burchardt, 2015). It is important because it drives the success of partner, supplier, and customer relationships (Burchardt, 2015). PLM also maintains productivity and agility of the innovation cycles for customers, and the efficiency of market uptake and product launch (Burchardt, 2015).

2.1.2 Importance of Proper Management Throughout the Product Lifecycle

It is critical for organizations to have proper management throughout the product lifecycle. One reason why it is critical is that it is easy for companies to lose control over their product, which can result in the product being late to market or to exceed budgeted costs (Stark, 2016). In consequence, there can be a lack of satisfaction or frustration for users, damage to the organization’s image, loss of users, and loss of revenue (Stark, 2016).

The product needs to be managed in all phases throughout its lifecycle to ensure that everything runs smoothly and makes money for the company (Stark, 2016).

2.1.3 Project Lifecycle vs Product Lifecycle

The research question seeks to address UX's role in helping startups successfully grow their AI products. However, it is important to analyze the concept from multiple angles, such as from both the project and product lifecycles because growth can occur in different ways. Therefore, it is important to define the difference between the project and product lifecycles. Firstly, a project is classified as a temporary endeavor, whereas, the product lifecycle spans across a lengthier period (Altunel, 2017). There can be several projects or project lifecycles throughout a product lifecycle (Altunel, 2017). Secondly, the project lifecycle and product lifecycle go through different stages. The project lifecycle stages include Initiation, Planning, Executing, Monitoring and Control, and Closing (Altunel, 2017). In comparison, the stages of the product lifecycle are different and include introduction, growth, maturity, and decline (Altunel, 2017).

2.1.4 Project Management in AI

In a broad context, managing AI involves communication, leadership, coordination, and control of advancements that are always evolving (Berente et al., 2021). This is done while considering social and technological elements, and how they interact (Beath et al., 2013; Lee, 2001). The management of AI also includes making decisions for the different facets of AI, which are autonomy, learning, and inscrutability (Berente et al., 2021). These facets

are interdependent and affect the performance and scope of the AI product (Berente et al., 2021).

Our current knowledge of the management of AI projects is limited (Lichtenthaler, 2020). This has a negative impact on businesses as there are few AI organizations that are able to achieve competitive benefits by leveraging recent progress in various fields of AI (Tambe et al., 2019). Management in product development has a large impact on the success of a business yet there is no authoritative source that explains how to manage AI projects (Vial et al., 2023). As a result, the management of AI has remained a “black box,” and the knowledge of it has been left incomplete beyond initial insights (Lichtenthaler, 2020). In one AI consulting firm, they borrowed from aspects of product management, agile practices, and the AI workflow because of the lack of information on managing AI projects (Vial et al., 2023). Traditional project management was used to divide the projects into phases to manage the overall assignment for the customer (Vial et al., 2023). The agile approach was utilized to execute the work for the project in short cycles iteratively and in an incremental manner (Vial et al., 2023). Lastly, the AI workflow logic was used to manage experimentation and finetuning for the machine-learning models that are going to be integrated in the final product (Vial et al., 2023). The simultaneous presence of the three different approaches gave rise to conflicts (Vial et al., 2023) that need to be managed successfully to complete their AI products. However, there is little other research that managers can consult for the management of AI projects.

2.2 The Startup Lifecycle, The Lean Startup, and Lean UX

2.2.1 *The Startup Lifecycle and Growth*

The startup lifecycle is divided into three phases. The first phase is the bootstrapping stage. It occurs when entrepreneurs try to turn their ideas into a profitable business (Salamzadeh & Kesim, 2015). There is a high-level of uncertainty when entrepreneurs embark on this stage because they are working on multiple major tasks at once: further developing their initial business idea, gathering a team of competent individuals, using personal funds, and asking family and friends for investments into the business (Salamzadeh & Kesim, 2015). As a result, this stage is sometimes characterised by acquiring resources without borrowing (Freear et al., 1995b,c, as cited in Freear et al., 2002). The purpose of the bootstrapping stage is to position the business for growth by demonstrating how the product is feasible, how cash can be managed, team building and management, and acceptance by customers (Brush et al., 2006). The second phase is the seed stage. It is characterized by team work, developing prototypes, entering the market, venture valuations, seeking support mechanisms, and conducting average investments for startup growth (Salamzadeh & Kesim, 2015). During this stage, many startups fail because they cannot find support mechanisms such as accelerators, incubators, business development centres, and hatcheries to grow their business (Salamzadeh & Kesim, 2015). The third phase is the creation stage. This phase occurs when the organization sells its products, enters the market, and hires the company's first employees (Salamzadeh, 2015a, as cited in Salamzadeh, 2015; Salamzadeh & Kesim, 2015). At the end of the creation stage, the company is formed and corporate finance is main strategy used for financing the organization (Salamzadeh & Kesim, 2015).

2.2.2 The Lean Startup and Lean UX

Organizations can utilize UX through the lean startup approach to reach their business goals. The lean startup approach is an agile method of developing new products that users want to buy (Klein, 2013). The key to this approach is to validate features early on and often with users to keep learning about their needs (Klein, 2013). It utilizes lean UX practices in order to cater to user needs (Klein, 2013). Lean UX is user-centered, data-driven, and agile (Klein, 2013). It puts users at the forefront of the process by collecting research and adjusting the product iteratively (Klein, 2013). In addition, there is strong emphasis on UX and engineering teams being agile by working together to create products that users need (Klein, 2013). The lean UX approach allows companies to save money because it prevents them from spending time and money on products or features that users do not want (Klein, 2013). As a result, these UX processes help organizations to devote more attention on motivating, attracting, and engaging their users (Ardito et al., 2014). They are able to allocate more resources to UX in the early stages of product development (Øvad & Larsen, 2015). They make use of low fidelity prototypes, usability tests, workshops, personas, expert evaluations, user journeys, user visits, and analyses of user tasks (Øvad & Larsen, 2015).

2.3 UX

2.3.1 The MVUX Concept

While these UX processes help businesses to achieve their goals, they can be quite extensive and some organizations may not have the time or resources. However, it is still important for organizations to have adequate UX practices (Hokkanen et al., 2016). One

way to provide adequate UX in the beginning, minimal versions of the digital product is to follow the MVUX, minimum viable user experience, concept (Hokkanen et al., 2016). It focuses on providing UX that permits users to comprehend and gain value from the early versions of the product (Hokkanen et al., 2016). The main elements of the MVUX framework for product development in the early stages include attractiveness, approachability, professionalism, and selling the idea (Hokkanen et al., 2016). This approach allows startups to collect meaningful data to validate and develop their product ideas further by iterating in the early stages of product development based on the main elements of the framework (Hokkanen et al., 2016).

2.3.2 Promoting the Importance of UX in Organizations

It is necessary to promote the importance of UX in companies because there are still organizations that neglect or do not use UX processes and research as much as they should (Ardito et al., 2014). There are different ways professionals can promote the importance of UX in organizations when the value of it is not recognized. For example, employees can convince public organizations of the need of explicitly mentioning usability and UX requirements in their Calls for Tenders (Ardito et al., 2014). They can also develop paper prototypes and to discuss them with other stakeholders, including end users (Ardito et al., 2014).

2.4 UX and AI

One way that startups can develop their AI products is through UX. A user-centered approach to building an AI-product allows organizations to achieve greater levels of success because they cultivate knowledge about the needs of end-users that forms the goals, training data and models, and UI of the project (Kayacik et al., 2019). Users sometimes have a mistrust of (Gillath et al., 2021) and reluctance to use AI (Alsheiabni et al., 2019). Tensions can arise during the human-AI interactions, which imposes concerns for the user and harms task performance (Jiang et al., 2023). Therefore, it is important to conduct research and determine mechanisms to address user concerns so AI can be optimally used (Jiang et al., 2023). Insight into the users' thoughts while using AI-products are important because their experiences affect how they interact with the product (Youn & Jin, 2021). For example, when users interact with AI chatbots, features such as those involving the layout, and the tone of the chatbot affect the user's experience (Youn & Jin, 2021). This also has an impact on brand personality perception, parasocial interaction (PSI), and customer relationship management (CRM) (Youn & Jin, 2021). A user-centered approach to the development of the AI chatbot would be beneficial to users because it focuses on adjusting the product to their needs (Kayacik et al., 2019). Therefore, it is important for organizations to develop UX strategies when developing AI products.

2.5 Synthesis of the Literature Review

The analysis of existing literature shows that AI is important to the business world, and it is becoming increasingly important for organizations to develop AI products. In order to develop these AI products in a way that enhances user experience and the success of these products, organizations should consider incorporating UX strategies to ensure their products meet user needs. Unfortunately, the management of UX and AI products have not been thoroughly studied. Therefore, it is necessary to analyze UX's role in helping startups successfully grow their AI products.

Chapter 3: Methodology

3.1 Methodology of the Study

To address our research question, we conducted one case study on ChatBotBiz, an AI chatbot startup company. A case study “is an in-depth exploration from multiple perspectives of the complexity and uniqueness of a particular project, policy, institution, program or system in a ‘real life’” (Simons, 2009). It should be used when researchers want to answer the questions of “how” and “why”, when the behaviour of participants cannot be manipulated, when researchers aim to provide context to a phenomenon under study, and when boundaries between the phenomenon and the context are unclear (Yin, 2009). The case study approach allowed us to obtain an in-depth story on the company, and to hear different participant perspectives on their field of expertise. In addition, a case study is a type of qualitative research (Starman, 2013). For this thesis, it was appropriate to utilize a qualitative approach to conduct the exploratory research because the topic at hand is an emerging topic that has not been studied in-depth. The interviews allowed us to reveal the story of one organization in order to gain rich insight into UX’s role in helping startups successfully grow their AI products.

3.2 Data Collection

Information about the company was obtained through several means. First, information was found on the company’s website and LinkedIn pages. Second, the nine employee interviews provided additional key information. The UX professionals, managers, and

founders were asked the same background and closing questions but different complex questions that were relevant to their position expertise.

3.3 The Company and the Product

A successful AI chatbot company, ChatBotBiz, was studied for the purposes of this research project. The company was founded six years ago in a large North American city and has 51 to 200 employees. Over the last year, the company has experienced layoffs that have affected the technology industry after the Covid-19 pandemic. Their product is an AI chatbot for e-commerce retailers, meant to answer most of users' questions while during online purchases to improve efficiency for retailers. In the early days of the company, one of the founders tried to implement some UX practices by conducting preliminary research. As the company grew, they hired UX professionals, like UX designers and UX researchers to improve the product's interface and features. They were then acquired by a larger technology company due to their success. This demonstrates that the market recognises their success; thus, making the organization an interesting case to examine. Although it was a sample of convenience, the research was conducted in this startup because it was an example of success and we wanted to understand how it can be done. Many AI products are developed through technology startups, which is important for innovation. By analyzing how the company successfully developed their AI product, we will be able to gain more visibility into how decisions and processes related to UX were carried out.

3.4 Participants

A total of nine employees from the AI chatbot company were interviewed for this research project (See Table 2). Out of the nine employees, three participants were female and six participants were male. These nine participants came from three different groups. Three UX professionals, three managers, and three founders interviewed. The three UX professionals interviewed were female, and include two UX researchers and one UX designer. The three managers interviewed were male, and are comprised of three product managers. Lastly, the three founders interviewed were male.

A sample of convenience, and a stratified purposeful sample were used to conduct the research. First, a sample of convenience is a strategy of sampling that occurs when the researcher composes a sample that is fast and convenient (Paré, 2004). In this case, participants were selected based on who I had access to interview. Second, a stratified purposeful sample was used. A purposeful sample is when participants are purposefully selected because they are information-rich cases that can provide value on a certain topic (Patton, 2002). I selected participants purposefully with the goal of recruiting participants that can provide in-depth information about the topic at hand. The sample is stratified when there are samples within samples known as strata (Patton, 2002). Each strata constitutes a homogeneous sample (Patton, 2002). For this research, there were a total of nine participants with three strata that were created. Nine people were interviewed because we did not have access to more people. All levels were represented with three people, and while theoretical saturation was not reached, we did start to rehear themes.

Table 2: Participant Characteristics

Participant	Gender	Role/Title	Time at the Company
UX1	Female	UX Researcher	7 months
UX2	Female	UX Designer	1 year
UX3	Female	Senior UX Researcher	1 year 8 months
F1	Male	Founder	5 years
F2	Male	Founder	5 years
F3	Male	Founder	5 years
PM1	Male	Product Manager	11 months
PM2	Male	Product Manager	6.5 months
PM3	Male	Product Manager	2 years 6 months

3.5 Qualitative Analysis of the Interviews

An inductive approach was used to analyze the qualitative data, which occurs when the researcher finds a recurring phenomena and recurring relations in the different experiences (Paré, 2004). Then, pattern coding diminishes the large blocks of data into smaller units to help the researchers build an evolving schema to understand what is occurring locally (Paré, 2004). This approach is appropriate for a topic such as this one that has not been studied in depth as it enables the researcher to analyze patterns in the research without drawing from prior research. To analyze the data, the transcripts of the nine interviews were entered to NVivo, and nodes were then coded from the participant transcripts. The nodes were general, and gradually became more specific to pull out findings from the transcripts. For example, the nodes were initially separated into roles

and demographic information, and themes and topics. First, for the roles and demographic information node, participants were separated into three groups by their profession, namely UX professional, manager, and founder. These nodes were then coded further into gender and role description in order to have both demographic information and explanations of their profession. Second, for the themes and topics node, the content discussed during the interviews were separated under general themes, and after reading through the data several times these broad topics were coded into more refined categories. Nodes that had several references were topics that were often discussed during the participant interviews. However, nodes that had few references were not considered to be topics that were as important to this research. Therefore, nodes with several mentions were the focus of the results section below.

Chapter 4: Results

The results section of this research project analyses the participant interviews. The results are explained through a framework (See Figure 1) that emerged from the case study data. This framework has five main categories with their own subpoints that encompass the results, namely Startup Characteristics/Culture, Challenges with UX in AI Startup, UX Approach to Growing the Product, Accompanying Strategic Actions, and Results for the Product. Startup characteristics/culture defines the environment. Challenges with UX in AI Startup shows the barriers for UX in the startup environment. UX Approach to Growing the Product and Accompanying Strategic Actions are what contributed to the success of the organization's AI product. Results for the Product provides concrete reasons for what lead to the success of the AI product.

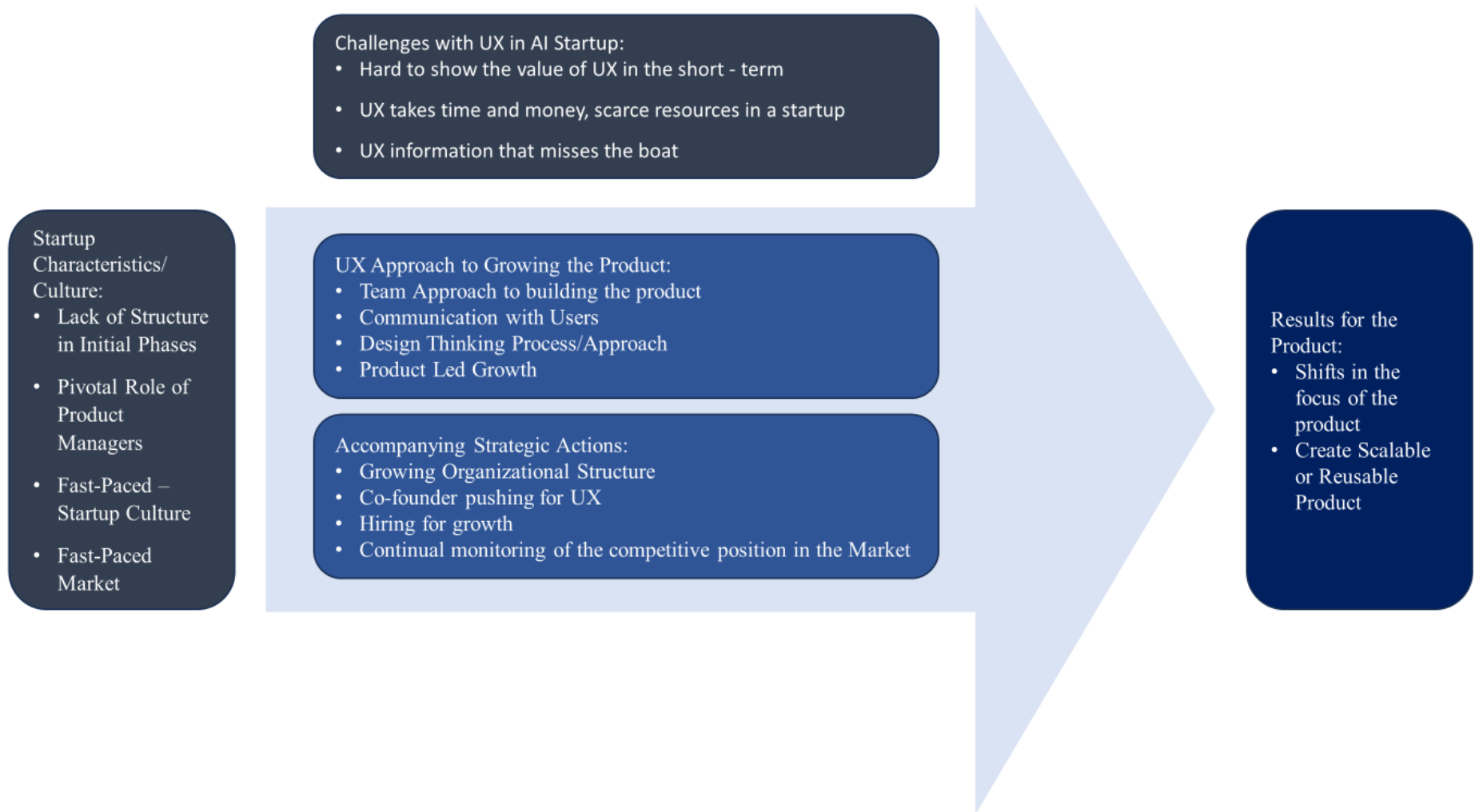
4.1 Startup Characteristics/Culture

Participant interviews reveal four main characteristics of startup culture. These characteristics may influence the role UX plays in a startup.

4.1.1 Lack of Structure in Initial Phases

The first characteristic is that there was a lack of structure in the initial phases of building the product (See Table 3). The company did not have formal processes in place when building the product, and they are still struggling with the lack of structure. In fact, the company “has a tendency to run like a headless chicken towards the goal sometimes,

Figure 1: Framework for AI Product Success



completely forgetting about certain processes” (UX2). Recently, their aim is to standardize like other companies that employees had worked for in the past. At these other companies, “the product manager, the UX researcher and designers are really always together, having lunch together, having coffee together and [have] the same objective” (UX1). They are now working on refining processes for communication among staff members and implementing UX research processes to ensure that the product is optimized for users (PM2).

4.1.2 Pivotal Role of Product Managers

The second characteristic of startup culture is that product managers have a pivotal role (See Table 3). Product managers will drive projects. They make decisions on the features the UX designers, UX researchers, and developers will be working on in the future. They are responsible for the roadmaps of these features. Product Managers “make sure that everything that [they] build is also doable, and it’s something that [they] can actually build, and [they] know the limitations for each of the projects” (UX3). They are also responsible for the competitive position of the product in the market. Product Managers consider questions like, “What is the competitive position of X, Y, Z feature. [...] What are the competitors doing? And are they doing well? What is the difference between your product and their product? How can we differentiate?” (PM2). They do this to ensure that products keep up with industry standards and trends that are beneficial to users.

4.1.3 Fast-Paced – Startup Culture

The third characteristic is a fast-paced startup culture (See Table 3). The goal of startups, like ChatBotBiz, are to be agile, and to try to follow developers closely. However, with an initial smaller team, it can be difficult to control the fast-paced nature of startups. In fact, “when you want to go fast in companies like the startup model or where you want to deliver the value soon, [startups like ChatBotBiz] tend to miss that [value]” (PM3).

4.1.4 Fast-Paced Market

The fourth characteristic of startup culture is a fast-paced market (See Table 3). The needs of the market are always changing. With growing market competition, “clients definitely have more options in front of them. So, [startups] need to make sure that [...] these revenue streams always evolve in some capacity” (PM1). To be successful in a fast-paced market, organizations need to try to grow and to prove themselves to properly suit the needs of their users. One example of this is during the Covid-19 pandemic, the needs of retailers changed. ChatBotBiz had to shift during the Covid-19 pandemic (PM3). While the product was already a remote solution, they had to make their product more “easily available for them [retailers], they can activate [ChatBotBiz’s] product faster, they can be on track” (PM3).

Table 3: Characteristics and Culture that Form the Basis of AI Startups

Lack of Structure in Initial Phases	UX PROFESSIONAL 1: We’re trying to really refine the processes, because at first there wasn’t much UX research being done because
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	<p>they were more focused on creating and designing new features in your products.</p> <p>UX PROFESSIONAL 1: Now, the product managers, we're working alone, designing these new features, and then we just jumped in. So, there needs to be a better integration, because elsewhere [other companies] the product manager, and the UX researcher and designers are really always together, having lunch together, having coffee together and [have] the same objective. Now, sometimes there's a disconnect because we're not always together. So, I think that's the maturity [issue].</p> <p>PRODUCT MANAGER 2: That's what we were discussing in a team meeting: should we standardize a bit more over processes and communications so that it becomes easier for every stakeholder to interact with our team? Because their expectations would be more like on a similar level.</p> <p>UX PROFESSIONAL 2: I think ChatBotBiz has a tendency to run like a headless chicken towards the goal sometimes, completely forgetting about certain processes. I can talk about this forever, but user tests are important like user tests, usability tests, and learning more about our customers is crucial. Sometimes, when you're in a rush to deliver to ship like there is always pressure, we have to ship something you want to either skip that step or not complete it fully.</p>
<p>Pivotal Role of Product Managers</p>	<p>UX PROFESSIONAL 3: Typically, projects are being managed by the manager, and they [the managers] work really closely with everyone on the team who's working on the given projects. So, UX researchers with design, and then also the developers to make sure that everything that we build is also doable, and it's something that we can actually build, and we know the limitations for each of the projects. So, usually the product managers will drive that [project].</p> <p>UX PROFESSIONAL 1: So, there's three product managers are each of them are working on one or more features of the product. So, they're responsible for the roadmap of these features. So, they're the ones who decide in the future, in the next quarter, we'll be designing this part of the future, and so, they're really responsible for that.</p>

	<p>UX PROFESSIONAL 1: The product managers, they're really the ones doing the roadmap of the features. So, us [the UX professionals] we follow them, wherever they want to go.</p> <p>PRODUCT MANAGER 2: So, that's part of the product manager's job, to monitor, "What is the competitive position of X, Y, Z feature. At least your features, but the product in general, like in the market. What are the competitors doing? And are they doing well? What is the difference between your product and their product? How can we differentiate?" So, it's also part of how we should be doing these things, then how decisions are driven.</p>
Fast-Paced – Startup Culture	<p>UX PROFESSIONAL 3: So, we're really trying to push on that because [at] ChatBotBiz we tend to go really fast, and we want to be agile, and we follow the developers really closely, but sometimes it goes very fast.</p> <p>UX PROFESSIONAL 1: Yeah, because we were a startup, and everything was really going fast with a smaller team.</p> <p>PRODUCT MANAGER 3: Sometimes, when you want to go fast in companies like the startup model or where you want to deliver the value soon, we tend to miss that [value] but that's what we are trying to control.</p>
Fast-Paced Market	<p>PRODUCT MANAGER 1: Yes, there is growing competition in the market, so that means that our clients definitely have more options in front of them. So, we need to make sure that [...] these revenue streams always evolve in some capacity.</p> <p>PRODUCT MANAGER 1: So, things change very fast. We're always tried to grow and prove ourselves, but you know, number one whether you're talking about tech development or managing people, like the number one important thing is communication and feedback, and that's what we're trying to do.</p>

	<p>PRODUCT MANAGER 3: So, because of Covid-19 and our product being a remote solution for a lot of retailers and a lot of companies to leverage for their sales and support, we had to shift during the Covid-19 time. So, it is easily available for them [retailers], they can activate our product faster, they can be on track.</p> <p>FOUNDER 3: Perspective came from real use case, real clients using it and us listening to the market and to the clients.</p>
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4.2 Challenges with UX in AI Startup

The nine interviews with participants revealed three reasons why there are challenges with UX in an AI startup. These challenges can act as barriers for these AI startups when they attempt to incorporate UX practices in their business.

4.2.1 *Hard to show the value of UX in the short-term*

The first challenge is that it is hard to show the value of UX in the short-term (See Table 4). In fact, “It’s really hard to demonstrate the value of UX and research” (UX3). Therefore, it is important to “bring in the insights at the time when they’re needed” (UX3). However, “sometimes the value of user research is not seen” (UX1). As a result, UX professionals “have convincing to do and demonstrations to do to make sure to convince [others] that there is a value in [UX], and that it’s important to do it for the quality of the product” (UX1).

4.2.2 UX takes time and money, scarce resources in a startup

The second challenge is that UX takes time and money, and in a startup they do not have much of either (See Table 4). As stated previously, user research is sometimes not seen as valuable (UX1). This is “because it takes time to do your user research, it takes money, and some [people] [...] may feel that it slows down the process” (UX1). For example an organization can have “a very nice functional feature but, the end user is not able to make sense of it [and] move smoothly within the product with that feature from step one to the step N” (PM3). This can occur “when you want to go fast in companies like the startup model or when you want to deliver the value soon” (PM3). When trying to provide immediate value by going too fast or without the right resources and conducting the proper UX research techniques, organizations can miss insight that would provide a more seamless experience for the end user.

4.2.3 UX information that misses the boat

The third challenge is bringing UX information into the product development process too late and ‘missing the boat’ (See Table 4). To be effective, UX professionals must “come in with insights and research in a timely manner [...] because otherwise they might not be used” (UX3). For example, “If you change a prototype, and then you bring in the research insights a bit too late, then [...] they’ve already moved to a third or fourth iteration. So, the research is not as useful and timely” (UX3). In addition to missing the mark by providing UX insight too late, colleagues will need to make a quick decision because the developers are available to work (See UX Professional 3’s second quote in Table 3). This is a “struggle [for UX] researchers because sometimes [they]’re not aligned with the

developer agile cycle” (UX3). At ChatBotBiz “there wasn’t much UX research being done because they were more focused on creating and designing new features in [the] products” (UX1). But now, there is an effort “to review the product, design processes and integrate the research, be sure that the research is done up upfront, from the start of the project” (UX1).

Table 4: UX Barriers in AI Startups

<p>Hard to show the value of UX in the short-term</p>	<p>UX PROFESSIONAL 3: It’s really hard to demonstrate the value of UX and research. If you can bring in the insights at the time when they’re needed, “I need this information to move forward”, and then you’re like, “Okay, Okay.”</p> <p>UX PROFESSIONAL 1: That’s the thing that we really need to push to make sure that we’re there from the start of the project because I think sometimes the value of user research is not seen, because it takes time to do your user research, it takes money, and some [people], I think, they may feel that it slows down the process. So, we have convincing to do and demonstrations to do to make sure to convince [others] that there is a value in [UX], and that it’s important to do it for the quality of the product.</p>
<p>UX takes time and money, scarce resources in a startup</p>	<p>UX PROFESSIONAL 1: I think sometimes the value of user research is not seen, because it takes time to do your user research, it takes money, and some [people], I think, they may feel that it slows down the process.</p> <p>PRODUCT MANAGER 3: Let’s say, the feature is a very nice functional feature but the end user is not able to make sense of it, they [the user] are not able to move smoothly within the product with that feature from step one to the step N, whatever is designed for that. So, that experience needs to be seamless. Sometimes, when you want to go fast in companies like the startup model or when you want to deliver the value soon, we tend to miss that [seamless experience]. But that’s what we are trying to control</p>

	<p>[...] with the product team. We should be able to look at the features holistically and not just from delivering the feature, [but] delivering an experience. So, if you can deliver an experience to the customer, they will get hooked to the product, and you know [there will be increased] chances of having more customers, [and] converting them into a paid customer in pieces with a great UX.</p>
<p>UX information that misses the boat</p>	<p>UX PROFESSIONAL 3: And sometimes, I would say, the main way that we can be effective is if we come in with insights and research in a timely manner, because I think there's one thing about just doing research and making sure we have insights, but it also has to be timely, and making sure that we bring them at the right time, because otherwise they might not be used. I think that's especially true about designs, and things that are more visual or kind of more productized that may not always be true if things continue to move. If you change a prototype, and then you bring in the research insights a bit too late, then you'll miss the boat, and they've already moved to a third or fourth iteration. So, the research is not as useful and timely. So, I would say, it really depends. If we're able to bring the research in a timely manner, then they're getting used potentially, or they have more, they're more likely to be used, and then we'll have more impact, and our research [is] going to be more effective than if we miss the boat.</p> <p>UX PROFESSIONAL 3: If you can bring in the insights at the time when they're needed, "I need this information to move forward", and then you're like, "Okay, Okay." You work really hard behind the scenes but you missed the mark because you can only bring them a week later. Then they're like, "Sorry we had to move on, and we had to just choose, make a quick decision, and because the developers are ready to work" right like we can't just have [that]. I think that's always like the struggle [for] [UX] researchers because sometimes we're not aligned with the developer agile cycle.</p> <p>UX PROFESSIONAL 1: Okay, so the team is getting bigger and bigger, and we're trying to really refine the processes, because at first there wasn't much UX research being done because they were more focused on creating and designing new features in [the] products. But more and more, we're systematically doing more and more research when they're starting and/or designing a new feature, and I know that there's someone in the team, his main objective for the next quarter is really to review the product, design</p>

	processes and integrate the research, be sure that the research is done up upfront, from the start of the project. So, we're getting there.
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4.3 UX Approach to Growing the Product

The interviews with participants demonstrate four ways that ChatBotBiz had a UX approach to growing their product. These four approaches were related to a team approach to building the AI product, communication with users, implementation of the design thinking approach, and product led growth.

4.3.1 Team approach to building the product

The first way is there was a team approach to building the product (See Table 5). ChatBotBiz was able to involve different groups within the organization by allowing them to build their own teams. Managers started as personal contributors and then they were able to build their own team as the company grew (F3). In addition, ChatBotBiz was able to foster a team approach to building their product because “everyone in the team had an impact on the product development” (F1). Several departments within ChatBotBiz, such as, “sales, developers, customer success people, and product obviously, [were] together and talked about, “What’s possible in tech? What the customer is asking?”” (F1). This was a way to, “get the feedback from everyone and then build the right road map” (F1).

4.3.2 Communication with Users

The second UX approach to growing the product is by communicating with users (See Table 5). ChatBotBiz “started the product really with customers needs” (F1). In fact, when “meeting with more and more customers, [they] saw the need specifically in retail to automate questions [...] So, [they] really built the product based on the needs of [their] customers or potential customers” (F1). However, ChatBotBiz sometimes “tend[s] to go really fast” but they try to “consider the users in the process. [...]and] get feedback from users” (UX3). They must do this because they “have a lot of biases, and [they] validate those biases by talking to real customers” (UX2). In doing so, they are “able to see what works, what doesn’t work, what is it that we have missed? What are some opportunities that we can leverage” (UX2)?

4.3.3 Design Thinking Process/Approach

The third way is through applying the design thinking approach to UX processes within ChatBotBiz (See Table 5). To apply the design thinking approach, they need “information all about our users, all about our personas, their pain points, their needs, and their goals” (UX2). Then, they create a low fidelity design to “know what is [their] direction,” and afterward they, “go for high fidelity design” (UX2). In order to apply the design thinking approach properly, the product must go through several iterations. So, after creating the high-fidelity design, they hope, “to validate it with the real customers, validate it with the product team to get the insights from a different perspective, and then [they] go through that loop two times” (UX2). As a result, the “high fidelity designs improve based on the received feedback, plus looping in the developers [...] to make sure that whatever

[they're] designing is actually feasible" (UX2). Then, "once the user tests are done, [...] everyone's happy, then, we hopefully ship the feature" (UX2). This process is applied each time a new feature is added or modified to the product because initially they, "don't know what users want, what their needs are, what they're doing, how they might essentially use a feature product, [so they] [...] do some kind of exploratory work and research" (UX3). In fact, in the initial phases of the company, "the product had many iterations going from a marketing platform to a customer care platform to a holistic platform for retailers" (F3).

4.3.4 Product Led Growth

The fourth way is through product led growth (See Table 5). The "value proposition has evolved [...] to go in more product-led growth versus sales-led growth, so that that comes with making sure that [their] customers become as autonomous as possible" (PM1). To ensure there is product-led growth, ChatBotBiz obtains, "customer feedback, [for a] continuous discovery of [their] clients needs and priorities. [...] [To] try always to understand them better, and see [...] and ask them, "How is it going?" (PM2). To obtain customer feedback, "they have quarterly business reviews with the customer success team and those quarterly business reviews are really a good way to get feedback from the client" (PM2). By discussing these reviews, ChatBotBiz ensures that the product can improve because they are able to collect, "good signals about what are [their] weaknesses, or where [their] opportunities [are]" (PM2).

Table 5: UX – Centered Measures for Growing the AI Product

<p>Team approach to building the product</p>	<p>FOUNDER 1: Everyone in the team had an impact on the product development, because everyone was excited to build a product and a tech product. So, to involve sales, developers, customer success people, and product obviously, [were] together and talked about, “What’s possible in tech? What the customer is asking?” So, get the feedback from everyone and then build the right road map.</p> <p>FOUNDER 3: So, all the managers we hired were personal contributors when they started [...] and once we’re going to get more traction, then these people will be able to build their own team.</p>
<p>Communication with Users</p>	<p>UX PROFESSIONAL 3: But I think the main thing I would say is hopefully, before we ship anything, we’d have to talk to our users. So, we’re really trying to push on that because um ChatBotBiz, we tend to go really fast, and we want to be agile, and we follow the developers really closely, but sometimes it goes very fast. So, we really have to kind of put ourselves out there to make sure that we consider the users in the process. So, once things are shipped and released, we want to make sure that we get feedback from users as well.</p> <p>UX PROFESSIONAL 2: It’s effective because in the design that we ship, that we’re hoping to ship is validated. So, we go into the project, and we have a lot of biases, and we validate those biases by talking to real customers. It’s really effective because we’re able to see what works, what doesn’t work, what is it that we have missed? What are some opportunities that we can leverage? So, yeah, I think, like the most effective part of the process is actually talking to real customers and getting real input and real feedback.</p> <p>FOUNDER 1: Well, we started the product really with customers needs. So, at the beginning, like we had the technology, some pieces of technology. We knew we wanted to develop a virtual assistant with the AI. So, [a] chatbot. But then meeting with more and more customers, we saw the need specifically in retail to automate questions such as, “Is this item</p>

	<p>in stock, or what's the status of my order?" So, we really built the product based on the needs of our customers or potential customers, and eventually it became a carefully featured product that we were able to market specifically for retail.</p>
<p>Design Thinking Process/Approach</p>	<p>UX PROFESSIONAL 3: So, UX processes, I mean [it] depends where the product is in the product side development cycle. But anything from making sure that we get feedback on mocks and prototypes from the UX designer. If we need more context before we start a project because we don't know what users want, what their needs are, what they're doing, how they might essentially use a feature product, then we do some kind of exploratory work and research. So, we try to be there at every stage of the product development cycle. But I think the main thing I would say is hopefully, before we ship anything, we'd have to talk to our users.</p> <p>UX PROFESSIONAL 2: So, for example, before we jump head first into the project, we have to make sure we have all the information about the project.</p> <p>UX PROFESSIONAL 2: The information all about our users, all about our personas, their pain points, their needs, and their goals. So, with that in mind we go and see the low fidelity design. And then, after the low fidelity design, [...] we know what is our direction. So, we go for high fidelity design. Then when that is done, we're hoping to validate it with the real customers, [and] validate it with the product team to get the insights from a different perspective, and then we go through that loop two times. So, two high fidelity designs improve based on the received feedback, plus looping in the developers in the middle of it, to make sure that whatever we're designing is actually feasible. We can build it, and we know the shortcomings of our system. So, we don't present to our users a product that we essentially cannot build. And then [...] once the user tests are done, the developers are happy, everyone's happy, then, we hopefully ship the feature, but that's a very ideal pipeline.</p> <p>FOUNDER 3: We launched a first idea, we signed a few clients with that idea, we looked at the feedback from the customer,</p>

	<p>and at the data coming from the platform, and we iterated. So, the product had many iterations going from a marketing platform to a customer care platform to a holistic platform for retailers with both AI chatbot inbox and all of that growth from the product. Perspective came from real use case, real clients using it and us listening to the market and to the clients.</p>
<p>Product Led Growth</p>	<p>PRODUCT MANAGER 1: Um so value proposition has evolved [...] to go in more product-led growth versus sales-led growth, so that that comes with making sure that our customers become as autonomous as possible.</p> <p>PRODUCT MANAGER 2: Then you want to start scaling then you have to go back over to the drawing board and say, “Okay, right now, we have to consolidate everything that we’ve been implementing over the past few couple years while we were trying to establish our position in the market and everything”. So, this is one thing what drives our decisions and for features after that there are two, one obviously is customer feedback, a continuous discovery of our clients needs and priorities. So, as we go, we try always to understand them better, and see [...] and ask them, “How is it going?” [...] at ChatBotBiz there’s a lot of customer success. So, they have quarterly business reviews with the customer success team and those quarterly business reviews are really a good way to get feedback from the client, honest feedback from the client. Like, “Well, this quarter wasn’t very good. I’m not satisfied. I wanted/I was expecting this and that.” So, when we take the aggregate of all this, then it gives us good signals about what are our weaknesses, or where our opportunities [are].</p> <p>FOUNDER 3: So, the product had many iterations going from a marketing platform to a customer care platform to a holistic platform for retailers with both AI chatbot inbox and all of that growth from the product. Perspective came from real use case, real clients using it and us listening to the market and to the clients.</p>

4.4 Accompanying Strategic Actions

The participant interviews reveal four accompanying strategic actions that allowed the startup to grow their AI product. These actions accompanied the UX approach with the aim of growing the business.

4.4.1 Growing Organizational Structure

The first strategic action was to grow the company's organizational structure (See Table 6). Management "had to rethink how [they] were organized as a team" (PM1). ChatBotBiz did not pay attention to their organizational structure in the initial phases of growing the business because "When you start a business you're basically alone, so, you have to do everything, and when you grow, then you take more of a management hat" (F3). They had to reassess how the team was organized, "operationally, but also how [to] develop great practices, and also how [to] be complimentary to each other's roles" (PM1). To rethink their organizational structure, they "hir[ed] senior people that can do the job in the first place" (F3). In addition, they had to, "divide and concur" (F2). For example, as they, "started to scale [they] started dividing the product team in multiple ways" (F2).

4.4.2 Co-founder pushing for UX

The second strategic action was that a co-founder was pushing for UX (See Table 6). One of the founders at ChatBotBiz believed that, "UX is everything that's customer-facing. So, we should have a UX point of view and design point of view on everything" (F2). This belief translated in his work as he was responsible for the initial UX of the product.

The UX of the product “has to be beautiful, and [...] for [Founder 2] it was the first priority” (F1). While some were not always focused on the UX of the AI product, others in the company hold a similar point of view to the founder. For example, others share the belief “that the user experience is the most important thing, from the feature perspective and the intuitiveness of the feature” (PM3).

4.4.3 Hiring for growth

The third strategic action was to hire the right people that can contribute to the growth of the product (See Table 6). ChatBotBiz realized that, “to grow the product [...] hire the right people” (F1). In fact, a manager at ChatBotBiz “created a full vertical because she hired people around so that [the company] [could] move towards product-led growth” (PM3). As a result, the product team has, “experts from all areas” (PM3). ChatBotBiz’s strategy was to “hire senior people that can do the job in the first place [...] and once [they]’re going to get more traction, then these people will be able to build their own team” (F3). For example, at the beginning, ChatBotBiz had one product manager and when they were large enough, they were able to hire a consultant and then UX designer (F1).

4.4.4 Continual monitoring of competitive position in the Market

The fourth strategic action is how ChatBotBiz was able to have a competitive positioning in the market (See Table 6). A product manager must monitor the product, features of the product, competitors, and the company’s standing in comparison to competitors (PM2).

The product managers are responsible for comparing ChatBotBiz to competitors in the market and relaying that information to the product team. In addition, the “roadmap has almost always been revenue influenced” (F2). Since revenue is heavily attached to clients, ChatBotBiz also pays close attention to important requests from clients, prioritizing their roadmap, and how to ship features (F2). Clients have user insight by using the product themselves or through receiving feedback from their own users. Therefore, it is beneficial to organizations like ChatBotBiz to gather client insight.

Table 6: Accompanying Actions for AI Product Success

<p>Growing Organizational Structure</p>	<p>PRODUCT MANAGER 1: So, management wise, we’ve had to rethink how we were organized as a team. So, I’m talking about operationally, but also how do we develop great practices, and also how we can be complimentary to each other’s roles.</p> <p>FOUNDER 2: It’s divide and concur, you have like eight engineers, and you know everybody can code and then re-value their product, [which] will work on almost everything, obviously [some] developers are more like front-end and others are more back end. But as we started to scale we started dividing the product team in multiple ways.</p> <p>FOUNDER 3: When you start a business you’re basically alone, so, you have to do everything, and when you grow, then you take more of a management hat. But you need to hire senior people. So, that was like strategy, hire senior people that can do the job in the first place.</p>
<p>Co-founder pushing for UX</p>	<p>FOUNDER 1: [Founder 2] is a co-founder also who did the UX, the initial UX.</p>

	<p>FOUNDER 1: So, all the UI is done, all the UX is done. It [the UX of the product] has to be beautiful, and as an engineer, it is not my first priority but for [Founder 2] it was the first priority. So, like the combination of both, like good technology, but also [that it] looks nice.</p> <p>FOUNDER 2: I think UX is everything that's customer-facing. So, we should have a UX point of view and design point of view on everything.</p> <p>PRODUCT MANAGER 3: There's one thing which I would like to say is that the user experience is the most important thing, from the feature perspective and the intuitiveness of the feature.</p>
Hiring for growth	<p>FOUNDER 1: Management processes to grow the product. Well, hire the right people. So, at the beginning we had only one product manager, and as soon as we were big enough, we hired [a] UX designer fulltime but before hiring a UX designer fulltime, we hired a consultant.</p> <p>PRODUCT MANAGER 3: She [a manager] created a full vertical because she hired people around so that we [could] move towards product-led growth. So, that's a big change I've seen, and now, our product team is, I guess, ten [or] twelve people, and we have experts from all areas.</p> <p>FOUNDER 3: But you need to hire senior people. So, that that was like strategy, hire senior people that can do the job in the first place [...] and once we're going to get more traction, then these people will be able to build their own team.</p>
Continual monitoring of competitive position in the Market	<p>PRODUCT MANAGER 2: Oh yeah, our decisions that are a bit of both is our competitive position in the market. So, that's part of the product manager's job, to monitor, "What is the competitive position of X, Y, Z feature. At least your features, but the product in general, like in the market. What are the competitors doing? And are they doing well? What is the difference between your product [and] their product? How can</p>

	<p>we differentiate?” So, it’s also part of how we should be doing these things then how decisions are driven.</p> <p>FOUNDER 2: So, I’d say that roadmap has almost always been revenue influenced. So, really revenue, [...] “What are the most important requests from our clients? How do we prioritize it in a road map? How do we ship it?” So, it always came from a need from the market [...] attached to revenue, obviously.</p>
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4.5 Results for the Product

The participant interviews demonstrate two main reasons for ChatBotBiz’s success with their AI product. The success occurred as a result of the shifts in the focus of the product, and the creation of a scalable reusable product.

4.5.1 Shifts in the focus of the product

The first point is there are shifts in the focus on the product (See Table 7). For ChatBotBiz there were four stages of product development (F2). They were able to shift the focus of their product because they were building and innovating for their clients. Large companies like Decathlon and Simons catalysed the introduction of new features of the product because ChatBotBiz was able to observe their clients’ needs (F3). In listening to their customers, they “knew there was a market, and there was a lot of money attached to that market” (F3). There were also other shifts in the focus of the product because of changes to the value proposition. For example, initially they “were looking for value with big companies, now [they] are looking with volume like small and medium enterprises” (PM3).

4.5.2 Create Scalable or Reusable Product

The second point is that organizations must create scalable or reusable products (See Table 7). Initially, “you start with good intentions and you try to build with a good technology stack but then you end up doing a lot of custom stuff that is not scalable in the long run” (PM2). It is important, “having a foundational technology that can repeat itself and scale” (F2). So, ChatBotBiz was able to automate their product to better help and support their clients. They noticed that, “every brand has received questions such as, “What are your shipping fees?”” (F1). As a result, they saw an “opportunity of automating support questions” (F1). This realisation, “was a game changer, because [...] instead of building just one-off conversation experiences that were difficult to replicate for many [brands], automating support questions was really a product that can be reused for multiple brands” (F1). With the realization that they were able to automate recurring questions across brands, they were able to scale the business and acquire more clients.

Table 7: Resulting Outcomes for the AI Product

Shifts in the focus of the product	FOUNDER 2: So if we sum it up and four key stages of the product development, started as a marketing [...] chatbot company, [...] Then we started to do more [...] full customer journey, customer service, [...] and e-commerce sales. [...] So, we needed an inbox. That’s where it became like [a] chatbot plus human inside one unified inbox. Over time, we added a channel, so, in the pandemic we added features like video chats, it becomes more than just like text space. It became also video and then the ultimate thing is basically all channels under one roof powered by AI, one stop shop inbox for the full customer journey, including phone, email well voice email, and obviously text-based messaging.
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	<p>FOUNDER 2: But you can imagine that as we shift it towards like retail focus and being more of a you know omni-channel like messaging tool, technology partners get more important than having agency partners.</p> <p>PRODUCT MANAGER 3: I think value proposition changed, because initially, we were looking for value with big companies, now we are looking with volume like small and medium enterprises. [...] So, we added a lot of new channels to our offering. When we started, it was just web chat and Messenger. web chat is our internal chat-board solution, which you see on websites. I think I can name, Simons is one of the customers who are using a chat. What if you go to their website? You'll see our bot which we have created from scratch. Then we support the Facebook messenger. But eventually, when the company evolved, we started supporting Google Business Messages and Instagram with Instagram being the [...] emerging channel where [there are] a lot of influencers. [...] A lot of sales are happening now. People's Instagram accounts are becoming their shops as well. So, we have Instagram, and we also are supporting Whatsapp. So, these things are what I saw as changes in the past [...] one and a half, two years.</p> <p>FOUNDER 3: So, again we went from a marketing platform for marketing agencies to deliver marketing stunts for their customers like Videotron or SAQ, to a customer care automation only platform with clients such as Patrick Morin. Looking at the data from Patrick Morin, we decided to build a more complete platform with its own inbox, and then we signed a big client called Decathlon. Decathlon really believed in our mission, and our vision of helping retailers make money out of those channels. So, when we signed Decathlon, we added the entire e-commerce aspect to the platform, and finally the last iteration I would say is Simons. When we signed Simons two years after Decathlon we decided to go all in [by] adding a full inbox, and competing against like the Zendesk of this world, because we knew there was a market, and there was a lot of money attached to that market. So, these are the different iterations that we went through in the product.</p>
<p>Create Scalable or Reusable Product</p>	<p>PRODUCT MANAGER 2: So, you start with good intentions and you try to build with a good technology stack but then you end up doing a lot of custom stuff that is not scalable in the long run. So, after that, when you start, you actually find your product market fit or some kind of product market fit. Then you want to start scaling that. You have to go back over to the drawing board and say, "Okay, right now, we have to consolidate everything that [...] we've been implementing over the</p>

past few couple years while we were trying to establish our position in the market and everything”.

FOUNDER 1: The opportunity of automating support questions, not only marketing campaigns, but also customer support questions [...] was a game changer, because now, instead of building just one-off conversation experiences that were difficult to replicate for many [brands], automating support questions was really a product that can be reused for multiple brands. So, every brand has received questions such as, “What are your shipping fees?” So, that was our first game changer, and the second game changer was. Yes, it’s good to provide conversational experience in Messenger, and Whatsapp and others, but all the [...] customer support agents can respond to those questions we saw so a need to provide a tool for [a] customer service team to better respond to customers with tools that can provide product recommendations, order tracking. So, at some point we decided to build that tool, so, that we have [a] complete solution for both customers and agents.

FOUNDER 1: So, that was one of one factor to have a product that can be reused by multiple brands. So, not too much custom work, but like reusable stuff. Then, also, a product that can be used in multiple countries.

FOUNDER 2: So, it’s always the tension of [...] keeping your big customers happy, but also keeping the vision that you need to build a repeatable business. So, having a foundational technology that can repeat itself and scale.

Chapter 5: Discussion and Conclusion

This thesis aimed to examine UX's role in helping startups successfully grow their AI products. This section will discuss the results of the research in view of this research question, and enfold existing literature (Eisenhardt, 1989). Contributions of this study to research, implications for practice, limitations of the research project, and ideas for future research will also be presented.

5.1 Enfolding the Existing Literature

5.1.1 Startup Characteristics

Four startup characteristics that are part of the story of UX's role emerged from our study: the lack of structure in initials phases of building the product, the pivotal role of product managers, the fast-paced culture, and the fast-paced market. First, participants found there was a lack of structure in the initial phases of building the product because the startup did not have formal processes set in place. Existing literature shows that startups tend to have fewer resources, smaller teams, and higher expectations they will succeed against their competitors (Aggarwal, 2021). In addition, during the initial bootstrapping stage of the startup lifecycle, there is a large amount of uncertainty (Salamzadeh & Kesim, 2015). Entrepreneurs are trying to position the startup successfully so that it can grow (Brush et al., 2006). Our findings corroborate the existing literature by showing a symptom of the lack of structure and the uncertainty in startups.

Second, participants explained that product managers have a pivotal role in a startup as they drive projects through their decisions, and ensure the product is in a good competitive position in the market. Existing research shows that it is important to have proper management during the lifecycle of the product because organizations can easily lose control of their product, which can cause late executions to market or exceeded costs (Stark, 2016). Consequently, there can be a lack of user satisfaction or frustrations that arise, damage to the company image, loss of revenue, and loss of users (Stark, 2016). Our results confirm and extend existing research by showing that product managers are important, and highlighting the increased importance of their role in an AI startup environment.

Third, participants stated how there is a fast-paced culture because startups must be agile. Existing literature discusses how the lean startup approach is an agile method of developing products that users want (Klein, 2013). With this approach, there is an emphasis on engineering and UX teams working together and being agile to create needed products for users (Klein, 2013). Our findings align with the existing literature because the fast-paced culture discussed by participants results from an application of the lean startup approach as the startup is trying to be agile.

Fourth, participants found that their organization must deal with a fast-paced market because the needs of the market are constantly changing. One example to support this claim is how OpenAI's new AI tool, ChatGPT, has the possibility to take over traditional roles held by humans (Agrawal et al., 2022). When technology, like ChatGPT, allows more people to complete tasks, this typically results in new systems with new business models, jobs, and workflows (Agrawal et al., 2022). To unlock ChatGPT's

potential, there will need to be both new and different types of organizations to harness new capabilities and benefit society (Agrawal et al., 2022). Therefore, organizations will need to adapt. This demonstrates how AI will have an increasing impact, and the needs of the market are always changing. Our results confirm the existing research because ChatBotBiz has been dealing with a fast-paced market through the increasing impact of AI, and the constantly changing market needs.

5.1.2 Challenges with UX in AI Startup

The interviews with participants demonstrate three challenges with UX in AI startups, namely that it is hard to show the value of UX in the short-term, UX takes time and money but there are scarce resources in startups, and UX information can be brought too late into the product development process. The first challenge is that it is difficult to demonstrate the value of UX in the short-term. Participants found that they have to convince others of the value of UX because their colleagues sometimes cannot see it. This is an issue that is also prevalent in other organizations because existing research shows that businesses neglect UX or they do not utilize UX practices as much as they should (Ardito et al., 2014). However, it is important to utilize UX practices because it helps organizations achieve their business goals by putting user needs at the centre of the process (Klein, 2013). Our findings confirm the existing research because the difficulty in demonstrating the value of UX in the short term is an example of how organizations neglect or do not utilize UX despite its importance. In addition, our findings show that it is especially hard in an AI startup when the pace of change in industry is extremely fast.

The second challenge is that UX takes time and money, and startups have scarce resources. The interviews show that time and money are scarce in startups, which causes these organizations to not have the resources to invest in UX. Existing literature shows that startups typically have fewer resources (Aggarwal, 2021), and a large number fail (Olinga, 2023). In comparison, larger organizations tend to have the resources to deploy AI models and conduct research (Aggarwal, 2021). Our results support the existing literature because AI startups like ChatBotBiz do not typically have the necessary resources like time and money to invest into their businesses in comparison to larger, more established organizations. However, our results also extend this research by showing that UX becomes of secondary importance because organizations do not have the necessary resources to invest in UX.

The third challenge is that UX information can ‘miss the boat’ by bringing insight too late during product development. The interviews revealed that UX professionals are not always aligned with the agile cycle that developers follow. As a result, UX insights must come at the right time or they will not be used because startups will sometimes go too fast and miss the value of UX. Existing research shows the importance of lean UX because it is an agile way of putting users at the center of collecting research and adjusting a product iteratively (Klein, 2013). Lean UX puts a strong emphasis on agility when the UX and engineering teams work together (Klein, 2013). This prevents organizations from spending time and money on features or products that users do not want (Klein, 2013). Similarly, our study finds that the application of lean UX techniques is important for an AI startup like ChatBotBiz because it is especially hard for startups that do not have the

resources to waste on unused UX insight because of the misalignment of UX professionals and the developer agile cycle.

5.1.3 UX Approach to Growing the Product

There are four ways the startup had a UX approach to grow the product: through a team approach to building the product, communication with users, design thinking approach, and product led growth. The first way is that ChatBotBiz had a team approach to building the product. Employees started as personal contributors, and after building their own teams different departments were able to contribute to product development. Existing literature states that PLM has a holistic perspective throughout the entire process of building a product (Slansky, 2006, as cited in Burchardt, 2015). This enables all departments in the startup to engage while introducing new products and services (Burchardt, 2015). Our results align with existing literature because ChatBotBiz utilized a PLM approach to build the product holistically as a team.

The second way is through communicating with users. They started the product by taking into account user needs and got feedback from users throughout the process of continuing to grow the product. Existing research discusses how the user-centered approach in UX allows organizations to succeed through cultivating knowledge about their end-users (Kayacik et al., 2019). It is important to gain insight into user thoughts with AI products because this affects how they are able to interact with the product (Youn & Jin, 2021). In addition, the user-centred approach focuses on adapting the product to fit user needs (Kayacik et al., 2019). Our findings add an example to support the existing

research because a startup like ChatBotBiz utilizes the user-centered approach by communicating with users to grow the product.

The third way is by applying the design thinking approach. They went through several iterations of gathering information on users, created low fidelity prototypes, high fidelity prototypes, and speaking to users through user tests. As stated previously, existing literature states that PLM is information-driven and involves all aspects of the product's life from inception to the final disposal (Slansky, 2006, as cited in Burchardt, 2015). Our results support existing literature because they show that design thinking is a strategy for product development; therefore, it can be can be integrated with the development of products in the PLM process.

The fourth way is with product led growth. Interviews reveal the goal of product led growth is to help users become as autonomous as possible, and try to gain an understanding of their users. Existing research shows that PLM allows companies to innovate, develop, support, and retire products to ensure best practices are upheld (Burchardt, 2015). Our findings show that product led growth is an element of PLM because it can help users to become autonomous and gain an understanding of the end-users during the innovation and development phases of the PLM process.

5.1.4 Accompanying Strategic Actions

The results from our analysis showed that there were four accompanying strategic actions responsible for the success of the startup such as growing the organizational structure, having a co-founder push for UX, hiring for growth, and continuously monitoring the

competitive position of the market. First, an accompanying strategic action was to grow the startup's organizational structure. In the initial phases of the startup, they did not focus on the organizational structure because they were small, and had to do everything themselves. Then, when they started to grow, they had to rethink the structure of their organization to create teams that compliment one another. Existing literature on the startup lifecycle shows that each stage of growth is characterized by different attributes. From a management lens, bootstrapping positions the organization from growth through team building and management (Brush et al., 2006). Then, in the seed stage there is team work and a search for support mechanisms (Salamzadeh & Kesim, 2015). Finally, in the creation stage the organization sells the product and hires employees (Salamzadeh, 2015a, as cited in Salamzadeh, 2015; Salamzadeh & Kesim, 2015). Our results add an example that supports the literature because ChatBotBiz follows the trajectory of the startup lifecycle.

Second, the participants stated how one of the co-founders always pushed for UX. Founder 2 always believed that UX was important and prioritized it when others did not. Our findings further support the existing research that organizations neglect or do not use UX when they should (Ardito et al., 2014). However, because of Founder 2 efforts in promoting the importance of UX, this is a strategic action that allowed the startup to thrive.

Third, the interviews revealed that an accompanying strategic action for growth of the product was to hire the right people. They hired senior people as personal contributors, and these people then built their own teams. This is a specific example of what happens during the startup lifecycle. It demonstrates the importance of acquiring the right people

at each stage of the startup lifecycle for product growth. From team building in the bootstrapping stage (Brush et al., 2006), team work in the seed stage (Salamzadeh & Kesim, 2015), and hiring employees in the creation stage (Salamzadeh, 2015a, as cited in Salamzadeh, 2015; Salamzadeh & Kesim, 2015). Our research adds another example that supports the existing literature as hiring the right people is seen in various steps in the startup lifecycle.

Fourth, participants explained how the startup was able to continuously monitor the competitive position of the market. As stated previously, the product managers at ChatBotBiz are responsible for ensuring the product is in a good competitive position. As it is known from existing literature, organizations need product management to not lose control of the product, which can cause other issues such as lack of satisfaction among users, damage to image, and loss of revenue and users (Stark, 2016). Our findings support existing literature as the startup was able to continuously monitor the competitive position in the market through the product managers that help maintain organizational success.

5.1.5 Results for the Product

UX's role in helping the startup become successful with their AI chatbot was evident in two ways: the shifts in the focus of the product, and the creation of a scalable and reusable product. First, there were shifts in the focus of the product because while building and innovating, the startup listened to their clients. Existing research shows that the user-centered approach allows organizations to cultivate knowledge on their users and focus on adapting to fit their needs (Kayacik et al., 2019). Our results confirm the existing

research because through the UX approach to growing the product and accompanying strategic actions, they were able to communicate with users, gain insight to their needs and shift the focus of the product accordingly.

Second, the startup was able to create a scalable and reusable AI product. They were initially doing custom work and realized that it was not scalable, and they shifted to having a technology that was repeatable, which allowed them to acquire more clients. Existing literature supports shows that organizations need standardization if they want AI to scale (Vartak, 2022). They need to build repeatable models with well-defined processes to prevent the creation of products that are expensive and slow to implement (Vartak, 2022). Our findings support this because ChatBotBiz was able to standardize by using a scalable and repeatable AI product to acquire more clients.

5.2 Contributions to Research

The study makes three contributions to research: it extends research on the lean startup, it extends the understanding of UX, and it extends research on AI. The literature review showed that startups do not know how to grow their AI products and there is little existing or related research on this topic. To address this gap, this research project sought to examine UX's role in helping startups successfully grow their AI products. In doing so, the thesis contributes to research by extending our understanding of startups, UX, and how to manage AI.

First, it extends research on the lean startup, which is an agile method of developing products that users want (Klein, 2013). With this approach, lean UX practices

are utilized to ensure that features are validated with users early and often to keep learning their needs (Klein, 2013). Our results show the characteristics and culture of the startup environment that have important implications for the role of UX, which extends the literature on the lean startup as we can understand the particular environment of this type of organization, and how it can affect the successful creation of an AI product.

Second, it extends the understanding of UX. Businesses are known to neglect or to not utilize UX practices like they should (Ardito et al., 2014). Our findings bring awareness to this issue and shows concrete challenges or barriers as to why this may occur with UX in organizations like startups. The findings are that it is difficult to demonstrate the value of UX in the short-term, startups have scarce resources and UX takes time and money, and UX information can be brought too late during the product development process.

Third, it extends research on AI by studying the management of AI products. As previously noted, we cannot use existing or related research to study the issue of growing AI products. In particular, there is not much information on the management of AI products because practitioners who seek to find better ways of managing their AI projects can only draw on a small number of studies (Vial et al., 2023). Our findings extend the research by providing information on this gap in the research through the UX approach of growing an AI product and the accompanying strategic actions so startups will better understand how to manage their AI products.

5.3 Implications for Practice

This research offers several insights for practitioners. First, founders and managers can also utilize a UX approach to growing their product. By taking inspiration from ChatBotBiz, they can encourage different departments to give insight to help build their AI products, communicate with users to receive insight to their needs, utilize a design thinking approach to building the product by iterating on the product's UX, and engage in product led growth by helping users become more autonomous while using the product. Second, founders and managers can follow the accompanying strategic actions that the startup applied to develop a successful AI product. The strategic actions include growing the organizational structure by creating teams over time that compliment one another's work, pushing for UX among those that do not believe in the value of UX, hiring employees to grow the company by starting as personal contributors to becoming team leaders, and monitoring their competitive position in the market in relation to competitors. In applying these actions, founders and managers will naturally shift the focus of their AI product, and they may create reusable products that allow them to scale their business to success.

5.4 Limitations

There are two main limitations for this research project. The first limitation is that only three different groups of participants were interviewed, namely UX professionals, product managers, and founders. This limited the understanding of the product and the organization. More groups of participants could have been interviewed in an effort to gain

more insight for the purposes of this research. For example, no users of the product were interviewed. It would have been interesting to determine the success of the AI product from their perspective, and through their experiences. Also, employees from different departments – such as customer success, finance, marketing, sales – were not interviewed. Interviewing different departments in the startup could have offered more insight into the company and its AI chatbot product.

The second limitation is that this research project only focused on one case study. This was a limitation because there were various employee perspectives from only one organization. It would have been interesting to conduct research on several cases, and to compare the success of various organizations. For example, different AI startup situations could have been analyzed such as through studying both successful and unsuccessful companies. This could have been done to compare the factors that influence success and failure for AI startups.

5.5 Future Research

While this case study is an important start, there is still little existing information on the management of AI products and more research needs to be done. In fact, the three challenges we found from the participant interviews present opportunities for future research.

The first challenge was that it is hard to show the value of UX in the short-term. Organizations do not always recognize the importance of UX processes for company success. Therefore, to ensure that startups recognize this value, one area for potential

future research is to further study the influence of UX on AI startup success. If startups are able to understand the relationship between UX and success, they will be more likely to implicate UX processes in their business practices.

The second challenge was that UX takes time and money but startups have scarce resources, and do not have much of either. To combat this challenge, future research can study light weight UX techniques that are best suited for AI startups. In this way, startups can know the right techniques to apply UX processes and benefit from UX given their limited resources like time and money.

The third challenge was that UX information can miss the boat by being brought too late in the product development process. This is an issue because UX processes are not being used to their full potential to help the product succeed. Therefore, future research can study the developer agile cycle and UX cycle misalignment, and see what factors can improve this misalignment. This will allow organizations to improve their processes, and allow them to use their UX information more effectively.

5.6 Conclusion

The goal of this thesis was to examine UX's role in helping startups successfully growth their AI products. To address this research question, we conducted an exploratory case study by interviewing UX professionals, product managers, and founders. The data was analysed through a qualitative approach to understand UX's role in ChatBotBiz's success when growing their AI product.

A framework was then derived from the participant interviews to show how ChatBotBiz was able to be successful. The framework demonstrates characteristics of the startup environment that have important implications for the role of UX, and challenges with UX in an AI startup. Next the framework showed that there was a UX approach to growing the product along with some accompanying strategic actions to propel the product towards success. Finally, these actions led ChatBotBiz to shift the focus of their product and create scalable or repeatable products.

There was a discussion on the results in relation to the research question and existing literature where our findings confirmed and gave examples of the existing research through the ChatBotBiz case study. In addition, we analyzed the contributions to research, implications for practice, limitations, and ideas for future research.

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Appendix

Interview Guide

Part 1:

General Information (All will respond)

1. What does your company do?
2. What is your role/position?
3. How long have you been with the company?

Part 2:

Questions for The Founders/Managers

How did the product grow throughout its development?

What were some of the most notable changes?

What were the different factors that motivated the changes?

- Internal
- External
- Growth
- Other

What did you change specifically? (Please note that it is possible for that some of these areas of focus did not change) What were the key factors that changed the most?

- Key partners/helpers
- Key activities
- Value proposition
- Customer relationships
- Customer segments
- Key resources
- Channels
- Cost
- Revenue streams

What management processes did you implement to grow your product? Which were successful and which were unsuccessful? Why?

Questions for The UX Professionals

What UX processes are being implemented in an effort to improve the product?

How are these processes effective?

How is the product managed?

How satisfied are your users with these changes? Do you have any signs they are satisfied?

What processes do you hope to add on in the future?

Part 3:

Wrap-up

Is there anything else you would like to add?

Is there someone else you think we should talk to at (company) about this project?